

ALTERNATIVES DEVELOPMENT AND ANALYSIS REPORT

For

ADMINISTRATIVE ACTION ENVIRONMENTAL IMPACT STATEMENT



Wake and Johnston Counties

STIP Project Nos. R-2721, R-2828, and R-2829
State Project Nos. 6.401078, 6.401079, and 6.401080
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REPORT SUMMARY

The North Carolina Department of Transportation (NCDOT) is exploring options for meeting transportation needs in the growing areas south and east of Raleigh with the Complete 540 - Triangle Expressway Southeast Extension project. Rapid population growth in Wake and Johnston counties is forecast to increase strain on existing roads. The Complete 540 project would extend the existing Triangle Expressway, from NC 55 Bypass in Apex to the US 64/US 264 Bypass in Knightdale, completing the 540 Outer Loop around the Raleigh metropolitan area.

The Complete 540 project will involve federal actions, such as construction-related environmental permits, and potential federal funding; for this reason, the project is subject to requirements under the National Environmental Policy Act (NEPA). Under NEPA, a project expected to have significant effects requires preparation of an Environmental Impact Statement (EIS). NEPA requires that the project's EIS carefully explore and objectively evaluate a broad range of "reasonable and feasible alternatives" that could satisfy the project's purpose. "Reasonable and feasible alternatives" are those solutions that would be practicable from technical, environmental, social, and economic perspectives. These alternatives can include many types of transportation improvements, including construction of new roadways in various locations, improving existing roadways, expanding mass transit, and other strategies. A "no build" alternative is also considered. Preliminary data about the potential impacts, feasibility, and ability to meet the project's purpose are then used to identify a subset of the alternatives for more detailed study. These are known as the Detailed Study Alternatives (DSAs). The DSAs are then evaluated more fully in the Draft EIS.

PROJECT PURPOSE

The project's *Purpose and Need Statement*, prepared in 2011, is a technical document that details the underlying transportation needs for the Complete 540 project and presents the overarching purpose for the project within the context of those needs. The purpose of the Complete 540 project is to improve transportation mobility and to reduce traffic congestion in the project area. An additional desirable outcome of the project is to improve system linkage in the area roadway network.

OVERVIEW OF ALTERNATIVES DEVELOPMENT

The alternatives development process included several iterative steps, which are documented in detail in this *Alternatives Development and Analysis Report*. The major steps included the following:

- Development of several broad **Alternative Concepts** for achieving the project purpose and a **first tier screening** of these concepts for their ability to meet the project purpose and whether they are reasonable and practicable.
- For the Alternative Concepts that emerge from the first tier screening, development of **Preliminary Corridor Segments** that identify potential locations for the improvements. This was followed by evaluation of the segment features and potential impacts in a **second tier screening**. The remaining Preliminary Corridor Segments were then combined into color-coded **Preliminary Corridor Alternatives**.
- The color-coded **Preliminary Corridor Alternatives** developed in the second tier screening could be combined into various end-to-end **Preliminary Study Alternatives** between NC 55

Bypass and US 64/US 264 Bypass. Impacts to the human and natural environments were then quantitatively estimated and compared in the **third tier screening** to identify recommended DSAs.

FIRST TIER SCREENING OF ALTERNATIVE CONCEPTS

The Alternative Concepts included broad categories of transportation system improvements. The two primary criteria used to determine whether each Alternative Concept met the project purpose were:

- The ability to improve transportation mobility, as measured by effect on average speed and travel times on the area roadway network.
- The ability to reduce forecast traffic congestion on the area roadway network.

The Alternative Concepts that would result in the largest improvements under both of these criteria would best meet the project purpose and were therefore retained for further development and evaluation in the second tier screening. The Alternative Concepts retained for second tier screening were the new location roadway concept and a hybrid concept that would include some new location roadway and some improvement to existing roads. The no-build concept was also retained as a baseline for comparison to build concepts.

SECOND TIER SCREENING OF PRELIMINARY CORRIDOR SEGMENTS

In this step, NCDOT developed forty 1,000-foot wide Preliminary Corridor Segments. Each segment crossed a relatively small part of the study area, but could be combined in various combinations to form numerous end-to-end alternatives. Preliminary Corridor Segments were evaluated using qualitative and quantitative factors. Those segments providing a route with no similar location options were generally retained for further evaluation. In areas with several location options, the Preliminary Corridor Segments in each area were comparatively evaluated to identify those with the best potential for overall impact minimization.

Twenty-four of the Preliminary Corridor Segments were retained for further evaluation. To facilitate discussion and evaluation, these were then combined to form seven color-coded Preliminary Corridor Alternatives, which covered various portions of the project area. NCDOT presented maps showing these seven Preliminary Corridor Alternatives to the public at informational workshops held in September 2010.

THIRD TIER SCREENING OF PRELIMINARY CORRIDOR ALTERNATVIES

The third tier screening of the seven color-coded Preliminary Corridor Alternatives has been the lengthiest and most complex step of developing and evaluating alternatives. Following the September 2010 public informational workshops and coincident coordination with environmental resource and regulatory agencies, some of the original color-coded Preliminary Corridor Alternatives were eliminated, others were modified, and new options were added into consideration, all in the interest of finding alternatives that could best minimize and balance potential impacts. In March of 2011, the North Carolina General Assembly passed legislation that limited the evaluation of certain options. This limitation prompted NCDOT to search for still other new options to minimize and balance impacts. The General Assembly repealed the March 2011 legislation in June 2013, allowing the full range of remaining Preliminary Corridor Alternatives to be evaluated.

A timeline of the evaluation and elimination of the Preliminary Corridor Alternatives during the third tier screening is as follows:

- | | |
|----------------|---|
| November 2010 | NCDOT uses public and agency input to eliminate the Blue, Purple, and Yellow Corridor Alternatives. The Orange, Red, Pink, and Green Corridor Alternatives remain under consideration. |
| December 2010 | Following coordination with agencies and local governments, NCDOT adds four options into consideration to avoid or minimize impacts to community resources and neighborhoods in the eastern part of the project area. These are the Tan, Brown, Teal, and Mint Green Corridor Alternatives. |
| January 2011 | NCDOT recommends elimination of the Red Corridor Alternative due to its significant community impacts and the Pink Corridor Alternative due to its inability to serve traffic needs as well as other alternatives, as well as its impacts. The resource and regulatory agencies agreed with the recommendation to eliminate the Pink Corridor Alternative, but recommended retaining the Red Corridor Alternative due to its potential for avoiding habitat for the federally protected Dwarf Wedgemussel and for reducing total wetland impacts. |
| March 2011 | NC General Assembly enacts legislation (NCSL 2011-7) that limits the evaluation of certain options, including the Red Corridor Alternative. |
| Fall 2012 | New Preliminary Corridor Alternatives are considered for their ability to reduce wetland impacts similar to the Red Corridor Alternative while minimizing community impacts. One of these, the Lilac Corridor Alternative, shows potential to balance impacts similarly to other options under consideration. |
| December 2012 | Federal Highway Administration (FHWA) and US Army Corps of Engineers (USACE) issue a letter confirming that full evaluation of the Red Corridor Alternative would be necessary for the project to meet federal regulations and to be eligible for federal funds. |
| December 2012 | The Capital Area Metropolitan Planning Organization (CAMPO) passes a resolution at its December meeting requesting that NCDOT evaluate all reasonable alternatives. This resolution and an accompanying letter are sent to the members of the NC General Assembly requesting repeal of NCSL 2011-7. |
| January 2013 | The Garner Town Council sends a letter to the NC General Assembly asking that NCDOT “fully [consider] all reasonable alternatives” including the Lilac Corridor Alternative and the previously eliminated Blue and Purple Corridor Alternatives. |
| Spring 2013 | NCDOT reconsiders the previously reviewed alternatives for their potential to connect to the new Lilac Corridor Alternative, reducing overall wetland impacts. An alignment following the Purple to the Blue to the Lilac Corridor Alternative (the “Purple-Blue-Lilac Corridor Alternative”) shows potential to balance impacts similarly to other options under consideration. |
| June 2013 | NC General Assembly passes legislation that repeals the restrictions created by NCSL 2011-7. |
| July 2013 | NCDOT resumes all environmental study activities for the project. |
| September 2013 | NCDOT and FHWA recommend Detailed Study Alternatives (DSAs) for further evaluation in the project’s Draft EIS. |

- October 2013 NCDOT holds public meetings to solicit feedback on the recommended DSAs and requests comments on the recommended DSAs from the resource and regulatory agencies.
- December 2013 NCDOT and FHWA use public and agency feedback to help determine that the all of the recommended DSAs should be carried forward for detailed study and documentation in the Draft EIS.

With the resumption of project activities, NCDOT documented the development and analysis of the project, as summarized above, in this *Alternatives Development and Analysis Report*. The Preliminary Corridor Alternatives remaining under consideration for detailed study are the following:

- Orange Corridor Alternative
- Red Corridor Alternative
- Lilac Corridor (portion east of Sauls Road only)
- Purple-Blue-Lilac Corridor Alternative
- Green Corridor Alternative
- Mint Green Corridor Alternative
- Brown Corridor Alternative
- Tan Corridor Alternative
- Teal Corridor Alternative

Together, these Preliminary Alternatives can be combined in various ways to form seventeen unique end-to-end alignments between the NC 55 Bypass in Apex and the US 64/US 264 Bypass. These are the DSAs, shown in **Figure 5-8** at the end of this report, which will be evaluated and documented in detail in the project's Draft EIS.

1 INTRODUCTION

In October 2002, the North Carolina General Assembly passed legislation authorizing the creation of the North Carolina Turnpike Authority (NCTA). The NCTA has been tasked to study, plan, design, construct, operate and maintain a system of toll roads, bridges, and/or tunnels supplementing the traditional non-toll transportation system serving the citizens of North Carolina (NC General Statute [GS], §136-89.182). In recent years, NCTA has been integrated as a part of the North Carolina Department of Transportation (NCDOT).

In order for a project to be developed as a toll facility, North Carolina law requires that the project be 1) included in a locally adopted comprehensive transportation plan and 2) shown in the current NCDOT *State Transportation Improvement Program* (STIP) (GS §136-89.183[a][2]) along with other legislative stipulations. For any toll road developed in the state, NCDOT must maintain an existing, alternate, comparable non-toll route (GS §136-89.197). Revenues from tolls are to be used to cover the cost of financing, constructing, operating, maintaining, reconstructing, rehabilitating, and replacing the toll road (GS §136-89.188). Legislation requires that when the road is paid for, tolls will be removed (GS §136-89.196).

The Complete 540 - Triangle Expressway Southeast Extension (540 Outer Loop) project is included in the Capital Area Metropolitan Planning Organization (MPO) and Durham-Chapel Hill-Carrboro MPO joint *2035 Long Range Transportation Plan* (LRTP). Additionally, this project is included in the current NCDOT STIP as three projects: R-2721, R-2828, and R-2829.

In 2013, the North Carolina General Assembly took actions to amend the prioritization of strategic transportation investments (North Carolina Session Law 2013-183). NCDOT is currently authorized to study, plan, develop, and undertake preliminary design work on up to nine toll (Turnpike) projects. NCDOT is developing the Complete 540 - Triangle Expressway Southeast Extension as a potential toll project. Also in 2013, the General Assembly enacted legislation (North Carolina Session Law 2013-94) directing NCDOT to strive to expedite the environmental study of Complete 540.

1.1 NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act (NEPA) of 1969, as amended, requires federal agencies to consider the potential environmental consequences of their proposals, document their analyses, and make this information available to the public for comment prior to project or program implementation. NEPA requires federal agencies to use an interdisciplinary approach in planning and decision-making for any action that adversely impacts the environment.

The proposed Complete 540 - Triangle Expressway Southeast Extension will involve federal actions and potential federal funding, so it is subject to NEPA. The lead federal agency is the Federal Highway Administration (FHWA). NCDOT is the lead state agency sponsoring the project. The US Army Corps of Engineers (USACE) is a cooperating agency because it is anticipated that this project will require a permit to discharge dredged or fill material in waters of the United States, under Section 404 of the Clean Water Act

Under NEPA, a project expected to have significant effects on the environment requires preparation of an Environmental Impact Statement (EIS). NEPA regulations require that an EIS rigorously explore and objectively evaluate a range of reasonable and feasible alternatives that satisfy the purpose of the project. Reasonable and feasible alternatives are those that are practical from a technical,

environmental, social, or economic standpoint. The range of alternatives to be considered should include: alternative ways of meeting the purpose of the project in the area, alternative locations, and the “no action” alternative.

1.2 PROPOSED ACTION

NCDOT, in cooperation with the FHWA, proposes transportation improvements in the project study area and surrounding region to address transportation needs as defined in the project’s *Purpose and Need Statement* (Lochner, 2011). The focus of these improvements includes the consideration of an extension of the Triangle Expressway (NC 540) from NC 55 Bypass in Apex to the US 64/US 264 Bypass in Knightdale. This project is designated as three projects in the NCDOT 2009-2015 STIP: R-2721, R-2828, and R-2829. Together, these STIP projects would combine to complete the 540 Outer Loop around the Raleigh metropolitan area. In some instances for the ease of discussing the project, the project is referred to as having two phases: Phase I is the western portion of the study area between NC 55 Bypass in Apex and I-40 near the Wake/Johnston County line; Phase II is the eastern portion of the study area between I-40 and US 64/US 264 Bypass in Knightdale. NCDOT established a protected corridor for the project between NC 55 Bypass and I-40 in 1996 and 1997 (**Section 3.3**). For purposes of meeting the requirements of NEPA, both phases are being examined in the current study as a single and complete project. It is likely that the project would be constructed in phases, but depending on the availability of funding, may or may not be consistent with the current phase descriptions noted. **Figure 1-1** shows the general project setting.

The project study area is located south and southeast of the City of Raleigh between the towns of Holly Springs to the west and Knightdale to the east. The project study area extends as far south as NC 42 between Fuquay-Varina and Clayton. While most of the project study area is within Wake County, a small portion of western Johnston County is also included. **Figure 1-2** depicts the project study area.

This project, referred to as the Complete 540 - Triangle Expressway Southeast Extension, is intended to improve transportation mobility and reduce forecast traffic congestion. The proposed action is included in the Capital Area Metropolitan Planning Organization (MPO) and Durham-Chapel Hill-Carrboro MPO joint *2035 Long Range Transportation Plan* (LRTP), as well as the Capital Area MPO *2009 – 2015 Metropolitan Transportation Improvement Program* (MTIP). In addition, the proposed action is included in the state’s system of Strategic Highway Corridors (SHC) aimed at providing a safe, reliable, and high-speed network of highways within North Carolina (NCDOT, 2008).

NCDOT developed the *Purpose and Need Statement* (Lochner, 2011) for this project with input from federal and state environmental regulatory and resource agencies and the Capital Area MPO at resource and regulatory agency meetings and at Capital Area MPO meetings held on June 16, 2010, and September 15, 2010. NCDOT also incorporated public input solicited at Public Informational Meetings held on September 21, 22, and 23, and December 2, 2010. **Section 6** describes this coordination in greater detail.

1.2.1 Summary of Need for Proposed Action

The Capital Area MPO and Durham-Chapel Hill-Carrboro MPO joint LRTP states that the **goal for the region’s overall transportation system is to provide a cost-effective system that, among other things, maintains long-term mobility for people and the movement of goods** (**Section 3.4.1**). In large part, this mobility-related need is driven by past and projected future rapid growth in Wake County and in western Johnston County in and around the town of Clayton. In recent decades, the

populations of Wake and Johnston counties and the town of Clayton have grown much faster than the State average. Local governments predict continued rapid growth in these areas over the next decades.

Currently there are **limited transportation options to provide sufficient capacity for efficient, high-speed local and through travel between rapidly-growing communities south and east of Raleigh and major employment and activity centers along the 540 Outer Loop and along roadways connecting to the 540 Outer Loop, such as I-40, NC 147, and US 1/US 64.** I-40, I-440 and I-540 are the primary controlled access highways currently connecting these rapidly-growing communities to major employment and activity centers, such as Research Triangle Park (RTP), Raleigh-Durham International Airport (RDU), the Brier Creek area, Durham, and Cary. Other roadway options are limited to roads with lower posted speed limits, no control of access, and traffic signals. In addition to being a key transportation corridor for local freight and commuter traffic, I-40 through the Triangle Region is also a key corridor for long distance travelers. There are also limited transit options in the area (**Section 3.2**).

A portion of the project study area lies within the ten-mile emergency planning zone (EPZ) for the Harris Nuclear Plant in New Hill, approximately 22 miles southwest of Raleigh. Existing evacuation routes within this area are generally arterial highways and rural roadways without controlled access.

Poor levels of service (LOS), defined as LOS E or F, currently characterize several major roadways in and near the project study area; many more area roadways are predicted to experience poor LOS in the future. Based on 2008 traffic data, poor LOS already occur on the following facilities in and near the project study area (**Figure 1-3**):

- I-40 between NC 147 and Lake Wheeler Road and most segments of I-40 between White Oak Road and NC 42,
- Most of NC 42 between NC 55 and the US 70 (Clayton) Bypass, and
- NC 50 between NC 42 and US 70.

With increases in traffic volumes projected in the future, a substantial portion of the roadway network in and near the project study area would deteriorate to LOS E or F by 2035 (**Figure 1-4**). For this study, a desirable level of service is defined as LOS D or better – conversely, an unacceptable level of service is defined as LOS E or F (**Section 3.2**).

1.2.2 Purpose of Proposed Action

Based on the identified transportation needs, the purpose of the proposed action is to improve transportation mobility for trips within, or traveling through, the project study area during the peak travel period. A second purpose of the proposed action is to reduce forecast congestion on the existing roadway network within the project study area.

Based on state and local plans, a desirable outcome of the project will be to improve system linkage in the roadway network in the project study area. As included in state and local plans, the proposed action would be the final link in the 540 Outer Loop envisioned for more than 40 years, completing a controlled-access, high-speed circumferential facility around the outskirts of Raleigh. The facility would benefit not only the local commuters living south and east of Raleigh, but also longer distance motorists and trucks that are passing through the Triangle Region to and from points south and east.

1.3 REPORT PURPOSE AND ORGANIZATION

This report documents the alternatives development and analysis process resulting in the identification of the Detailed Study Alternatives (DSAs) to be studied in detail in the project's Draft Environmental Impact Statement (EIS).

This report is divided into the following sections:

- 2** First Tier Screening of Alternative Concepts
- 3** Development of Preliminary Corridor Segments
- 4** Second Tier Screening of Preliminary Corridor Segments
- 5** Third Tier Screening of Preliminary Corridor Alternatives
- 6** Agency and Local Government Coordination and Public Involvement

Section 2 describes the first tier screening of Alternative Concepts. In this step, several broad Alternative Concepts were identified and considered for their ability to meet the key elements of the project purpose, and to determine whether they would be reasonable.

Section 3 includes a discussion of how Preliminary Corridor Segments for the project were developed for the concepts remaining after the first tier screening of Alternative Concepts.

Section 4 describes the second tier screening of Preliminary Corridor Segments. In this step, a combination of qualitative and quantitative evaluation measures was used to assess the features and potential impacts of the Preliminary Corridor Segments. The results were compared to identify Preliminary Corridor Segments to consider in the third tier Screening and to determine those to eliminate from further consideration.

Section 5 describes the third tier screening. In this step, the Preliminary Corridor Segments remaining following the second tier screening were combined to form color-coded Preliminary Corridor Alternatives, which could then be combined to form end-to-end Preliminary Study Alternatives. One option for improving existing roadways and one hybrid option for improving existing roadways in combination with a new location roadway also remained following the second tier screening. Conceptual designs were created within these Preliminary Corridor Alternatives, and these were used to quantitatively estimate impacts to the human and natural environments. Estimated impacts for the Preliminary Corridor Alternatives and Preliminary Study Alternatives were compared and seventeen Preliminary Study Alternatives are recommended for detailed study as DSAs in the Draft EIS. The third tier screening involved substantial public involvement, agency and intergovernmental coordination, and special State legislation, and required several iterative steps to reach the recommendations for DSAs. This section is therefore organized in roughly chronological order in an attempt to convey the iterative nature of the process.

Section 6 summarizes the agency and local government coordination and public involvement that contributed to the evaluation of alternatives and the selection of DSAs.

1.4 SUMMARY OF ALTERNATIVES CONSIDERED AND ALTERNATIVES FOR DETAILED STUDY

Each of the Alternative Concepts was evaluated to determine whether it would meet the project's purpose, and whether it would be reasonable to implement. Through the three-step screening process, those alternatives that could not fulfill the project purpose, had excessive impacts compared to other

alternatives, or were considered unreasonable, were recommended for elimination from further consideration.

1.4.1 First Tier Screening of Alternative Concepts

The first tier screening, documented in **Section 2**, considered the five Alternative Concepts: the No-Build Alternative, Transportation Demand Management (TDM) Alternative, Transportation System Management (TSM) Alternative, Mass Transit/Multi-Modal Alternative, and Build Alternative. These concepts were screened against each element of the project's purpose. Those Alternative Concepts not meeting any of these elements were removed from further consideration. The results of this screening suggested that only an expressway-type facility, either on new location or as a combination of new location expressway and improved existing roadways, would meet the purpose of the project. The No-Build Alternative was also retained to provide a baseline for comparison with other project alternatives.

1.4.2 Second Tier Screening of Preliminary Corridor Segments

For the second tier screening, documented in **Section 4**, forty 1,000-foot wide Preliminary Corridor Segments on new location, along with segments that would improve existing roadways, were evaluated and compared using a mix of qualitative and quantitative approaches to assess potential impacts, as well as reasonableness and practicability. Corridor segments not eliminated in the second screening were combined to form seven color-coded Preliminary Corridor Alternatives. The seven Preliminary Corridor Alternatives could be combined in various combinations to form nine end-to-end Preliminary Study Alternatives. One alternative consisting of improvements to existing roadways and one alternative consisting of a hybrid of new location roadway and improvements to existing roadways were also retained through the second tier screening.

1.4.3 Third Tier Screening of Preliminary Corridor Alternatives

Many of the color-coded Preliminary Corridor Alternatives were eliminated during the third tier screening, documented in **Section 5**, because they offered no relative advantage with respect to potential environmental impacts over similar alternatives, yet they would result in significant community disruption. The alternatives that would include improvements to existing roadways and the alternative that would include a hybrid of new location roadway and improvements to existing roadways also were eliminated due to potential environmental impacts and feasibility concerns.

After presenting the Preliminary Corridor Segments to the public, several additional Preliminary Corridor Alternatives were added into consideration to address public and local government concerns. After these new Preliminary Corridor Alternatives were introduced, some previously eliminated Preliminary Corridor Alternatives were reevaluated for their potential to be combined with the new Preliminary Corridor Alternatives to minimize overall impacts. After eliminating some of these additional options or portions of these options due to potential environmental and community impacts and lack of relative advantages, the remaining Preliminary Corridor Alternatives could be combined to form seventeen end-to-end Preliminary Study Alternatives, which were recommended as DSAs for further study in the Draft EIS. Following public and agency input, NCDOT and FHWA designated all of these as DSAs for further study. The seventeen DSAs are:

- 1 Orange to Green
- 2 Orange to Green to Mint Green to Green
- 3 Orange to Brown (South) to Tan (North) to Green

- 4 Orange to Brown to Green
- 5 Orange to Green to Teal to Brown to Green
- 6 Orange to Red to Green
- 7 Orange to Red to Mint Green to Green
- 8 Orange to Purple-Blue-Lilac to Green
- 9 Orange to Purple-Blue-Lilac to Green to Mint Green to Green
- 10 Orange to Purple-Blue-Lilac to Brown (South) to Tan (North) to Green
- 11 Orange to Purple-Blue-Lilac to Brown to Green
- 12 Orange to Purple-Blue-Lilac to Green to Teal to Brown to Green
- 13 Orange to Lilac (at Sauls Road) to Green
- 14 Orange to Lilac (at Sauls Road) to Green to Mint Green to Green
- 15 Orange to Lilac (at Sauls Road) to Brown (South) to Tan (North) to Green
- 16 Orange to Lilac (at Sauls Road) to Brown to Green
- 17 Orange to Lilac (at Sauls Road) to Green to Teal to Brown to Green

2 FIRST TIER SCREENING OF ALTERNATIVE CONCEPTS

The FHWA recommends that the basic Alternative Concepts listed below should be considered “when determining reasonable alternatives” (FHWA Technical Advisory T 6640.8A, 1987):

- *No-Action or No-Build Alternative Concept*
- *Transportation Demand Management (TDM) Alternative Concept* (not included in Advisory T 6640.8A, 1987)
- *Transportation System Management (TSM) Alternative Concept*
- *Mass Transit or Multi-Modal Alternative Concept(s)*
- *Build Alternative Concept(s)*, which included improvement of existing roadways, of new location roadways, and hybrid concepts incorporating both of these types of improvements.

The purpose of the first screening is to determine which of these Alternative Concepts could be developed to meet the purpose of the project. Those concepts that cannot be developed to meet the purpose of the project will be removed from further consideration.

2.1 ALTERNATIVE CONCEPTS

The Alternative Concepts evaluated in the first screening are summarized below. Additional details about each of the Alternative Concepts are described in the *Southeast Extension First Tier Screening Traffic Memorandum* (HNTB, 2011). A copy of this memorandum is in **Appendix A**.

2.1.1 No-Build Alternative Concept

The No-Build Alternative Concept typically includes short-term minor improvements (e.g., safety and maintenance improvements) that maintain continuing operation of the existing roadway network. It was used as the baseline comparative alternative for the project design year (2035). The No-Build Alternative Concept assumes that the transportation systems in the project study area will continue to develop as currently planned in the Capital Area MPO and Durham-Chapel Hill-Carrboro MPO joint 2035 LRTP, but without the proposed Complete 540 - Triangle Expressway Southeast Extension project.

2.1.2 TDM Alternative Concept

The TDM Alternative Concept includes strategies that result in more efficient use of transportation resources by changing traveler behavior. Typically, TDM improvements do not involve major capital improvements. Examples of TDM strategies currently in use in the project study area include staggered work hours and flex-time (employer-based) and ride-sharing. While ride-sharing strategies, including carpools and vanpools, can provide a flexible option to transit for some travelers, the ability of these voluntary programs to substantially reduce traffic volumes on particular roadways is minimal.

Triangle Transit organizes numerous vanpools in the Triangle Region. The Triangle Transit vanpool program currently has over 25 vanpools connecting locations in the project study area to destinations across the Triangle Region.

GoTriangle, a partnership of public transportation agencies and organizations in the Triangle Region, operates a ride-matching service for area residents. Interested residents register with the service and

GoTriangle provides registrants with lists of other nearby residents also interested in ridesharing. SmartCommute@rtp is a program operated by the Research Triangle Park (RTP) Foundation. The program is designed to help RTP employees find alternatives to driving alone to work through TDM strategies operated by individual employers in RTP. The SmartCommute@rtp program has 27 member employers that represent the majority of RTP's full-time workers.

2.1.3 TSM Alternative Concept

TSM measures typically consist of low-cost, minor transportation improvements to increase the capacity or operational efficiency of an existing facility. There are two main types of TSM improvements: operational and physical.

Examples of TSM operational improvements include:

- Traffic law enforcement
- Access control
- Signal coordination
- Turn prohibitions
- Speed restrictions
- Signal phasing or timing changes

Examples of TSM physical improvements include:

- Turn lanes
- Intersection realignment
- Improved warning and information signs
- New signals or stop signs
- Intersection geometric and signalization improvements

The TSM Alternative Concept for this study considered minor improvements along the existing major roadways in the project study area, including Ten-Ten Road, NC 42, NC 55, US 401 and NC 50. These improvements could include traffic signal coordination, access control measures (e.g., driveway consolidation, closing median breaks), and intersection improvements such as adding intersection turn lanes and extending turn lanes to hold longer queues.

TSM measures such as traffic law enforcement, speed restrictions, intersection realignment, improved warning and information signs and the addition of new signals or stop signs were not included in the TSM Alternative because these would have limited benefit on overall system traffic operations. Existing major roadways in the project study area lack sufficient capacity to handle existing and projected traffic volumes. These TSM measures would provide only minor improvements and would not reduce congestion.

Traffic signals on most of the major thoroughfares in the project study area are generally spaced from 0.5 miles to 2 miles apart. Most of these facilities also feature numerous unsignalized intersections and driveway access points. As the number of intersections per mile increases, the opportunity for crashes increases. The existence of too many intersections per mile also increases delay and congestion by disrupting the traffic flow through the area and reducing travel speeds.

Coordinated traffic signals on facilities such as these could result in minor improvements in traffic flow, particularly where existing traffic signals are more closely spaced. However, there would

continue to be delays at intersections and slowed traffic as motorists turn into and out of driveways along these routes.

Access control measures such as consolidating driveways and closing median breaks could also result in minor improvements in traffic flow, particularly along roadways in more urban settings where there are numerous existing driveways and median breaks. Measures such as these, however, would typically require service roads to be installed, making the footprint of the improvements much wider.

2.1.4 Mass Transit/Multi-Modal Alternative Concept

The Mass Transit Alternative Concept would include bus or rail passenger service. A major advantage of mass transit is that it can provide high-capacity, energy-efficient movement in densely traveled corridors. It also serves high-density areas by offering an option for automobile owners who do not wish to drive, as well as service to those without access to an automobile. The Multi-Modal Alternative Concept would combine mass transit with all of the roadway projects included in the 2035 LRTP except Complete 540.

Triangle Transit provides fixed route bus service connecting the major centers of the Triangle Region. Two Triangle Transit bus routes serve the project study area. Route 102 connects downtown Raleigh to Garner and serves a park-and-ride lot at the Forest Hills Shopping Center in Garner. Triangle Transit has proposed to extend this route southeast to Clayton, serving park-and-ride facilities in Johnston County. Route 311 connects Apex to RTP, with park-and-ride lots at Galaxy Food near downtown Apex and Lake Pine Plaza.

Raleigh's Capital Area Transit (CAT) provides fixed-route bus service throughout the city. Two CAT bus routes serve the project study area. Route 40X provides express bus service between downtown Raleigh and Wake Technical Community College along US 401. Route 7 connects downtown Raleigh to Garner, including stops at park-and-ride lots at two shopping centers along US 401. The Knightdale to Raleigh Express (KDX) route, the result of a partnership between Triangle Transit, CAT, and the town of Knightdale, connects downtown Raleigh and Knightdale to the east.

The town of Cary's transit service, C-Tran, operates six fixed bus routes, including one in the project study area. Route 5 follows Kildaire Farm Road from the northern edge of the project study area to downtown Cary.

Transit improvements included in the 2035 LRTP include expansion of bus service throughout the region as well as light rail and commuter service. Light rail between north Raleigh (near I-540 and Triangle Town Center), downtown Raleigh, Cary, RTP, Durham and Chapel Hill is included as a 2025 horizon year project. An extension of the light rail system from Cary to Apex is included as a 2035 horizon year project. Commuter rail between Wake Forest, downtown Raleigh, and Clayton is included as a 2025 horizon year project.

2.1.5 Build Alternative Concepts

Several types of Build Alternative Concepts were considered and evaluated, including improvements to existing roadways and construction of new location roadways. Additional hybrid concepts were also considered; these would consist of constructing part of the project as a new location roadway and improving existing roadways for the remaining part.

2.1.5.1 Improve Existing Roadways Alternative Concept

The Improve Existing Roadways Alternative Concept would widen existing expressways in the project study area, upgrade a primary parallel arterial roadway, or consist of a combination of these improvements. Major travel routes through the project study area include several two- and four-lane arterial roadways. In the Phase I or western project area (NC 55 Bypass in Apex to I-40 south of Raleigh), the primary parallel roadways to a potential new location alternatives are Ten-Ten Road (SR 1010), a two-lane rural arterial roadway; and NC 55 from Apex south to Fuquay-Varina (a two-lane arterial), continuing east along NC 42 (a two- to five-lane rural arterial roadway). There are no arterial facilities that provide a parallel roadway to a potential new location alternative in the Phase II or eastern part of the project study area—existing roadways in this area do not form a direct link between I-40 and US 64/US 264 Bypass. Several variations of the Improve Existing Roadways Alternative Concept were considered:

Improve Existing Roadways 1

Under this variation, the following highways would be widened to twelve lanes: I-40 from NC 147, west of Raleigh, to south of NC 42 I-440 from I-40 to US 64/US 264 Bypass, and US 64/US 264 Bypass from I-440 to US 64 east of Knightdale. This Alternative Concept is shown in **Figure 2-1**.

Improve Existing Roadways 2

Between NC 55 and I-40, this variation would upgrade the following roadways to six lane facilities, either as controlled-access highways with service roads or as six-lane arterials:

- NC 55 from NC 540 to NC 42
- NC 42 from NC 55 to I-40

Between I-40 and US 64/US 264 Bypass, this variation would widen the following roadways to twelve lanes:

- I-40 from south of NC 42 to I-440
- I-440 from I-40 to US 1 north of Raleigh
- US 64/US 264 Bypass from I-440 to I-540

This Alternative Concept is shown in **Figure 2-2**.

Improve Existing Roadways 3

Between NC 55 and I-40, this variation would upgrade the following roadways to six lane facilities, either as controlled-access highways with service roads or as six-lane arterials:

- Jessie Drive from NC 540 to Ten Ten Road
- Ten Ten Road from Jessie Drive to I-40 (including a segment on new location between NC 50 and I-40)

Between I-40 and US 64/US 264 Bypass, this variation would widen the following roadways to twelve lanes:

- I-40 from south of NC 42 to I-440
- I-440 from I-40 to US 1 north of Raleigh
US 64/US 264 Bypass from I-440 to I-540

This Alternative Concept is shown in **Figure 2-3**.

2.1.5.2 New Location Highway Alternative Concept

The New Location Alternative Concept would involve construction of a controlled-access highway on new location from NC 55 Bypass in Apex to US 64/US 264 Bypass in Knightdale. This first level of screening did not differentiate between potential alternative corridor locations. Preliminary Corridor Segments were developed for subsequent evaluation in the second tier screening, described in **Section 4.0**.

Based on early, planning-level analysis, it was determined that a tolled scenario would be feasible for the New Location Alternative Concept. Using preliminary traffic and revenue analysis, NCDOT has determined that the project is feasible with tolling as part of the project funding mix. Using tolls, NCDOT can provide a portion of the funding early in the process to augment other resources and construct the project many years earlier than with solely traditional funding sources. Using tolls as a funding mechanism for construction and maintenance allows needed capacity to be added when traditional funding methods would otherwise prevent or delay completion of this important project. Toll financing will also likely yield favorable results in the project prioritization process at NCDOT; however, this prioritization process does not influence NEPA-related decision making. The Capital Area MPO and Durham-Chapel Hill-Carrboro MPO joint LRTP indicates that the funding for Complete 540 will include tolling.

This New Location Alternative Concept is an extension of the Triangle Expressway (NC 540), North Carolina's first modern toll road. This facility was constructed using a combination of funding sources; some of which are being repaid through toll collections. A similar approach is anticipated for the Complete 540 project.

A completely non-tolled (traditionally funded) scenario would not be reasonable. The current NCDOT STIP includes the project as a toll-financed facility; available funds are planned for implementing other, non-toll projects. Traditional (non-toll) transportation funding sufficient to fully fund this project is not likely in the foreseeable future. In 2005, the Towns of Cary, Apex, Holly Springs, Fuquay-Varina and Garner, as well as the Regional Transportation Alliance passed a joint resolution supporting construction of the project as a toll facility, acknowledging that lack of other funding sources would delay the project indefinitely. A copy of this resolution is in **Appendix B**.

2.1.5.3 New Location/Improve Existing Roadway Hybrid Alternative Concept

The New Location/Improve Existing Roadway Hybrid Alternative Concept would include a combination of constructing a roadway on new location and either widening existing expressways or upgrading a primary parallel arterial roadway between NC 55 Bypass in Apex and I-40. Both the new location and the improved roadway sections of this alternative would be controlled-access highways to provide a consistent facility type for the length of the project and to be consistent with North Carolina's Strategic Highway Corridors (SHC) system. A controlled-access highway option would maximize the capacity of the new/upgraded road and is warranted by traffic projections for the existing roadway network. This scenario assumes that the new location sections would be tolled. Several variations of the Hybrid Alternative Concept were considered:

Hybrid 1

Between NC 55 and I-40, this variation would involve construction of a controlled-access highway on new location. Between I-40 and US 64/US 264 Bypass, this variation would widen the following roadways to ten lanes:

- I-40 from south of NC 42 to I-440
- I-440 from I-40 to US 1 north of Raleigh
- US 64/US 264 Bypass from I-440 to I-540

This Alternative Concept is shown in **Figure 2-4**.

Hybrid 2

Between NC 55 and I-40, this variation would upgrade the following roadways to six-lane, controlled-access facilities:

- NC 55 from NC 540 to NC 42
- NC 42 from NC 55 to I-40

Between I-40 and US 64/US 264 Bypass, this variation would involve construction of a controlled-access highway on new location.

This Alternative Concept is shown in **Figure 2-5**.

Hybrid 3

Between NC 55 and I-40, this variation would upgrade the following roadways to six-lane, controlled-access facilities:

- Jessie Drive from NC 540 to Ten Ten Road
- Ten Ten Road from Jessie Drive to I-40 (including a segment on new location between NC 50 and I-40)

Between I-40 and US 64/US 264 Bypass, this variation would involve construction of a controlled-access highway on new location. This Alternative Concept is shown in **Figure 2-6**.

2.2 SCREENING CRITERIA

Each Alternative Concept was evaluated to determine its potential to meet each element of the purpose of the project. The screening criteria are listed below and are described in further detail in the following sections.

The primary criteria are:

- **Would the Alternative Concept improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period?**
- **Would the Alternative Concept reduce forecast traffic congestion on the existing roadway network within the project study area?**

A secondary criterion based on a desirable outcome of the project is:

- **Would the Alternative Concept improve system linkage in the roadway network in the project study area?**

The ability of each Alternative Concept to meet each of the primary screening criteria was determined through a combination of quantitative and qualitative evaluations. Several quantitative Measures of Effectiveness (MOEs) were used in this evaluation; the MOEs are summarized below.

Those Alternative Concepts that would result in the comparatively largest improvements relative to an element of the screening criteria would meet that element of the project's purpose. Conversely, Alternative Concepts that would either result in the comparatively smallest improvements relative to an element of the screening criteria would not meet that element of the project's purpose. In addition, if it would result in minor, localized, and/or temporary improvements, or if it would have no effect on that element, the Alternative Concept was considered unable to meet that element of the project purpose. Alternative Concepts were only eliminated if they would fail to meet one or both of the primary screening criteria. While each Alternative Concept was qualitatively evaluated according to its potential to meet the secondary criterion based on the desirable project outcome of system linkage, this evaluation is only used to provide information about the Alternative Concept. No Alternative Concepts were eliminated based on their inability to improve system linkage.

It should be noted that carrying an Alternative Concept forward beyond the first screening does not necessarily mean it will meet the project purpose. Alternatives were carried forward in the first screening if, based on the information available, they appeared to have the potential to meet both of the primary elements of the purpose. Alternative Concepts could also be eliminated later in the process if additional information and details made it clear that they could not meet the project purpose.

2.2.1 Ability to Improve Transportation Mobility for Trips within, or Traveling Through, the Complete 540 – Triangle Expressway Southeast Extension Project Study Area during the Peak Travel Period

The goal for the region's overall transportation system (as defined in the Capital Area MPO and Durham-Chapel Hill-Carrboro MPO joint 2035 LRTP) is to provide a cost-effective system that, among other things, maintains long-term mobility for people and the movement of goods. In and around the Complete 540 study area, this mobility-related need is driven by past and projected future growth in Wake County, western Johnston County, and around the town of Clayton. The LRTP includes completion of the 540 Outer Loop (I-540/NC 540) as a six-lane, new-location toll facility within the study area as a 2025 horizon year project in order to address mobility needs in this area. However, a range of transportation improvements would improve mobility in the project study area and on the surrounding roadway network.

Two Measures of Effectiveness (MOEs) were used to evaluate the ability of Alternative Concepts to improve mobility:

- *Average speed on the major roadway network in the project study area during the PM peak travel period, defined by the Triangle Regional Model (TRM) as 3:00 to 7:00 PM.* Roadway improvements can increase average speed on the major roadway network by providing new or more direct connections, by increasing the capacity of the roadway network, and by improving traffic flow on existing facilities, which all reflect improved mobility. Alternative Concepts that would result in the comparatively largest increase in average speed over current forecast conditions for 2035 would maximize this MOE and would contribute towards meeting the improve mobility purpose.
- *Travel times during peak travel periods (as defined by the TRM) between major origin and destination points for commuters in and surrounding the project study area.* Selection of the origin and destination points is described in the *Southeast Extension First Tier Screening Traffic Memorandum* (HNTB, 2011). Roadway improvements can reduce travel times by providing new or more direct connections, by increasing the capacity of the roadway network, or by improving traffic flow on existing facilities which all reflect improved mobility. Alternative Concepts that would result in the comparatively largest

reduction in travel times for the typical user of the transportation system traveling through the project study area over current forecast conditions for 2035 would maximize this MOE, helping to meet the mobility purpose of the project.

2.2.2 Ability to Reduce Forecast Traffic Congestion on the Existing Roadway Network within the Project Study Area

Based on 2008 traffic data, poor levels of service (LOS), which are defined as LOS E and F, currently occur on several key roadway links in the project study area, including much of I-40, most of NC 42, and portions of NC 50. For this study, a desirable level of service is defined as LOS D or better – conversely, an unacceptable level of service is defined as LOS E or F (**Section 3.2**). Even with construction of planned transportation improvements included in the LRTP, projected increases in traffic volumes are expected to lead to a deterioration of LOS on a substantial portion of the project study area roadway network to LOS E or F by 2035.

Each Alternative Concept was evaluated according to this evaluation criterion to determine if it would result in reduced delay during the peak travel period on interstates and arterial roadways within the project study area over current forecast conditions for 2035. Those Alternative Concepts that would result in the comparatively largest positive improvement in peak period LOS for the typical user of the transportation system would meet this element of project purpose.

Three MOEs were used to evaluate the ability of Alternative Concepts to reduce congestion:

- *Total Vehicle Hours Traveled (VHT) on the major roadway network in the project study area over an average daily period.* By reducing congestion on the existing roadway network, roadway improvements can contribute to decreased total VHT on the network. Alternative Concepts that would result in the comparatively largest reduction in Total VHT on the major roadway network in the project study area over current forecast conditions for 2035 would achieve the best results for this MOE and contribute to meeting the congestion reduction purpose of the project.
- *Congested Vehicle Miles Traveled (VMT) on the major roadway network in the project study area during the PM peak travel period.* Major roadway network links forecast to experience traffic volume to capacity ratios of greater than 0.8 were considered congested links (LOS E or F). Calculating the 2035 total congested VMT on the major roadway network during the PM peak travel period provides information about the relative levels of congestion forecast for the Alternative Concepts. Alternative Concepts that would result in the comparatively largest reduction in Congested VMT on the major roadway network in the project study area over current forecast conditions for 2035 would have the greatest impact for this MOE and would help this Alternative Concept meet this project purpose.
- *Congested VHT on the major roadway network in the project study area during the PM peak travel period.* Similar to the preceding two MOEs, this MOE indicates relative levels of congestion forecast for the Alternative Concepts. Alternative Concepts that would result in the comparatively largest reduction in Congested VHT on the major roadway network in the project study area over current forecast conditions for 2035 would achieve the best results for this MOE and would help meet the congestion reduction project purpose.

2.2.3 Ability to Improve System Linkage in the Roadway Network in the Project Study Area

The 2035 LRTP lists the Complete 540 – Triangle Expressway Southeast Extension as a regionally significant project. Regionally significant projects provide access to and from the region, or to major destinations in the region. Statewide, I-40 is the backbone of North Carolina’s interstate system, providing the connection between southeastern North Carolina and western North Carolina, including many of the State’s major cities along this corridor. The project would provide the key remaining link in the 540 Outer Loop system, increasing access between the terminus of the Western Wake portion of the Triangle Expressway (NC 540) at NC 55 Bypass in Apex and the existing terminus of I-540 at US 64/US 264 Bypass in Knightdale. The project also would provide a key link supporting the I-40 network, thereby improving system linkage in the regional transportation network. Improvements with the potential for completing the 540 Outer Loop system would improve system linkage, meeting this desirable outcome of the project. In addition, improvements that provide faster access to the I-40/I-540 network for residents in the project study area would also improve system linkage and meet this desirable outcome of the project.

2.3 QUANTITATIVE ANALYSIS OF PROJECT PURPOSE MOEs

The Triangle Regional Model (TRM) was used to generate forecast traffic data to quantitatively evaluate each of the MOEs for project purpose described in **Section 2.2**. The development and analysis of traffic data according to these MOEs is described in the *Southeast Extension First Tier Screening Traffic Memorandum* (HNTB, 2011) and summarized below.

For each MOE, the percent change in the metric for each Build Alternative Concept relative to the No-Build Alternative Concept was calculated. The range of percent changes was then subject to quartile ranking analysis and each Build Alternative Concept was assigned a quartile ranking from 1 (lowest quartile, representing the least percent change in the metric) to 4 (highest quartile, representing the largest percent change in the metric).

It is important to note that the traffic study area used for analysis of the MOEs was slightly larger than the project study area for alternatives development. To create the traffic study area, the northern project study area boundary was shifted to include I-40/I-440 and US 1/US 64. By including these facilities, the analysis of MOEs could better capture the effects of the various Alternative Concepts on the area’s roadway network. More information about the traffic study area, including a map, is in **Appendix A**.

2.3.1 Average Speed

Average daily travel speeds on the major roadway network in the traffic study area during the PM peak period were calculated using the TRM. Average daily travel speeds could be calculated for the No-Build and Build Alternative Concepts; results are shown in **Table 2-1**.

Under the No-Build scenario, the average daily travel speed on the major roadway network in the traffic study area during the PM peak period would be 44.8 miles per hour. The New Location Highway Alternative Concept would result in the largest percent increase in average daily travel speed, increasing it by 5.7 percent over the No-Build to 47.3 miles per hour. Other Alternative Concepts in the third and fourth quartile with respect to percent change in travel speed were Improve Existing 2 (arterial concept), Hybrid 2, and Hybrid 3. The remaining Build Alternative Concepts

Table 2-1: Average Daily Travel Speeds in Traffic Study Area (2035) – PM Peak Period

Alternative Concept	Average Speed (mph)	Percent Change Over No-Build	Quartile Ranking of Percent Change Over No-Build
No-Build	44.8	n/a	n/a
Improve Existing 1	43.7	-2.5	1
Improve Existing 2 - Arterial	45.6	1.8	3
Improve Existing 2 - Freeway	44.0	-1.8	1
Improve Existing 3 - Arterial	44.1	-1.5	1
Improve Existing 3 - Freeway	44.2	-1.2	2
New Location Highway	47.3	5.7	4
Hybrid 1	44.7	-0.2	2
Hybrid 2	46.1	3.0	3
Hybrid 3	46.3	3.5	4

Note: Data calculated using the Triangle Regional Model (TRM).

(Improve Existing 1, Improve Existing 2 freeway concept, both Improve Existing 3 concepts, and Hybrid 1) would reduce average travel speed in the PM peak period.

Average speeds for TDM, TSM and Mass Transit/Multi-Modal Alternative Concepts could not be modeled using the TRM. While mass transit improvements could potentially improve average daily speeds in the traffic study area, a substantially higher percentage of buses could potentially decrease speeds as they must stop to load and unload passengers. TDM improvements would require extremely high rates of carpooling, telecommuting, etc. to reduce average travel speeds on the roadway network. Census data show that about 11 percent of workers in the Raleigh area currently travel to work via carpool and about 3 percent work at home. There is currently no evidence to suggest that significantly larger percentages of area workers will begin to take advantage of TDM strategies. While TSM improvements can result in small increases in speeds on freeways/expressways and major arterials, according to the *Southeast Extension First Tier Screening Traffic Memorandum* these types of facilities only account for 20 percent of the regional highway network (nearly 6,000 miles) and 30 percent of traffic study area roadway facilities in the 2035 TRM (HNTB, 2011; **Appendix A**).

2.3.2 Travel Times

Travel times between representative origin and destination points in and surrounding the traffic study area were calculated using the TRM. Origins and destinations selected included major employment

centers for commuters traveling across the traffic study area and centers of more concentrated residential development in the traffic study area. A large group of origin and destination points was analyzed; the full analysis of travel times between each origin and destination point is included in the *Southeast Extension First Tier Screening Traffic Memorandum* (HNTB, 2011; **Appendix A**).

A subset of the origin and destination points was selected for closer evaluation of the MOE for project purpose because they were widely separated points requiring travel across the traffic study area, rather than simply along the periphery. The PM peak period was selected for evaluation for consistency with the average speed analysis described in the previous section. Two PM peak period origin points were then selected for evaluation: Research Triangle Park (RTP) and the Brier Creek area in northwest Raleigh. These two locations were selected because they represent major origin points for many commuters crossing the traffic study area during their afternoon commutes home. For each of the two origin points, four destination points were selected because they lie near four distinct areas near the traffic study area boundary: Fuquay-Varina at the southwestern boundary, Clayton at the southeastern boundary, Knightdale at the eastern boundary, and Garner at the northeastern boundary. Forecast travel times between RTP and each of the four destination points, for the No-Build and Build Alternative Concepts, are shown in **Table 2-2**. Forecast travel times between Brier Creek and each of the four destination points, for the No-Build and Build Alternative Concepts, are shown in **Table 2-3**.

Under the No-Build scenario, the travel time from RTP to the four destination points during the PM peak period is forecast to range from 42 minutes to Fuquay-Varina to 70 minutes to Clayton. All of the Build Alternative Concepts would reduce travel times to all four destination points. The New Location Highway Alternative Concept would result in the largest average percent decrease in travel times to the four destination points, decreasing travel times by an average of 13.7 percent. Travel times for the New Location Highway Alternative Concept would range from 37 minutes to Fuquay-Varina to 53 minutes to Clayton. The average decrease in travel times for the Hybrid 3 Alternative Concept (13.2 percent) would be similar to the New Location. Other Alternative Concepts in the third and fourth quartiles with respect to average percent decrease in travel times between these points were Improve Existing 3 (freeway concept) and Hybrid 3.

Under the No-Build scenario, the travel time from Brier Creek to the four destination points during the PM peak period is forecast to range from about 45 minutes to Fuquay-Varina to about 73 minutes to Clayton. All of the Build Alternative Concepts would reduce travel times to all four destination points. The Hybrid 1 and Hybrid 3 Alternative Concepts would result in the largest average percent decrease in travel times to the four destination points, decreasing travel times by an average of about 12 percent. The average decrease in travel times for the New Location Highway Alternative Concept (11.5 percent) would be similar to Hybrid 1 and Hybrid 2. These three Alternative Concepts, along with the Improve Existing 3 (freeway concept) Alternative Concept were in the third and fourth quartiles with respect to average percent decrease in travel times between these points.

Travel times could not be determined for TDM, TSM and Mass Transit/Multi-Modal Alternative Concepts using the TRM. Buses may actually increase travel times due to frequent stops. Similar to their ability to reduce average speeds, TDM improvements would require extremely expanded usage to reduce travel times. As stated in the previous section, there is currently no evidence to suggest that significantly larger percentages of area workers will begin to take advantage of TDM strategies. Since TSM improvements can only slightly increase speeds on a subset of roadways in the traffic study area network, these improvements would have limited effects on travel times.

Table 2-2: Average Travel Time from RTP to Listed Destinations (2035) – PM Peak Period

Alternative Concept	Fuquay-Varina		Garner		Clayton		Knightdale		Average Percent Change	Quartile Ranking of Average Percent Change
	Time (min)	Percent Change over No-Build	Time (min)	Percent Change over No-Build	Time (min)	Percent Change over No-Build	Time (min)	Percent Change over No-Build		
No-Build	42	n/a	47	n/a	70	n/a	61	n/a	n/a	n/a
Improve Existing 1	41	2.0	42	10.1	62	12.0	56	7.8	8.0	2
Improve Existing 2 - Arterial	40	3.8	45	2.8	68	3.8	58	3.6	3.5	1
Improve Existing 2 - Freeway	37	11.6	44	5.1	65	7.8	60	1.2	6.4	1
Improve Existing 3 - Arterial	38	8.5	43	9.1	62	11.9	58	3.7	8.3	2
Improve Existing 3 - Freeway	38	8.4	40	14.4	56	20.5	58	4.5	11.9	3
New Location Highway	37	10.7	41	12.9	53	24.5	56	6.8	13.7	4
Hybrid 1	37	10.4	41	12.0	55	21.5	56	7.0	12.7	3
Hybrid 2	37	11.3	44	6.0	65	7.1	60	1.2	6.4	1
Hybrid 3	38	9.7	40	15.0	54	23.2	58	4.9	13.2	4

Note: Data calculated using the Triangle Regional Model (TRM).

Table 2-3: Average Travel Time from Brier Creek to Listed Destinations (2035) – PM Peak Period

Alternative Concept	Fuquay-Varina		Garner		Clayton		Knightdale		Average Percent Change	Quartile Ranking of Average Percent Change
	Time (min)	Percent Change over No-Build	Time (min)	Percent Change over No-Build	Time (min)	Percent Change over No-Build	Time (min)	Percent Change over No-Build		
No-Build	45	n/a	49	n/a	73	n/a	54	n/a	n/a	n/a
Improve Existing 1	44	1.9	44	9.8	64	11.6	49	8.3	7.9	2
Improve Existing 2 - Arterial	43	3.6	48	2.7	70	3.6	52	3.8	3.4	1
Improve Existing 2 - Freeway	40	10.9	47	5.0	68	6.5	53	1.5	5.9	1
Improve Existing 3 - Arterial	41	8.0	45	8.8	65	10.4	51	4.5	7.9	2
Improve Existing 3 - Freeway	41	8.0	43	12.2	59	18.8	51	4.2	10.8	3
New Location Highway	40	10.0	43	11.8	56	22.6	53	1.7	11.5	3
Hybrid 1	40	9.9	43	11.5	58	19.8	50	7.4	12.1	4
Hybrid 2	40	10.5	46	5.7	66	9.0	53	1.0	6.5	1
Hybrid 3	41	9.1	43	12.7	57	21.3	51	4.9	12.0	4

Note: Data calculated using the Triangle Regional Model (TRM).

2.3.3 Average Daily VHT

Average daily VHT on the major roadway network in the traffic study area was calculated using the TRM. Average daily VHT could be calculated for the No-Build and Build Alternative Concepts; results are shown in **Table 2-4**.

Table 2-4: Average Daily VHT in Traffic Study Area (2035)

Alternative Concept	Average Daily VHT	Percent Change Over No-Build	Quartile Ranking of Percent Change Over No-Build
No-Build	322,833	n/a	n/a
Improve Existing 1	321,977	-0.27	1
Improve Existing 2 - Arterial	320,563	-0.70	1
Improve Existing 2 - Freeway	320,235	-0.80	1
Improve Existing 3 - Arterial	317,757	-1.57	2
Improve Existing 3 - Freeway	316,609	-1.93	3
New Location Highway	311,621	-3.47	4
Hybrid 1	315,093	-2.40	3
Hybrid 2	319,482	-1.04	2
Hybrid 3	313,038	-3.03	4

Note: Data calculated using the Triangle Regional Model (TRM).

Under the No-Build scenario, the average daily VHT on the major roadway network in the traffic study area would be 322,833. All of the Build Alternative Concepts would decrease average daily VHT. The New Location Highway Alternative Concept would result in the largest percent decrease in VHT, decreasing it by 3.47 percent relative to the No-Build to 311,621 miles per hour. Other Alternative Concepts in the third and fourth quartile with respect to percent change in VHT were Improve Existing 3 (freeway concept), Hybrid 1, and Hybrid 3.

Average daily VHT could not be determined for TDM, TSM and Mass Transit/Multi-Modal Alternative Concepts using the TRM. For the Mass Transit Alternative Concept, estimates of the requirements to improve the existing transit system in the Triangle Region needed to achieve VHT reduction equivalent to the Build Alternative Concepts were developed based on current transit usage data and Census data. This showed that a minimum of nearly 600 additional full buses, at a capacity of 50 passengers each, or nearly 200 additional full light rail trains, at a capacity of 150 passengers each, would be needed on a daily basis in the traffic study area to achieve a VHT reduction comparable to the Build Alternative Concepts (HNTB, 2011). Currently, only about 50 area buses (Triangle Transit, City of Raleigh, Town of Cary, etc.) enter the traffic study area. In addition, current

data show that buses in the traffic study area are rarely used at full capacity. There would need to be a twelve-fold increase in the number of buses serving the area to achieve a result comparable to the Build Alternative Concepts. There is currently no light rail service in the Triangle Region. Although transit can complement other transportation improvements, the travel demand in the traffic study area exceeds the ability for transit alone to provide service levels that would approach the VHT benefits provided by the Build Alternative Concepts. Details about this evaluation are in the *Southeast Extension First Tier Screening Traffic Memorandum* (HNTB, 2011; **Appendix A**).

The TRM is designed to address roadway and transit projects, while TDM improvements are primarily policy-based programs that cannot explicitly be captured as inputs to be calibrated by the TRM. A quantitative estimate described in the *Southeast Extension First Tier Screening Traffic Memorandum* (HNTB, 2011) showed that 15 percent of traffic study area workers would need to use TDM strategies such as carpooling or telecommuting on a daily basis to achieve a VHT reduction comparable to the Build Alternative Concepts. This would require rates of telecommuting and carpooling more than double current levels. There is currently no evidence to suggest that significantly larger percentages of area workers will begin to take advantage of TDM strategies.

TSM improvements can increase speeds on freeways/expressways and major arterials by 2 to 3 percent (HNTB, 2011). Because these improvements are localized and can be very specific to changing traffic conditions, they cannot be modeled at a “macro” level in a regional travel demand model. Roughly 53 percent of traffic study area VHT occurs on facilities that could accommodate TSM improvements. If all such TSM-eligible facilities in the traffic study area were improved, resulting in a 2.5 percent decrease in VHT on those facilities, the VHT reduction would still be less than that achieved by the Build Alternative Concepts.

2.3.4 Congested VMT

Congested VMT on the major roadway network in the traffic study area during the PM peak period was calculated using the TRM. Congested VMT could be calculated for the No-Build and Build Alternative Concepts; results are shown in **Table 2-5**.

Under the No-Build scenario, the congested VMT on the major roadway network in the traffic study area during the PM peak period would be 6,549,416. All of the Build Alternative Concepts would decrease congested VMT. The New Location Highway Alternative Concept would result in the largest percent decrease in congested VMT, decreasing it by 26.0 percent relative to the No-Build to 4,844,007. Other Alternative Concepts in the third and fourth quartile with respect to percent change in congested VMT were Improve Existing 3 (arterial concept), Hybrid 1, and Hybrid 3.

Congested VMT could not be determined for TDM, TSM and Mass Transit/Multi-Modal Alternative Concepts using the TRM.

Table 2-5: Congested VMT in Traffic Study Area (2035) – PM Peak Period

Alternative Concept	Congested VMT	Percent Change Over No-Build	Quartile Ranking of Percent Change Over No-Build
No-Build	6,549,416	n/a	n/a
Improve Existing 1	5,592,004	-14.6	1
Improve Existing 2 - Arterial	5,897,955	-9.9	1
Improve Existing 2 - Freeway	5,388,014	-17.7	2
Improve Existing 3 - Arterial	4,947,718	-24.5	3
Improve Existing 3 - Freeway	5,032,733	-23.2	2
New Location Highway	4,844,007	-26.0	4
Hybrid 1	4,960,427	-24.3	3
Hybrid 2	5,682,614	-13.2	1
Hybrid 3	4,750,561	-27.5	4

Note: Data calculated using the Triangle Regional Model (TRM).

2.3.5 Congested VHT

Congested VHT on the major roadway network in the traffic study area during the PM peak period was calculated using the TRM. Congested VHT could be calculated for the No-Build and Build Alternative Concepts; results are shown in **Table 2-6**.

Under the No-Build scenario, the congested VHT on the major roadway network in the traffic study area during the PM peak period would be 146,271. All of the Build Alternative Concepts would decrease congested VHT. The New Location Highway Alternative Concept would result in the largest percent decrease in congested VHT, decreasing it by 30 percent relative to the No-Build to 102,325. Other Alternative Concepts in the third and fourth quartile with respect to percent change in congested VHT were Improve Existing 3 (arterial concept), Hybrid 1, and Hybrid 3.

Congested VHT could not be determined for TDM, TSM and Mass Transit/Multi-Modal Alternative Concepts using the TRM. An additional 1,400 buses or 500 light rail trains operating at maximum capacity would be required to achieve reductions in congested VHT similar to the Build Alternative Concepts (HNTB, 2011).

The quantitative estimate described in the *Southeast Extension First Tier Screening Traffic Memorandum* (HNTB, 2011) showed that over 60,000 traffic study area workers (nearly 60 percent of maximum TDM-eligible employees) would need to use TDM strategies such as carpooling or telecommuting to achieve a congested VHT reduction comparable to the Build Alternative Concepts.

This would require rates of telecommuting and carpooling more than triple current levels. There is currently no evidence to suggest that significantly larger percentages of area workers will begin to take advantage of TDM strategies.

TSM improvements would also not feasibly be able to reduce congested VHT impacts on a similar scale as the Build Alternative Concepts. The differences in congested VHT reduction between TSM improvements and the Build Alternative Concepts were even greater than their differences in average daily VHT.

Table 2-6: Congested VHT in Traffic Study Area (2035) – PM Peak Period

Alternative Concept	Congested VMT	Percent Change Over No-Build	Quartile Ranking of Percent Change Over No-Build
No-Build	146,271	n/a	n/a
Improve Existing 1	128,035	-12.5	1
Improve Existing 2 - Arterial	129,384	-11.5	1
Improve Existing 2 - Freeway	122,479	-16.3	2
Improve Existing 3 - Arterial	112,219	-23.3	3
Improve Existing 3 - Freeway	113,805	-22.2	2
New Location Highway	102,325	-30.0	4
Hybrid 1	110,969	-24.1	3
Hybrid 2	123,170	-15.8	1
Hybrid 3	102,547	-29.9	4

Note: Data calculated using the Triangle Regional Model (TRM).

Table 2.7 summarizes the results of the quantitative analysis of project purpose MOEs. For each of the two primary project purpose elements (improve mobility and reduce congestion), the table highlights those Alternative Concepts that received no quartile rankings below 3. In other words, these Alternative Concepts performed above the median value for each metric and would therefore have the largest potential for improvement relative to that element of the project purpose. These Alternative Concepts were considered to meet that element of the project purpose. Using this analysis, two Alternative Concepts quantitatively met the purpose element of improving mobility: New Location Highway and Hybrid 3. Three Alternative Concepts met the purpose element of reducing congestion: New Location, Hybrid 1 and Hybrid 3.

Table 2-7: Summary of Quartile Rankings of MOEs for Build Alternative Concepts

Alternative Concept	Improve Mobility MOEs			Reduce Congestion MOEs		
	Average Speed - PM	Travel Time from RTP – PM	Travel Time from Brier Creek - PM	Average Daily VHT	Congested VMT – PM	Congested VHT - PM
Improve Existing 1	1	2	2	1	1	1
Improve Existing 2 - Arterial	3	1	1	1	1	1
Improve Existing 2 - Freeway	1	1	1	1	2	2
Improve Existing 3 - Arterial	1	2	2	2	3	3
Improve Existing 3 - Freeway	2	3	3	3	2	2
New Location Highway	4	4	3	4	4	4
Hybrid 1	2	3	4	3	3	3
Hybrid 2	3	1	1	2	1	1
Hybrid 3	4	4	4	4	4	4

Notes: Shaded rows identify Alternative Concepts that received no quartile rankings below 3 for any of the MOEs for the project purpose element (improve mobility; reduce congestion).

2.4 ALTERNATIVE CONCEPTS SCREENING

Each of the Alternative Concepts was evaluated for its potential to meet each element of the project purpose using the screening criteria described in **Section 2.2**. **Table 2-8** lists the results of the first tier screening. This table lists each Alternative Concept and whether it meets or does not meet the each element of project purpose. The following subsections provide a discussion of the results and include:

- A description of the alternative concept.
- Discussion of its ability to meet the element of project purpose using the screening criteria. If the alternative concept meets or could be designed to meet an element of the project purpose there is a ✓ next to the text. If it would not meet the element of the project purpose, there is a ✗ next to the text.
- A decision whether the alternative should be carried forward to the second tier screening of Preliminary Corridor Segments.

Table 2-8: First Tier Screening – Ability of Alternative Concepts to Meet Purpose of the Project

Alternative Concept	Primary Purpose		Desirable Outcome
	Improves Transportation Mobility	Reduces Congestion	Improves System Linkage
No-Build	✘	✘	✘
Transportation Demand Management	✘	✘	✘
Transportation System Management	✘	✘	✘
Mass Transit/Multi-Modal	✘	✘	✘
Improve Existing 1	✘	✘	✘
Improve Existing 2 - Arterial	✘	✘	✓
Improve Existing 2 - Freeway	✘	✘	✓
Improve Existing 3 - Arterial	✘	✘	✓
Improve Existing 3 - Freeway	✘	✘	✓
New Location Highway (Expressway)	✓	✓	✓
Hybrid 1	✘	✓	✓
Hybrid 2	✘	✘	✓
Hybrid 3	✓	✓	✓

Notes: ✘ indicates the alternative cannot be designed to meet this element of project purpose. ✓ indicates the alternative could be designed to meet this element of project purpose.

2.4.1 No-Build Alternative Concept

2.4.1.1 Ability to Meet Project Purpose

✘ Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.

The No-Build Alternative Concept would include only transportation improvements included in the LRTP, without the Complete 540 project. Conditions in 2035 are represented in the traffic forecast for the No-Build scenario in 2035, which forecasts traffic flow to be negatively affected by limited roadway capacity and increasing traffic volumes. The No-Build Alternative Concept would not include any additional improvements, beyond those in the 2035 No-Build scenario that would increase travel speed or reduce travel times over current forecast conditions, so it would not improve mobility at all for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✘ **Reduce forecast traffic congestion on the existing roadway network in the project study area.** The conditions projected by constructing only the planned improvements to the transportation network included in the LRTP, not including this project, are represented by the 2035 No-Build traffic forecast scenario. This scenario forecasts that a substantial portion of the roadway network will operate at unacceptable LOS in 2035. The No-Build Alternative Concept therefore would not reduce average daily VHT, congested VMT, or congested VHT over current forecast conditions, so it would not reduce forecast traffic congestion at all on the existing roadway network in the project study area.

✘ **Improve system linkage in the regional transportation network (desirable outcome).** The No-Build Alternative Concept will neither complete the 540 Outer Loop system nor provide faster access to the I-40/I-540 network for residents in the project study area, so it would not improve system linkage in the regional transportation network.

2.4.1.2 Decision Whether to Retain for Second Screening

Decision: Retain the No-Build Alternative Concept for comparison purposes.

The No-Build Alternative Concept would fail to meet the two primary elements of project purpose: improving mobility and reducing congestion. However, in accordance with NEPA (40 CFR 1502.14(d)) and FHWA guidance (FHWA Technical Advisory T 6640.8A, 1987), the No-Build Alternative will be given full consideration in this analysis to provide a baseline for comparison with other Detailed Study Alternatives. This Alternative Concept would also fail to meet the desirable outcome of improving system linkage.

2.4.2 Transportation Demand Management Alternative Concept

2.4.2.1 Ability to Meet Project Purpose

✘ **Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.** As described in **Section 2.3**, the TDM Alternative would require large increases in the number of traffic study area workers using TDM strategies, such as carpooling or telecommuting, in order to increase average speed and reduce travel times on the same scale as the Build Alternative Concepts. There is currently no evidence to suggest that significantly larger percentages of area workers will begin to take advantage of TDM strategies. Therefore, this Alternative Concept would not result in comparatively large reductions in travel times or comparatively large increases in average speed, so it would not improve mobility for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✘ **Reduce forecast traffic congestion on the existing roadway network in the project study area.** Similarly, to achieve reductions in average daily VHT, congested VMT, and congested VHT on the same scale as the Build Alternative Concepts, as many as 60 percent of TDM-eligible workers in the traffic study area would need to take advantage of TDM strategies to achieve a comparable reduction in congested VHT to the Build Alternative Concepts. As there is no evidence to suggest that this is reasonable, this Alternative Concept would not result in a comparatively large reduction in forecast traffic congestion on the existing roadway network in the project study area, so it does not meet this element of project purpose.

✘ **Improve system linkage in the regional transportation network (desirable outcome).** The TDM Alternative Concept will neither complete the 540 Outer Loop system nor provide faster access

to the I-40/I-540 network for residents in the project study area, so it would not improve system linkage in the regional transportation network.

2.4.2.2 Decision Whether to Retain for Second Screening

Decision: Eliminate the TDM Alternative Concept from further consideration.

The TDM Alternative Concept would fail to meet the two primary elements of project purpose: improving mobility and reducing congestion. Because it would not meet the purpose of this project, it is not a reasonable alternative and is therefore eliminated from further analysis. This Alternative Concept would also fail to meet the desirable outcome of improving system linkage.

2.4.3 Transportation System Management Alternative Concept

2.4.3.1 Ability to Meet Project Purpose

✘ **Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.**

As described in **Section 2.3**, while TSM improvements can increase speeds on freeways/expressways and major arterials by 2 to 3 percent, these types of facilities only account for a small portion of traffic study area roadway facilities in the 2035 TRM. For this reason, the TSM Alternative Concept would not increase average speeds or reduce travel times on the same scale as the Build Alternative Concepts. Therefore, this Alternative Concept would not result in comparatively large reductions in travel times or comparatively large increases in average speed, so it would not improve mobility for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✘ **Reduce forecast traffic congestion on the existing roadway network in the project study area.**

Implementing TSM improvements on all facilities that could accommodate TSM improvements in the traffic study area for the project would require improvements to approximately 300 miles of roadway. It would be extremely difficult to implement improvements on that scale. Even if all TSM-eligible facilities in the traffic study area were improved, the reduction in VHT, congested VMT, and congested VHT would still be less than that achieved by the Build Alternative Concepts. This Alternative Concept would not be reasonable to implement and would not result in a comparatively large reduction in forecast traffic congestion on the existing roadway network in the project study area, so it does not meet this element of project purpose.

✘ **Improve system linkage in the regional transportation network (desirable outcome).**

The TSM Alternative Concept will neither complete the 540 Outer Loop system nor provide faster access to the I-40/I-540 network for residents in the project study area, so it would not improve system linkage in the regional transportation network.

2.4.3.2 Decision Whether to Retain for Second Screening

Decision: Eliminate the TSM Alternative Concept from further consideration.

The TSM Alternative Concept would fail to meet the two primary elements of project purpose: improving mobility and reducing congestion. Because it would not meet the purpose of this project, it is not a reasonable alternative and is therefore eliminated from further analysis. This Alternative Concept would also fail to meet the desirable outcome of improving system linkage.

2.4.4 Mass Transit/Multi-Modal Alternative Concept

2.4.4.1 Ability to Meet Project Purpose

✘ **Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.**

As described in **Section 2.3**, buses, which are by far the predominant type of transit available in the project study area, may actually reduce average speeds and increase travel times as buses make frequent stops to pick up and drop off passengers. In addition, existing and forecast ridership levels would not be expected to remove sufficient numbers of vehicles from the roadway network to result in notable reduction in network speeds. Therefore, this Alternative Concept would not result in comparatively large reductions in travel times or comparatively large increases in average speed, so it would not improve mobility for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✘ **Reduce forecast traffic congestion on the existing roadway network in the project study area.** Vast expansions in transit services and ridership in the traffic study area would be required to achieve reductions in average daily VHT, congested VMT, and congested VHT on the same scale as the Build Alternative Concepts. This Alternative Concept would not result in a comparatively large reduction in forecast traffic congestion on the existing roadway network in the project study area, so it does not meet this element of project purpose.

✘ **Improve system linkage in the regional transportation network (desirable outcome).** The Mass Transit/Multi-Modal Alternative Concept will neither complete the 540 Outer Loop system nor provide faster access to the I-40/I-540 network for residents in the project study area, so it would not improve system linkage in the regional transportation network.

2.4.4.2 Decision Whether to Retain for Second Screening

Decision: Eliminate the Mass Transit/Multi-Modal Alternative Concept from further consideration.

The Mass Transit/Multi-Modal Alternative Concept would fail to meet the two primary elements of project purpose: improving mobility and reducing congestion. Because it would not meet the purpose of this project, it is not a reasonable alternative and is therefore eliminated from further analysis. This Alternative Concept would also fail to meet the desirable outcome of improving system linkage.

2.4.5 Improve Existing Roadways 1 Alternative Concept

Under this Alternative Concept, the following highways would be widened to twelve lanes: I-40 from NC 147, west of Raleigh, to south of NC 42 I-440 from I-40 to US 64/US 264 Bypass, and US 64/US 264 Bypass from I-440 to US 64 east of Knightdale. This Alternative Concept is shown in **Figure 2-1**.

2.4.5.1 Ability to Meet Project Purpose

✘ **Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.**

The Improve Existing Roadways 1 Alternative Concept would widen several area highways to twelve lanes. As shown in **Section 2.3**, it would not result in a comparatively large reduction in travel times relative to the other Build Alternative Concepts and it would result in a reduction in average travel

speeds. Therefore, it would not improve mobility for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✘ **Reduce forecast traffic congestion on the existing roadway network in the project study area.** While the Improve Existing Roadways 1 Alternative Concept would result in small reductions in average daily VHT, congested VMT, and congested VHT over current forecast conditions, these reductions would be comparatively smaller than the reductions produced by other Build Alternative Concepts. This Alternative Concept would therefore not result in a comparatively large reduction in forecast traffic congestion on the existing roadway network in the project study area, so it does not meet this element of project purpose.

✘ **Improve system linkage in the regional transportation network (desirable outcome).** The Improve Existing Roadways 1 Alternative Concept would not complete the 540 Outer Loop system. In addition, because it would not improve any transportation facilities providing direct access to points within the project study area, it would not provide faster access to the I-40/I-540 network for residents in the project study area. It would therefore not improve system linkage in the regional transportation network.

2.4.5.2 Decision Whether to Retain for Second Screening

Decision: Eliminate the Improve Existing Roadways 1 Alternative Concept from further consideration.

The Improve Existing Roadways 1 Alternative Concept would fail to meet the two primary elements of project purpose: improving mobility and reducing congestion. Because it would not meet the purpose of this project, it is not a reasonable alternative and is therefore eliminated from further analysis. This Alternative Concept would also fail to meet the desirable outcome of improving system linkage.

2.4.6 Improve Existing Roadways 2 Alternative Concept

Between NC 55 and I-40, this Alternative Concept would upgrade the following roadways to six lane facilities, either as controlled-access expressways with service roads or as six-lane arterials:

- NC 55 from NC 540 to NC 42
- NC 42 from NC 55 to I-40

Between I-40 and US 64/US 264 Bypass, this Alternative Concept would widen the following roadways to twelve lanes:

- I-40 from south of NC 42 to I-440
- I-440 from I-40 to US 1 north of Raleigh
- US 64/US 264 Bypass from I-440 to I-540

This Alternative Concept is shown in **Figure 2-2**.

2.4.6.1 Ability to Meet Project Purpose

✘ **Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.** The Improve Existing Roadways 2 Alternative Concept would improve existing facilities within the project study area and would also widen some highways to twelve lanes. Two variations on this

Alternative Concept were evaluated—one that would improve existing facilities by widening them to six-lane arterial facilities and another that would widen and improve them to controlled-access freeways/expressways. As shown in **Section 2.3**, neither variation on this Alternative Concept would result in a comparatively large reduction in travel times relative to the other Build Alternative Concepts. The freeway variation would result in a reduction in average travel speeds, although the arterial variation would increase average travel speeds. Neither of these variations would achieve both of these MOEs; therefore, this Alternative Concept would not meet the improve mobility project purpose for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✘ **Reduce forecast traffic congestion on the existing roadway network in the project study area.** While the Improve Existing Roadways 2 Alternative Concept (both variations) would result in small reductions in average daily VHT, congested VMT, and congested VHT over current forecast conditions, these reductions would be comparatively smaller than the reductions produced by other Build Alternative Concepts. This Alternative Concept would therefore not result in a comparatively large reduction in forecast traffic congestion on the existing roadway network in the project study area, so it does not meet this element of project purpose.

✓ **Improve system linkage in the regional transportation network (desirable outcome).** The Improve Existing Roadways 2 Alternative Concept would not complete the 540 Outer Loop system. However, it would improve existing transportation facilities providing direct access to points within the project study area, so it would provide faster access to the I-40/I-540 network for residents in the project study area. It would therefore improve system linkage in the regional transportation network. This Alternative Concept would meet the desirable outcome of improving system linkage.

2.4.6.2 Decision Whether to Retain for Second Screening

Decision: Eliminate the Improve Existing Roadways 2 Alternative Concept from further consideration.

The Improve Existing Roadways 2 Alternative Concept would fail to meet the two primary elements of project purpose: improving mobility and reducing congestion. Because it would not meet the purpose of this project, it is not a reasonable alternative and is therefore eliminated from further analysis. This Alternative Concept would meet the desirable outcome of improving system linkage.

2.4.7 Improve Existing Roadways 3 Alternative Concept

Between NC 55 and I-40, this Alternative Concept would upgrade the following roadways to six lane facilities, either as controlled-access highways with service roads or as six-lane arterials:

- Jessie Drive from NC 540 to Ten Ten Road
- Ten Ten Road from Jessie Drive to I-40 (including a segment on new location between NC 50 and I-40)

Between I-40 and US 64/US 264 Bypass, this Alternative Concept would widen the following roadways to twelve lanes:

- I-40 from south of NC 42 to I-440
- I-440 from I-40 to US 1 north of Raleigh
US 64/US 264 Bypass from I-440 to I-540

This Alternative Concept is shown in **Figure 2-3**.

2.4.7.1 Ability to Meet Project Purpose

✘ **Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.**

The Improve Existing Roadways 3 Alternative Concept would improve existing facilities within the project study area and would also widen some highways to twelve lanes. Two variations on this Alternative Concept were evaluated—one that would improve existing facilities by widening them to six-lane arterial facilities and another that would widen and improve them to controlled-access freeways/expressways. As shown in **Section 2.3**, neither variation on this Alternative Concept would result in a comparatively large reduction in travel times relative to the other Build Alternative Concepts. The freeway variation would result in a reduction in average travel speeds, although the arterial variation would increase average travel speeds. Neither of these variations would achieve both of these MOEs; therefore, this Alternative Concept would not meet the improve mobility project purpose for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✘ **Reduce forecast traffic congestion on the existing roadway network in the project study area.**

While the Improve Existing Roadways 3 Alternative Concept (both variations) would result in small reductions in average daily VHT, congested VMT, and congested VHT over current forecast conditions, these reductions would be comparatively smaller than the reductions produced by other Build Alternative Concepts. This Alternative Concept would therefore not result in a comparatively large reduction in forecast traffic congestion on the existing roadway network in the project study area, so it does not meet this element of project purpose.

✓ **Improve system linkage in the regional transportation network (desirable outcome).** The Improve Existing Roadways 3 Alternative Concept would not complete the 540 Outer Loop system. However, it would improve existing transportation facilities providing direct access to points within the project study area, so it would provide faster access to the I-40/I-540 network for residents in the project study area. It would therefore improve system linkage in the regional transportation network. This Alternative Concept would meet the desirable outcome of improving system linkage.

2.4.7.2 Decision Whether to Retain for Second Screening

Decision: Eliminate the Improve Existing Roadways 3 Alternative Concept from further consideration.

The Improve Existing Roadways 3 Alternative Concept would fail to meet the two primary elements of project purpose: improving mobility and reducing congestion. Because it would not meet the purpose of this project, it is not a reasonable alternative and is therefore eliminated from further analysis. This Alternative Concept would meet the desirable outcome of improving system linkage.

2.4.8 New Location Highway Alternative Concept

2.4.8.1 Ability to Meet Project Purpose

✓ **Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.**

As shown in **Section 2.3**, the New Location Alternative Concept would result in the comparatively largest increase in average travel speed. For peak period travel between RTP and several destination points, it would result in the comparatively largest reduction of average travel time. For travel

between Brier Creek and these destination points, it would result in a comparatively large reduction in average travel time. Therefore, this Alternative Concept would improve mobility for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✓ **Reduce forecast traffic congestion on the existing roadway network in the project study area.** The New Location Alternative Concept would result in the comparatively largest reductions in average daily VHT, congested VMT, and congested VHT over current forecast conditions. This Alternative Concept would therefore result in the comparatively largest reduction in forecast traffic congestion on the existing roadway network in the project study area, so it does meet this element of project purpose.

✓ **Improve system linkage in the regional transportation network (desirable outcome).** The New Location Alternative Concept would complete the 540 Outer Loop system and provide faster access to the I-40/I-540 network for residents in the project study area. It would therefore improve system linkage in the regional transportation network.

2.4.8.2 Decision Whether to Retain for Second Screening

Decision: Retain the New Location Highway Alternative Concept for the second screening.

The New Location Alternative Concept would meet all elements of the project purpose and the desirable outcomes for this project and is therefore advanced to the second screening level. This Alternative Concept would also meet the desirable outcome of improving system linkage. A number of Preliminary Corridors on new location were developed and quantitatively screened to identify those that should be carried forward to further quantitative screening; these are discussed in **Section 3.5**.

2.4.9 Hybrid 1 Alternative Concept

Between NC 55 and I-40, this Alternative Concept would involve construction of a controlled-access highway on new location. Between I-40 and US 64/US 264 Bypass, this Alternative Concept would widen the following roadways to ten lanes:

- I-40 from south of NC 42 to I-440
- I-440 from I-40 to US 1 north of Raleigh
- US 64/US 264 Bypass from I-440 to I-540

This Alternative Concept is shown in **Figure 2-4**.

2.4.9.1 Ability to Meet Project Purpose

✗ **Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.**

The Hybrid 1 Alternative Concept would construct a new location roadway between NC 55 and I-40 and would improve existing facilities between I-40 and US 64/US 264 Bypass. As shown in **Section 2.3**, this Alternative Concept would result in a comparatively large reduction in travel times relative to the other Build Alternative Concepts. However, this Alternative Concept would actually result in a reduction in average travel speeds. This Alternative Concept would fail to meet both of these MOEs; therefore, it would not improve mobility for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✓ **Reduce forecast traffic congestion on the existing roadway network in the project study area.** The Hybrid 1 Alternative Concept would result in comparatively large reductions in average daily VHT, congested VMT, and congested VHT over current forecast conditions relative to other Build Alternative Concepts. This Alternative Concept would therefore result in a comparatively large reduction in forecast traffic congestion on the existing roadway network in the project study area, so it does meet this element of project purpose.

✓ **Improve system linkage in the regional transportation network (desirable outcome).** The Hybrid 1 Alternative Concept would complete one of the remaining portions of the 540 Outer Loop system, between NC 55 and I-40. It would therefore improve system linkage in the regional transportation network. This Alternative Concept would meet the desirable outcome of improving system linkage.

2.4.9.2 Decision Whether to Retain for Second Screening

Decision: Eliminate the Hybrid 1 Alternative Concept from further consideration.

The Hybrid 1 Alternative Concept would meet project purpose element of reducing traffic congestion, but would not meet the project purpose element of improving mobility. Because it fails to meet both of these primary elements of the project purpose it is not a reasonable alternative and is therefore eliminated from further analysis. This Alternative Concept would meet the desirable outcome of improving system linkage.

2.4.10 Hybrid 2 Alternative Concept

Between NC 55 and I-40, this Alternative Concept would upgrade the following roadways to six-lane, controlled-access facilities:

- NC 55 from NC 540 to NC 42
- NC 42 from NC 55 to I-40

Between I-40 and US 64/US 264 Bypass, this Alternative Concept would involve construction of a controlled-access highway on new location.

This Alternative Concept is shown in **Figure 2-5**.

2.4.10.1 Ability to Meet Project Purpose

✗ **Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.** The Hybrid 2 Alternative Concept would improve existing facilities between NC 55 and I-40 and would construct a new location roadway between I-40 and US 64/US 264 Bypass. As shown in **Section 2.3**, this Alternative Concept would result in a comparatively large reduction in travel times relative to the other Build Alternative Concepts. However, this Alternative Concept would actually result in a reduction in average travel speeds. This Alternative Concept would fail to meet both of these MOEs; therefore, it would not improve mobility for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✗ **Reduce forecast traffic congestion on the existing roadway network in the project study area.** While the Hybrid 2 Alternative Concept would result in small reductions in average daily VHT, congested VMT, and congested VHT over current forecast conditions, these reductions would be

comparatively smaller than the reductions produced by other Build Alternative Concepts. This Alternative Concept would therefore not result in a comparatively large reduction in forecast traffic congestion on the existing roadway network in the project study area, so it does not meet this element of project purpose.

✓ **Improve system linkage in the regional transportation network (desirable outcome).** The Hybrid 2 Alternative Concept would complete one of the remaining portions of the 540 Outer Loop system, between NC 55 and I-40. It would therefore improve system linkage in the regional transportation network. This Alternative Concept would meet the desirable outcome of improving system linkage.

2.4.10.2 Decision Whether to Retain for Second Screening

Decision: Eliminate the Hybrid 2 Alternative Concept from further consideration.

The Hybrid 2 Alternative Concept would fail to meet the two primary elements of project purpose: improving mobility and reducing congestion. Because it would not meet the purpose of this project, it is not a reasonable alternative and is therefore eliminated from further analysis. This Alternative Concept would meet the desirable outcome of improving system linkage.

2.4.11 Hybrid 3 Alternative Concept

Between NC 55 and I-40, this Alternative Concept would upgrade the following roadways to six-lane, controlled-access facilities:

- Jessie Drive from NC 540 to Ten Ten Road
- Ten Ten Road from Jessie Drive to I-40 (including a segment on new location between NC 50 and I-40)

Between I-40 and US 64/US 264 Bypass, this Alternative Concept would involve construction of a controlled-access highway on new location. This Alternative Concept is shown in **Figure 2-6**.

2.4.11.1 Ability to Meet Project Purpose

✗ **Improve transportation mobility for trips within, or traveling through, the Complete 540 – Triangle Expressway Southeast Extension project study area during the peak travel period.**

The Hybrid 3 Alternative Concept would improve existing facilities between NC 55 and I-40 and would construct a new location roadway between I-40 and US 64/US 264 Bypass. As shown in **Section 2.3**, the Hybrid 3 Alternative Concept would result in a comparatively large increase in average travel speed relative to the other Build Alternative Concepts. It would also result in comparatively large decreases in travel times between evaluated origin and destination points. This Alternative Concept would therefore improve mobility for trips within, or traveling through, the Complete 540 project study area during the peak travel period.

✓ **Reduce forecast traffic congestion on the existing roadway network in the project study area.** The Hybrid 3 Alternative Concept would result in comparatively large reductions in average daily VHT, congested VMT, and congested VHT over current forecast conditions relative to other Build Alternative Concepts. This Alternative Concept would therefore result in a comparatively large reduction in forecast traffic congestion on the existing roadway network in the project study area, so it does meet this element of project purpose.

✓ **Improve system linkage in the regional transportation network (desirable outcome).** The Hybrid 3 Alternative Concept would complete one of the remaining portions of the 540 Outer Loop system, between I-40 and US 64/US 264 Bypass. It would therefore improve system linkage in the regional transportation network. This Alternative Concept would meet the desirable outcome of improving system linkage.

2.4.11.2 Decision Whether to Retain for Second Screening

Decision: Retain the Hybrid 3 Alternative Concept for the second screening.

The Hybrid 3 Alternative Concept would meet all elements of the project purpose and the desirable outcomes for this project and is therefore advanced to the second screening level. This Alternative Concept would also meet the desirable outcome of improving system linkage.

2.5 ALTERNATIVE CONCEPTS TO BE CARRIED FORWARD TO SECOND SCREENING

At the August 10, 2010, resource and regulatory agency meeting, NCDOT summarized the methodology used for screening Alternative Concepts and provided an overview of the results of this screening (**Section 6.1.3**). Representatives of resource and regulatory agencies were able to review this information and provide input to ensure that the range of reasonable Alternative Concepts under consideration covered the full spectrum of potential Alternative Concepts. The public was also afforded opportunities to provide input on Alternative Concepts at and following the Public Informational Meetings on September 21, 22, and 23, 2010, and December 2, 2010. More information about these opportunities and the resulting input is provided in **Section 5.2.2** and **Section 6**.

Table 2-9 lists the Alternative Concepts carried forward to a second screening, as well as those eliminated from further consideration based on the evaluations described in the previous sections.

Table 2-9: Alternative Concepts to be Carried Forward to Second Screening

Alternative Concepts Retained for Second Screening	Alternative Concepts Eliminated from Further Consideration
No-Build	Transportation Demand Management
New Location Roadway	Transportation System Management
New Location/Improve Existing Roadway Hybrid 3	Mass Transit/Multi-Modal
	Improve Existing Roadways 1
	Improve Existing Roadways 2
	Improve Existing Roadways 3
	Hybrid 1
	Hybrid 2

3 DEVELOPMENT OF PRELIMINARY CORRIDOR SEGMENTS

Preliminary Corridor Segments, 1,000 feet wide, were developed based on a range of factors including land suitability mapping, basic design criteria, and engineering feasibility. Another factor was the ability to combine segments to form complete end-to-end alternatives. For the Alternative Concepts carried forward from the first screening level, it is assumed that a controlled-access toll facility would be constructed within the 1,000-foot wide corridors represented by the corridor segments.

3.1 PROJECT STUDY AREA

As shown in **Figure 1-2** and described in **Section 1.2**, the project study area is located south and southeast of the City of Raleigh between the towns of Holly Springs to the west and Knightdale to the east. The project study area was developed in conjunction with resource and regulatory agencies. It was devised to encompass the area within which reasonable and feasible alternatives for meeting the elements of the project purpose could be developed. The existing terminus of the Western Wake portion of the Triangle Expressway (NC 540) at NC 55 Bypass in Apex and the terminus of I-540 at US 64/US 264 Bypass in Knightdale generally coincide with the respective western and eastern boundaries of the project study area. In particular, these two boundaries were necessary for development of alternatives that would improve transportation mobility for trips within or through the project area, particularly between rapidly growing communities south and east of Raleigh and major employment and activity centers along the 540 Outer Loop and along roadways connecting to the 540 Outer Loop. The northern boundary, which roughly follows the southern outskirts of Raleigh and Cary, and the southern boundary, which generally follows NC 42, were particularly influenced by the project purpose of reducing congestion on major roadways in the Raleigh area, such as I-40, I-440, US 64, and US 1, over forecast conditions for 2035. North of this northern boundary and south of this southern boundary, alternatives would be unlikely to draw as much traffic off of these existing facilities. While most of the project study area is within Wake County, a small portion of western Johnston County is also included. Portions of eight incorporated municipalities—Apex, Holly Springs, Cary, Fuquay-Varina, Garner, Raleigh, Knightdale and Clayton—and numerous unincorporated communities are located within the project study area.

The 540 Outer Loop is part of the Raleigh and Triangle Region core transportation network. Other elements of this network include I-440, I-40, NC 147, US 70, US 1, US 64, US 401, and US 264. The project study area encompasses a relatively small portion of the larger core transportation network for the region. However, from a transportation perspective, this element of the system has region-wide implications for traffic service and system operations. The Capital Area MPO and Durham-Chapel Hill-Carrboro MPO have jointly included this project as an element of their *2035 Long Range Transportation Plan* (LRTP). Through the MPO long range transportation planning process, consideration has been given to alternative transportation approaches to meet the overall social, economic, environmental, and mobility needs in the region. While this study builds upon the regional planning efforts and utilizes a regional perspective for traffic forecasting, the focus of this study is on the sub-regional area known as the project study area.

3.2 PROJECT STUDY AREA TRAFFIC CONDITIONS

Varying from a four- to eight-lane facility, I-40 is the primary controlled access highway corridor for regional connectivity between the project study area and major employment and activity centers in the Triangle Region (Raleigh, Durham, Cary, and Chapel Hill), Raleigh-Durham International Airport (RDU), and the Research Triangle Park (RTP), the region's largest employment center. Traveling west from Knightdale, motorists can also use I-440 or I-540 through northern Wake County to reach area employment centers and to travel through the region. For residents in rapidly growing areas of southern and southeastern Wake County and western Johnston County, other transportation options are available but they include primary and secondary roads with lower posted speed limits, no control of access, and traffic signals. These routes include Ten-Ten Road (SR 1010) and NC 42, the primary east-west routes in southern Wake County, and US 401, NC 50, and US 70, which serve north-south travel. There are limited transit options in the area, primarily consisting of a small number of fixed bus routes traveling on congested roadways along the northern edge of the project study area.

Regional through traffic between areas south and east of Raleigh and areas west of Raleigh, including interregional truck traffic, is generally limited to traveling on I-40/I-440 south of Raleigh. Since these routes serve high volumes of local traffic, interregional traffic limited to these same routes adds additional traffic volumes and also results in inefficient travel across the region. Statewide, I-40 is the backbone of North Carolina's interstate system, providing the connection between southeastern North Carolina, including Wilmington and other coastal towns, and western North Carolina, including Greensboro, Winston-Salem, and Asheville. Therefore, in addition to being a key transportation corridor for local freight and commuter traffic, I-40 through the Triangle Region is also a key corridor for long distance travelers. I-40 also serves a substantial amount of traffic travelling to and from eastern North Carolina on US 64 and US 264.

As described in **Section 1.2.1**, poor levels of service (LOS), defined as LOS E or F, currently characterize several major roadways in and near the project study area. With increases in traffic volumes projected in the future, a substantial portion of the roadway network in and near the project study area would deteriorate to LOS E or F by 2035 (**Figure 1-4**). For this study, a desirable level of service is defined as LOS D or better – conversely, an unacceptable level of service is defined as LOS E or F. LOS characteristics are generally established on a case-by-case basis to meet project-specific goals. For Complete 540, providing LOS D for a freeway/expressway segment in the worst-case peak hour in the design year provides acceptable overall traffic operations by maintaining high-speed mobility and providing excess traffic capacity along the facility. Based on the Highway Capacity Manual (HCM 2000), LOS D for a freeway/expressway segment indicates a slight decline in free-flow operations and maneuverability as traffic density increases. LOS E, at its highest density value, describes freeway/expressway operation at capacity with volatile operations because virtually no usable gaps exist in the traffic stream. At LOS E, maneuverability is extremely limited, the level of physical and psychological comfort afforded the driver is poor and therefore, it is not a desirable design year LOS for the project.

3.3 PROTECTED CORRIDOR

During the early to middle 1990s, NCDOT determined that implementation of the State's Transportation Corridor Official Map Act (Map Act) (GS §136-44.50) was appropriate for Phase I of the Complete 540 project, from NC 55 Bypass in Apex to I-40 near the Wake/Johnston county line. The Map Act permits the preservation of a highway corridor when specific conditions are met. Alternative corridors were developed and analyzed, and public hearings were held to present the corridor proposed for protection. The North Carolina Board of Transportation formally adopted a

preserved corridor for the segment between NC 55 and US 401 (STIP project R-2721) in August 1996, and for the segment between US 401 and I-40 (STIP project R-2828) in March 1997. This corridor was selected based on a preliminary environmental analysis to identify a route that would minimize overall impacts. No corridor was protected for Phase II of the project, from I-40 to US 64/US 264 Bypass (STIP project R-2829), although a potential corridor for Phase II was identified in the mid-1990s based on known major environmental features. The project phases and the protected corridor are shown in **Figure 3-1**.

The protected corridor was based on the roadway design criteria at the time of corridor protection. Changes in these design criteria over the intervening years may result in impacts beyond the limits of the protected corridor. For the current environmental assessment, a study corridor has been established that is substantially larger than the protected corridor to allow flexibility in design to minimize impacts.

To date, NCDOT has purchased 44 of the parcels within the protected corridor, totaling 376 acres. This is approximately 26 percent of the total 1,465 acres within the protected corridor. Examination of aerial photography and field reviews has confirmed that much of the land in the protected corridor remains undeveloped. Although some right-of-way has already been acquired within the protected corridor, this previous acquisition cannot influence the NEPA process and its outcomes for the project, in accordance with 23 CFR 710.501(b). NCDOT will equally evaluate the protected corridor and a range of other possible routes as part of this study.

3.4 ESTABLISHING BROAD AREAS FOR PRELIMINARY CORRIDOR LOCATIONS

This section describes the general constraints considered in developing the Preliminary Corridor Segments.

3.4.1 Route Continuity and Logical Project Termini

The proposed project is intended to improve transportation mobility by providing additional high-speed, safe and efficient regional transportation infrastructure. To create high-speed regional transportation infrastructure, the proposed project would provide a controlled-access facility. The eastern project terminus is at I-540 at US 64/US 264 Bypass in Knightdale and the western project terminus is at the Western Wake portion of the Triangle Expressway (NC 540) at NC 55 Bypass in Apex. These termini are necessary for development of alternatives that would enhance connectivity between rapidly growing communities south and east of Raleigh and major employment centers along the 540 Outer Loop and along roadways connecting to the Outer Loop. Connecting these two points would also improve system linkage, an other desirable outcome of the project. This would provide continuity for the 540 Outer Loop system.

As described in **Section 1.2**, this project would likely be constructed in two phases and each of these phases would have independent utility. When constructed, Phase I of the project would connect the Western Wake portion of the Triangle Expressway to I-40 south of Raleigh, providing an end-to-end connection between NC 540 and I-40. Traffic would be able to completely bypass I-40/I-440 from the Wake/Johnston County line to southwest of Durham. Phase II of the project would connect I-40 south of Raleigh to US 64/US 264 Bypass in Knightdale. Similarly, this would provide a direct connection between I-40 near the county line to US 64 east of the city.

In the Phase I area, there are parallel routes to a new location facility that connect the western project terminus to I-40. The most notable parallel route, however, is I-40/I-440, and this system does not

connect to the western project terminus. As NCDOT considered it important to evaluate the option of widening existing segments of I-40 and I-440 instead of constructing a new facility, the vicinity of the existing interchange between I-40 and NC 540 (west of RDU Airport) was used as the western terminus for this option. Existing connections between I-40 and the eastern project terminus in the Phase II area are limited to secondary roads that form an indirect route between these points. In the Phase II area, the only significant parallel route is formed by I-40, I-440, and US 64/US 264 Bypass. For the purposes of considering improvements to existing roadways, the eastern project study area boundary was used as the eastern project terminus in the Phase II area.

3.4.2 L RTP Recommendations

The Capital Area MPO and Durham-Chapel Hill-Carrboro MPO joint LRTP includes completion of the 540 Outer Loop (I-540 and NC 540) as a six-lane, new location toll facility within the project study area as a 2025 horizon year project. The LRTP shows interchanges proposed at the following eleven locations:

- Holly Springs Road (SR 1152)
- Bells Lake Road
- US 401 (Fayetteville Road)
- Old Stage Road (SR 1006)
- NC 50 (Benson Road)
- I-40
- White Oak Road (SR 1209)
- US 70
- Old Baucom Road
- Auburn Knightdale Road (SR 2525)
- Poole Road (SR 1007)

3.4.3 Natural and Human Environment Features

Land suitability mapping shows the natural and human environment features in the project study area. These features include wetlands, streams, floodplains, known endangered species locations, water supply watersheds, hazardous waste/materials locations, historic resources, places of worship, schools, businesses, community facilities, and neighborhoods.

The land suitability mapping for the project study area was developed using data layers obtained from a variety of Geographic Information System (GIS) databases (NCDOT, NC Department of Environment and Natural Resources, Wake County, Johnston County, US Geological Survey, and US Fish and Wildlife Service), state resource agency files, aerial photography, and field visits.

Examples of major natural features in the project study area include numerous wetlands, streams and lakes. Major water bodies in the project study area include the Neuse River, Swift Creek, Middle Creek, White Oak Creek, Lake Benson, Lake Wheeler, Sunset Lake, and Bass Lake. Several streams in the project study area are on North Carolina's list of impaired waters under Section 303(d) of the Clean Water Act. These include Swift Creek between from Lake Wheeler south to the area near NC 42 and portions of Middle Creek west of US 401 in the Phase I project area and the Neuse River, Crabtree Creek, Walnut Creek, and Little Creek in the Phase II project area. In 2008, the Wake County Board of Commissioners affirmed the County's intent to protect several priority stream corridors, which are targeted for land preservation efforts. In the project study area, Middle Creek and the section of Swift Creek between Lake Wheeler and Lake Benson are priority stream corridors.

Several municipalities are located within the project study area. Most of incorporated Holly Springs, including its downtown and many of its largest residential neighborhoods, including Sunset Ridge and Sunset Oaks, and commercial developments, is within the project study area. The southern fringes of incorporated Cary and Apex are just east of Holly Springs, and this area includes numerous large planned residential subdivisions along with schools and parks.

The southwestern corner of the project study area includes the northern and eastern portions of incorporated Fuquay-Varina, which feature a mix of large residential subdivisions, rural residential uses and agricultural operations.

East of US 401, the project study area becomes increasingly rural. South of Lake Benson, there are low-density residential subdivisions and agricultural development. North of Lake Benson, the central area of Garner includes urban residential development and commercial development. The US 70 corridor between Garner and Clayton features regional shopping centers along with numerous industrial developments. Industrial and regional commercial development also characterizes the areas surrounding I-40 east of Garner.

East of I-40 and US 70, the project study area is highly rural, with widespread agricultural development and related rural land uses, although suburban development is starting to spread into the area. The northeastern edge of the project study area includes more commercial and industrial development.

The portion of northern Johnston County in the project study area is also characterized by a mix of agricultural, rural residential, and suburban residential development. The area surrounding the NC 42 interchange on I-40 includes highway-oriented commercial development.

3.5 PRELIMINARY CORRIDOR SEGMENTS

3.5.1 New Location Highway Segments

Preliminary Corridor Segments that would be constructed on new location were identified across the project study area. The widespread residential and commercial development that has occurred since establishment of the protected corridor, along with the numerous natural environmental constraints in the project study area, significantly limits the number of feasible locations for corridor segments.

As shown in **Figure 3-2**, 40 new location Preliminary Corridor Segments were identified. For descriptive and analytical purposes, it is helpful to describe the Preliminary Corridor Segments for several distinct subareas within the project study area.

3.5.1.1 Protected Corridor

Segments 1 through 6 and Segment 33 are part of the protected corridor for Phase I of the project. **Segments 7 through 9** are part of the potential corridor identified in the mid-1990s for Phase II and have been since shown on project maps as a representative corridor for Phase II.

3.5.1.2 Western Project Terminus

Segments in this area would connect to the Western Wake portion of the Triangle Expressway, forming the western terminus of the Complete 540 project. Besides Segment 1 of the protected corridor, the two other options in this area are:

- **Segment 10**, following a roughly north-to-south alignment from the terminus of the Western Wake portion of the Triangle Expressway at NC 55 Bypass. It would extend through central Holly Springs and cross Middle Creek, ending between Holly Springs and Fuquay-Varina.
- **Segment 39**, following a roughly north-to-south alignment from the Western Wake portion of the Triangle Expressway, crossing NC 55 Bypass south of Holly Springs and ending between Holly Springs and Fuquay-Varina.

3.5.1.3 West of US 401

This area extends between eastern Holly Springs and US 401. The options in this area are:

- **Segment 17**, beginning just east of the potential interchange along the protected corridor for Phase I at Kildaire Farm Road and Holly Springs Road. It would extend towards the southeast, east of Pierce Olive Road in the vicinity of Optimist Farm Road. It creates one of three distinct options (Segments 10 and 39 are the other two options) for an alignment alternative south of the protected corridor.
- **Segment 18**, connecting Segment 17 to the US 401 area, extending eastward just south of Optimist Farm Road and just north of Middle Creek. It provides an alternative to the protected corridor in creating an alignment for Phase I of the project north of Middle Creek.
- **Segment 20**, also connecting Segment 17 to the US 401 area, but crossing Middle Creek and connecting to alignments in the southern part of the project study area. In combination with Segment 17, Segment 20 creates one of the three distinct options for an alignment alternative south of the protected corridor.
- **Segment 11** and **Segment 16** would each connect Segment 39 and Segment 11 to the US 401 area, extending between James Slaughter Road and US 401. **Segment 12** serves as a short connector between either Segment 20 or Segment 11 and adjacent segments to the east. **Segment 13** serves as a short connector between Segment 12 and adjacent segments to the east. **Segment 22** and **Segment 25** serve as short connectors between Segment 16 and alignments to the east.

3.5.1.4 US 401 Vicinity

This area spans the region just west and east of US 401. The options in this area are:

- **Segment 26**, linking the protected corridor and an alignment option extending north of Lake Benson, in the Garner area. It would cross the Swift Creek Watershed Critical Area between Lake Wheeler and Lake Benson and extend through the Water Supply Watershed.
- **Segment 19** and **Segment 21**, connecting US 401 to Old Stage Road, just south of the protected corridor for Phase I.

- **Segment 24**, connecting US 401 just north of Fuquay-Varina to Old Stage Road just south of the protected corridor, following a roughly northeastern route. Alignments using this segment would begin with a southern swing from the Western Wake portion of the Triangle Expressway and then turn northeastward near Fuquay-Varina, turning back toward the southeast near NC 50. **Segment 23** serves as a short connector between Segment 12 to the west and Segment 24.
- **Segment 12**, connecting US 401 to the Sauls Road area in the southernmost part of the project study area. It is the only route that would continue an alignment alternative across the southern part of the project study area.

3.5.1.5 NC 50 Vicinity

This area extends between Old Stage Road and NC 50. The options in this area are:

- **Segment 15**, connecting alignments through the southernmost part of the project study area to the protected corridor for Phase I at its potential interchange on NC 50. It is the only connection of the southern alignments to the eastern part of the protected corridor.
- **Segment 28** and **Segment 30**, connecting alignments through the southern part of the project study area to a potential I-40 interchange just south of US 70 in southeastern Garner.
- **Segment 40**, connecting Segment 14 to Segment 31 through the southernmost part of the project study area.

3.5.1.6 I-40 Vicinity

This area crosses I-40 and includes three potential interchange locations on I-40. One is the potential interchange that is part of the protected corridor (Segment 33)—this would be a combined interchange at I-40 and the Clayton Bypass. The other two potential interchanges on I-40 are part of Segment 29 and Segment 31.

- **Segment 29** connects Segment 30 to Segment 27 and includes a potential I-40 interchange just south of US 70 in southeastern Garner. This is the northernmost of the potential I-40 interchanges.
- **Segment 31** crosses I-40 near the Wake/Johnston County line and includes two separate interchanges at I-40 and the Clayton Bypass. This is the southernmost of the potential I-40 interchanges. **Segment 32** and **Segment 35** serve as short connectors between Segment 31 and adjacent segments to the east.
- **Segment 34** is a short connector between Segment 6, part of the protected corridor for Phase I, and **Segment 36**, which provides an alternative to the potential corridor identified in the mid-1990s for Phase II (see below).

3.5.1.7 East of I-40

This area is the Phase II portion of the project study area. The options in this area are:

- **Segment 27**, which connects Segment 26, providing the only alignment option north of Ten-Ten Road and Lake Benson, to the potential corridor identified in the mid-1990s for Phase II.

- **Segment 36** and **Segment 38**, which together connect alignments crossing I-40 near the Wake/Johnston County line to Segment 9 near the Auburn-Knightdale Road area in Knightdale. Together, these segments provide an alignment alternative to the potential corridor identified in the mid-1990s for Phase II (Segments 7 and 8), forming an alignment option farther to the east.
- **Segment 37**, which would provide a third alignment option in the eastern part of the project study area. It is the farthest east of the alignment options in this area.

3.5.2 Hybrid 3 Alternative Concept Segment

Preliminary Corridor Segments under consideration also include the option of improving existing roadways for the remaining portion of the improvements. As described in **Section 2.1.5.3**, the Hybrid 3 Alternative Concept, which would include both new location roadway and improvements to existing roadways, was advanced to the second tier screening. This option would include widening and upgrading the following roadways to six-lane, controlled-access facilities in the Phase I portion of the project study area, which together create a Phase I segment for this Alternative Concept:

- Jessie Drive from NC 540 to Ten Ten Road
- Ten Ten Road from Jessie Drive to I-40 (including a segment on new location between NC 50 and I-40)

Between I-40 and US 64/US 264 Bypass, this variation would involve construction of a controlled-access highway on new location.

3.5.3 Tolling

The Capital Area MPO and Durham-Chapel Hill-Carrboro MPO joint LRTP indicates that the funding for the Complete 540 project will include tolling. It is assumed that toll collection for this project would be all-electronic (no booths for on-site payment), and new location corridors were assumed to be able to accommodate a toll facility within the standard right-of-way for a controlled-access facility (about 300 feet).

There were additional considerations for incorporating tolling into corridor segments along existing roadways. State law prohibits tolling of existing roadways and all toll roads must have a free alternate route (GS §136-89.197). To accommodate this, constructing the project along an existing roadway corridor would require frontage roads to provide the free alternative route, which would increase the width of right-of-way needed for the project by approximately 160 feet. See **Section 3.5.2** for a description of existing roadways under consideration as Preliminary Corridor Segments.

4 SECOND TIER SCREENING OF PRELIMINARY CORRIDOR SEGMENTS

The goal of this second screening is to evaluate Preliminary Corridor Segments using a combination of qualitative and broad quantitative factors. Qualitative factors included engineering feasibility and likelihood of meeting the project purpose. Broad quantitative factors included physical characteristics and potential impacts on natural and human environmental features. Preliminary Corridor Segments retained through this second screening were advanced into the third tier screening of preliminary alternatives for Phase I and Phase II of the project, described in **Section 5**.

4.1 SECOND TIER SCREENING METHODS

The initial 40 Preliminary Corridor Segments described in **Section 3.5** and shown in **Figure 3.2** were evaluated based on their physical characteristics, and potential impacts on the natural and human environment. For each segment, impacts were estimated, using GIS data, for a conceptual right-of-way width. A 300-foot wide conceptual right-of-way was set roughly along the centerline of each segment, with alignment shifts in certain locations to minimize impacts to the human and natural environment. At potential interchange areas, the conceptual right-of-way widens to 500 feet on either side of the centerline, extending 100 feet upstream and downstream of the interchange. The following factors were used to evaluate the Preliminary Corridor Segments:

- Length in miles
- Number of interchanges
- Number of ponds impacted
- Streams impacted (number of stream crossings and linear feet of stream impacts)
- Wetlands impacted (number of National Wetland Inventory (NWI) wetlands impacted and total acreage of impacts)
- Number of structures requiring relocation (residences, businesses, and other large structures), based on NCDOT March 2010 aerial photography; County GIS data and tax records were referenced to identify structures built after March 2010 and to more carefully distinguish residences and businesses from outbuildings
- National Register of Historic Places (NRHP)-listed properties impacted
- Acreage within Swift Creek Watershed Critical Area

NWI wetlands were used for second and third tier screening because uniform data are available for the entire project study area. NWI wetlands were used consistently for all Preliminary Corridor Segments and Preliminary Study Corridors during the second and third tier screening. More detailed wetlands data based on field delineations of jurisdictional features will be used to evaluate Detailed Study Alternatives (DSAs) in the Draft EIS.

Analysis of existing archaeological data for the project study area will be used to conduct a preliminary evaluation of potential archaeological resources in the vicinity of the DSAs after the DSAs have been identified. This evaluation will be documented in the Draft EIS.

Table 4-1 displays a summary of these evaluation factors for each of the 40 Preliminary Corridor Segments. Using the comparative evaluation data along with a review of the Preliminary Corridor Segments map, a process of elimination was used, as documented below, to determine whether to

Table 4-1: Preliminary Corridor Segments – Summary of Potential Impacts

Segment	Length (MI)	Number of Interchanges	Ponds Impacted	Streams	Streams (LF)	NWI Wetlands	NWI Wetlands (AC)	Structures Relocated	NRHP Listed Properties	Critical Watershed Area (AC)	Retained?
1	0.98	1	0	1	504	1	3.50	2	0	0	Yes
2	1.98	1	2	1	314	1	0.05	28	0	0	Yes
3	3.55	1	3	9	3,742	2	5.20	61	0	0	Yes
4	5.32	2	7	11	3,688	2	9.00	30	0	0	Yes
5	2.35	0	2	5	3,842	2	12.03	7	0	0	Yes
6	3.78	2	2	8	6,915	1	25.42	7	0	0	Yes
7^	4.61	3	8	14	10,737	4	26.30	35	0	0	Yes
8^	2.15	1	3	11	3,850	4	6.50	13	0	0	Yes
9^	2.20	2	2	10	5,250	0	0.00	17	0	0	Yes
10	4.32	1	4	11	4,744	7	6.33	105	0	0	Yes
11	3.36	1	6	11	4,368	1	0.29	57	0	0	Yes
12	0.88	1	1	2	1,619	1	0.18	20	0	0	Yes
13	0.61	0	0	1	313	0	0.00	1	0	0	Yes
14	5.29	1	2	11	4,674	3	3.33	54	0	0	Yes
15	1.95	0	0	6	1,497	2	1.99	6	0	0	Yes
16	4.59	2	6	12	3,806	3	3.61	56	0	0	No
17	1.80	0	2	1	487	1	0.33	6	0	0	Yes
18	2.97	1	2	11	2,681	2	5.88	64	0	0	No
19	4.34	2	2	13	6,669	4	16.51	48	0	0	No
20	3.55	1	2	8	3,616	1	2.74	28	0	0	Yes
21	4.60	2	1	14	5,174	4	10.76	40	0	0	No
22	1.18	0	0	8	1,474	1	1.12	0	0	0	No
23	1.10	0	0	8	1,472	1	1.13	1	0	0	No
24	4.65	1	3	12	3,926	3	18.36	34	0	0	No
25	0.53	0	0	1	323	0	0.00	0	0	0	No
26	11.13	4	8	30	16,617	7	31.41	253	0	10.60	Yes
27	1.77	1	7	3	1,421	0	0.00	14	0	0	Yes
28	5.95	1	1	5	1,713	3	5.77	66	0	0	No
29	2.15	1	2	15	12,053	3	13.68	4	0	0	Yes
30	6.56	1	5	12	3,193	3	13.79	59	0	0	Yes
31	5.37	3	4	24	11,459	4	43.80	23	0	0	Yes
32	0.41	0	0	0	0	0	0.00	0	0	0	Yes
33	0.47	0	0	7	4,768	7	24.44	0	0	0	Yes
34	0.43	0	0	7	4,789	7	24.44	0	0	0	Yes
35	0.35	0	0	0	0	0	0.00	0	0	0	Yes
36	1.40	1	0	2	754	1	5.00	30	0	0	Yes
37	10.94	5	8	26	14,340	11	21.01	54	0	0	No
38	5.52	3	7	14	7,164	7	9.68	32	0	0	Yes
39	7.21	3	4	19	8,386	3	2.41	20	0	0	No
40	6.73	1	5	27	11,071	5	30.86	50	0	0	No
Hybrid 3 – Phase I	17.17	5	30	34	22,870	14	64.11	621	2	0	Yes

Sources: NC OneMap, National Wetlands Inventory, NCDOT aerial photography, Wake County and Johnston County tax parcel mapping

Notes: Potential impacts were calculated within 150 feet of either side of the centerline for each segment. ^Impacts are for original alignments for these segments. Their alignments were subsequently shifted to reduce impacts (**Section 4.2.1**). MI – miles. LF – linear feet. AC – acres.

retain each segment for further consideration or to dismiss the segment. **Table 4-1** summarizes the decisions made for each segment. Two general approaches were used to reach these decisions:

- **Individual Segment Assessment** – When a preliminary corridor segment provided a route with no other similar options and when additional information and evaluation would help demonstrate whether the segment was viable and reasonable, the segment was carried forward for further screening. Preliminary Corridor Segments with no similar options but with potentially substantial impacts were each qualitatively evaluated to determine if the potential impacts would make the segment impractical or unreasonable to implement.
- **Relative Segment Comparison** – Preliminary Corridor Segments in areas with several options providing a similar route were evaluated with a relative comparison of impacts. Preliminary Corridor Segments with greater impacts to natural or human environmental features compared to other segments providing a similar route were eliminated from further study.

4.2 SEGMENT ASSESSMENT AND COMPARISON

4.2.1 Segments 1 through 9 and Segment 33

As described in **Section 3.5.1.1**, these segments comprise the protected corridor for Phase I of the project and the potential corridor identified in the mid-1990s for Phase II. Review of the potential impacts within these segments showed that they remain viable options, although Segments 7 through 9 impact a large area of 100-year floodplain and numerous streams near the eastern project terminus. The alignments of Segments 7 through 9 were shifted slightly to avoid these resources to the greatest extent possible. These shifts resulted in a 38 percent reduction in the linear feet of streams impacted and a 74 percent reduction in the wetlands impacted by these three segments, although they would result in additional relocations. **Table 4-2** shows the impact minimization achieved through these alignment shifts. As shown in **Figure 4-1**, Segments 7 through 9 incorporate these shifts.

Table 4-2: Reduction in Impacts – Shifted Alignments for Segments 7, 8 and 9

Segment	Streams (LF)		NWI Wetlands (AC)		Structures Relocated	
	Original Alignment	Shifted Alignment	Original Alignment	Shifted Alignment	Original Alignment	Shifted Alignment
7	10,737	5,169	26.30	4.93	35	36
8	3,850	2,091	6.50	3.52	13	12
9	5,250	5,074	0.00	0.00	17	34
TOTAL	19,837	12,334	32.80	8.45	65	82
Reduction		38%		74%		-26%

Sources: NC OneMap, National Wetlands Inventory

Notes: Potential impacts were calculated within 150 feet of either side of the centerline for each segment. LF – linear feet. AC – acres.

4.2.2 Western Project Terminus

- **Segment 10 – Retained for further evaluation**

The advantage of Segment 10 over Segment 39 is that it would avoid the potentially complicated and complex reconfiguration of the southern terminus of the Western Wake portion of the Triangle Expressway at the NC 55 Bypass. Its disadvantages relative to Segment 39 are that it would bisect an established area of residential subdivisions, schools, and other community features in central Holly Springs, requiring relocations of an estimated 105 structures; it would require a crossing of Middle Creek; and it would have greater wetland impacts than Segment 39. Because its advantages are significant even with respect to its disadvantages, Segment 10 was retained for further evaluation.

- **Segment 39 – Eliminated from further consideration**

This segment would connect to the Western Wake portion of the Triangle Expressway west of its southern terminus, requiring construction of a new interchange and abandonment of the remaining segment of the Triangle Expressway to its current terminus at NC 55 Bypass.

While Segment 39 does provide an alternate location for the project in this part of the project study area, its drawbacks from financial and construction standpoints are considerable. Construction of a new interchange on the Western Wake portion of the Triangle Expressway would be very costly. In addition, the bonds that were sold to finance construction of the existing Triangle Expressway were based on the assumption that the project would be an operating, tolled facility for its entire planned length. Abandonment of a portion of this roadway would pose an uncertain risk with respect to its financing.

Segment 39 would also directly impact a Wake County landfill along the west side of the NC 55 Bypass, reducing capacity of the landfill and incurring additional high costs to purchase right-of-way within the landfill. The primary advantages of Segment 39 are that it would avoid crossing Middle Creek and would avoid crossing through the more central, developed area of Holly Springs. Despite these notable advantages, its disadvantages would render Segment 39 infeasible; therefore, it was eliminated from further consideration.

Much of the public and local government feedback from the Public Informational Workshops suggested that an alignment option west of the NC 55 Bypass would be preferable because it would minimize impacts to Holly Springs while still providing a potentially useful connection between the Western Wake portion of the Triangle Expressway and growing areas around Fuquay-Varina. Numerous options for locating a corridor segment west of the NC 55 Bypass were examined and all faced the same problems described above. While such an alignment would minimize community impacts in Holly Springs, its drawbacks make an alignment west of the NC 55 Bypass infeasible.

4.2.3 West of US 401

- **Segment 17 – Retained for further evaluation**

Segment 17 is unique in that it provides the only link between the western project terminus and segments south of Middle Creek east of Holly Springs. By connecting to Segment 18, it also provides an alignment option to Segment 3 north of Middle Creek. Because there are no similar options to this segment and because further evaluation would be useful in assessing its impacts, Segment 17 was retained for further evaluation.

- **Segment 18 – Eliminated from further consideration**

The combination of Segment 17 and Segment 18 would result in greater impacts in several categories than Segment 3, which provide a similar route. Segment 18 is closer to Middle Creek and would therefore impact more wetlands and streams. The combined Segments 17

and 18 would require 70 relocations, compared to 61 for Segment 3. Because this route offers no advantage to Segment 3 and is in the same general location, Segment 18 was eliminated from further consideration.

- **Segment 20 – Retained for further evaluation.**

Since Segment 20, in combination with Segment 17, provides one of the three distinct options for an alignment alternative in the southern part of the project study area, it was retained for further evaluation.

- **Segment 11 and Segment 12 – Retained for further evaluation**

- **Segment 16, Segment 22, and Segment 25 – Eliminated from further consideration**

Segment 16 is slightly longer than Segment 11. Although Segment 11 would have slightly greater stream impacts than Segment 16 (4,368 linear feet versus 3,806 linear feet), Segment 16 would result in 3.61 acres of wetland impact versus 0.29 acres of wetlands impacted with Segment 11. Segment 16 would also intersect with US 401 at a less favorable angle than Segment 11, resulting in a larger, more complex, and more costly interchange at US 401. Due to this key difference, Segment 16 was eliminated while Segment 11 was retained for further evaluation. Because Segment 12 only serves as a short connector between either Segment 20 or Segment 11 and adjacent segments to the east and because Segments 20 and 11 are being retained for further evaluation, it is also being retained for further evaluation. Segments 22 and 25 were also eliminated from further consideration because they only serve as short connectors between Segment 16 and alignments to the east and because Segment 16 was eliminated.

4.2.4 US 401 Vicinity

- **Segment 26 – Retained for further evaluation**

Segment 26 has multiple distinct disadvantages. It is the only segment that would cross the Swift Creek Watershed Critical Area between Lake Wheeler and Lake Benson and extend through the Water Supply Watershed. Wake County policies limit development activities within the watershed area. It would also require relocating an estimated 253 structures. This segment would also impact the preservation priority section of Swift Creek, between Lake Wheeler and Lake Benson, as identified by Wake County.

Despite its significant disadvantages, Segment 26 offers two potentially significant advantages. The Dwarf Wedgemussel (*Alasmidonta heterodon*) is a federally endangered freshwater mussel. Favorable habitat for the Dwarf Wedgemussel is found throughout Swift Creek through the project study area; however, the dam on the southeast side of Lake Benson acts as a barrier between the upstream and downstream portions of Swift Creek, precluding genetic exchange between upstream and downstream populations of any aquatic species. Swift Creek downstream of Lake Benson, in the vicinity of I-40, is part of a larger contiguous area of mussel habitat. In addition, Dwarf Wedgemussel individuals have been found in this contiguous area. For these reasons, this part of the Swift Creek watershed is particularly important for the long-term survival of this species in the region. However, the species is increasingly threatened by increased sedimentation from development in the watershed.

By crossing Swift Creek upstream of the Lake Benson dam, Segment 26 avoids impacting the most important areas of Dwarf Wedgemussel habitat in Swift Creek as it flows through the project study area. While the species could be present in Swift Creek upstream of Lake Benson, the presence of individuals in this area would not influence long-term survival of the species downstream of the dam. In this way, Segment 26 provides a potential avoidance alternative to impacting key Dwarf Wedgemussel habitat.

Segment 26 is also the only alignment option north of Ten-Ten Road and would provide a shorter route, closer to more densely developed areas of Raleigh and Garner. This segment may have the potential to limit project-induced urban development as it is the farthest away from rural, developable areas along the southern edge of the project study area. As a shorter alignment option through a less rural area, Segment 26 also reduces wetland and stream impacts relative to other options.

Segment 26 was retained for further evaluation because of its potential to avoid key mussel habitat. The U.S. Environmental Protection Agency (USEPA) also suggested retaining an alignment in this area, indicating that keeping the project closer to existing developed areas and farther from less developed areas might limit the project's indirect and cumulative effects on regional development.

- **Segment 19 and Segment 21 – Eliminated from further consideration**

Impacts associated with each of these segments are all greater than for Segment 4. Segment 19 and Segment 21 were eliminated from further consideration because neither of these segments offers any distinct advantage to Segment 4 and because they are in the same general location as Segment 4.

- **Segment 23 and Segment 24 – Eliminated from further consideration**

Segment 24 would create a somewhat circuitous route that may be of limited benefit to travelers relative to others under consideration. In addition, this segment would result in much greater wetland impacts (18.36 acres versus 3.33 acres) than Segment 14 to the south. In addition to Segment 24 resulting in somewhat greater stream impacts than Segment 14, Segment 24 was eliminated from further consideration because Segment 14 provides a similar but more direct alignment option with reduced wetland impacts. Segment 23 was eliminated from further consideration because it would only serve as a short connector between Segment 12 and Segment 24.

- **Segment 14 – Retained for further evaluation**

Segment 14 is the only route that would continue an alignment alternative across the southern part of the project study area. Because of this unique characteristic and because it would result in reduced wetland and relocation impacts relative to Segment 24, further evaluation would be useful in assessing the impacts of this segment and it was retained for further evaluation.

4.2.5 NC 50 Vicinity

- **Segment 15 – Retained for further evaluation**

Segment 15 provides the only connection of the southern alignments in the Phase I area to the eastern part of the protected corridor (Segment 6). Because of this unique characteristic and because further evaluation would be useful in assessing its impacts, Segment 15 was retained for further evaluation.

- **Segment 28 – Eliminated from further consideration**

- **Segment 30 – Retained for further evaluation**

Segment 30 is slightly longer than Segment 28 and would result in more than twice as large an impact to wetlands (13.79 acres versus 5.77 acres) and would also result in greater impacts to streams. However, Segment 28 would require relocation of an estimated 66 structures, more than the 59 structures estimated to be impacted by Segment 30. There are also significant geometric disadvantages to the NC 50 interchange on Segment 28. Among its disadvantages is that it would require relocation of a portion of Ten-Ten Road west of NC 50 and that it would

create sight distance concerns within the interchange due to an unfavorable skew at NC 50. It would also have less than the preferred 1,000 feet or more of controlled access from the ramp tie-ins at the interchange, creating interchange operational concerns. For this reason Segment 28 was eliminated from further consideration while Segment 30 was retained for further evaluation.

- **Segment 40 – Eliminated from further consideration**

Through its connection to Segment 31, Segment 40 allows the alignments along the southern boundary of the project study area to cross I-40 and the Clayton Bypass at two separate interchanges, instead of at the complex combined interchange currently proposed as part of the protected corridor for Phase I. Relative to the combination of Segment 15 and Segment 6, Segment 40 would impact more wetlands (30.86 acres versus 27.41 acres) and would require 37 more relocations. Relative to Segment 30, Segment 40 would also have greater wetland and stream impacts. Segment 40 was eliminated from further consideration because it would provide no advantage relative to these two alternative alignments,

4.2.6 I-40 Vicinity

- **Segment 29 – Retained for further evaluation**

Segment 29 crosses I-40 at a potential I-40 interchange just south of US 70 in southeastern Garner, providing an option to the complex interchange farther south at I-40 and the Clayton Bypass. Because Segment 29 has no similar options and because further evaluation would be useful in assessing its impacts, it was retained for further evaluation.

- **Segment 31 and Segment 32 – Retained for further evaluation**

Instead of the complex combined interchange at I-40 and the Clayton Bypass, currently proposed as part of the protected corridor for Phase I, Segment 31 would have two separate interchanges. This alternative option for the I-40 interchange area would reduce the overall interchange footprint and could reduce both right-of-way costs and construction costs. Because of this unique characteristic and because further evaluation would be useful in assessing its impacts, Segment 31 was retained for further evaluation. Because Segment 32 only serves as a short connector between Segment 31 and adjacent segments to the east, it was also retained for further evaluation.

4.2.7 East of I-40

- **Segment 27 – Retained for further evaluation**

Segment 27 continues the alignment north of Ten-Ten Road and Lake Benson formed by Segment 26. Because there are no similar options to this segment and because an alignment in this part of the project study area may have important relative advantages, Segment 27 was retained for further evaluation.

- **Segment 34, Segment 35, Segment 36 and Segment 38 – Eliminated from further consideration – reintroduced following Public Informational Meetings (September 2010)**

Together, Segments 36 and 38 provide a key alignment alternative to the potential corridor identified in the mid-1990s for Phase II (Segments 7 and 8), forming an alignment option farther to the east. These two segments would be similar in length to the combined Segments 7 and 8, although their impacts to wetlands would be higher (14.68 acres versus 8.45 acres) and they would require relocation of more structures (62 versus 32). These segments were presented to the resource and regulatory agencies at a meeting in August 2010 and at that meeting, were eliminated from further consideration due to their greater relative impacts on

wetlands and greater relocations. Segment 34 serves only to connect Segment 6 in the Phase I area to Segment 36 in the Phase II area, and so was also eliminated from further consideration. Segment 35 serves only to connect the alternative option for the I-40 interchange area formed by Segments 31 and 32 to Segment 36 in the Phase II area, and it too was eliminated from further consideration. These segments were not included on the Preliminary Corridor maps displayed at the Public Informational Meetings in September 2010.

Through subsequent coordination with City of Raleigh and Wake County staff, NCDOT learned that a jointly City- and County-owned property known as Randleigh Farm presented a significant constraint in the Phase II project area. The City and County are developing plans to create a multi-use, sustainable community on Randleigh Farm, a 417-acre tract on Battle Bridge Road south of the Neuse River. Uses will include parkland, two public schools, private development, and an environmental education center. At the southeast corner of the Randleigh Farm tract is a privately owned parcel featuring a nineteenth century mill site that is potentially eligible for the NRHP. To minimize impacts to the Randleigh Farm property and the potential historic site, these segments were later revived for further consideration (**Section 5.2.2**).

- **Segment 37 – Eliminated from further consideration – reintroduced following Public Informational Meetings (September 2010)**

At more than eleven miles long, Segment 37 is several miles longer than the combined Segments 38 and 9, which provide the other key alignment option to the potential corridor identified in the mid-1990s for Phase II. Due to its length, Segment 37 would be much more expensive to construct. It would impact approximately twice the wetlands of the combined Segments 38 and 9 (21.01 acres versus 9.68 acres) and would have somewhat greater stream impacts and slightly more relocations. As initially conceived, Segment 37 would have tied into the existing interchange at I-540 and US 64/US 264 Bypass in a different configuration than the other alignment options at the eastern project terminus and would have required more extensive reconstruction of the interchange. Because it had several significant disadvantages without providing any relative advantage, Segment 37 was eliminated from consideration. This segment was not included on the Preliminary Corridor maps displayed at the Public Informational Meetings in September 2010.

In investigating options for avoiding the Randleigh Farm property (see above), NCDOT revived Segment 37, shifting its alignment to cross the Neuse River at a more favorable location and to tie into the existing interchange at the eastern project terminus in the same configuration as the other segments in this area (**Section 5.2.2**). The revived Segment 37 would be the only true option for avoiding impacts to Randleigh Farm while also avoiding Clemmons State Educational Forest and the City of Raleigh's Neuse River Wastewater Treatment Plant facilities located southeast and east of Randleigh Farm, respectively.

4.2.8 Hybrid 3 Alternative Concept Segment

As described in **Section 2.1.5.3**, the Hybrid 3 Alternative Concept, which would include both new location roadway and improvements to existing roadways, was advanced to the second tier screening. This option would include widening and upgrading the following roadways to six-lane, controlled-access facilities in the Phase I portion of the project study area, which together create a Phase I segment for this Alternative Concept:

- Jessie Drive from NC 540 to Ten Ten Road
- Ten Ten Road from Jessie Drive to I-40 (including a segment on new location between NC 50 and I-40)

Between I-40 and US 64/US 264 Bypass, this variation would involve construction of a controlled-access highway on new location.

This Hybrid 3 Phase I segment would be over seventeen miles long, but would span the entire width of the Phase I portion of the project study area, mostly along existing facilities. Because of this unique characteristic, it was retained for further evaluation. It is important to note, however, that this segment would require relocation of 621 homes and businesses, several times more than for any of the new location segments.

4.3 SECOND TIER SCREENING CONCLUSIONS

The results of the second tier screening of Preliminary Corridor Segments are summarized below:

- Preliminary Corridor Segments recommended for elimination: Segments 16, 18, 19, 21, 22, 23, 24, 25, 28, 34, 35, 36, 37, 38, 39, and 40. Segments 34, 35, 36, 37 and 38 were reintroduced for further study following the Public Informational Meetings in September 2010 (**Section 5.2.2**).
- Preliminary Corridor Segments recommended for further study: Segments 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 20, 26, 27, 29, 30, 31, 32, and 33. These segments are shown in **Figure 4.2**.

Following elimination of the sixteen corridor segments indicated above, the remaining segments were advanced to the third tier screening of Preliminary Corridor Alternatives, which included a more detailed evaluation of the potential impacts expected by various combinations of corridor segments. Groups of corridor segments were combined as longer corridor alternatives, each designated with a particular color--seven such Preliminary Corridor Alternatives were formed. The corridor segments included in each of these corridor alternatives are listed in **Table 4-3**. The locations of these Preliminary Corridor Alternatives are shown in **Figure 4.3**.

Table 4-3: Segment Composition of Preliminary Corridor Alternatives

Preliminary Corridor Alternative	Segments					
	1	2	3	4	5	6
Orange	1	2	3	4	5	6
Blue	10	11	12	13	14	15
Purple	17	20				
Red	26	27				
Pink	30	29				
Yellow	31	32				
Green	33	7	8	9		

Notes: As presented at the Public Informational Meetings in September 2010; Segments 34, 35, 36, 37, and 38 were later reintroduced for further consideration and became the tan corridor and grey corridor (**Section 5.2.2**).

For evaluation in the third tier screening, Preliminary Corridor Alternatives were considered individually, by project phase, and as end-to-end preliminary alternatives with both qualitative and quantitative criteria. The Preliminary Corridor Alternatives can be combined to form nine end-to-end Preliminary Study Alternatives for the entire project, as shown in **Table 4-4**. For reference, each of the nine alternatives is designated with a Roman numeral. The Hybrid 3 Alternative Concept was also developed as an end-to-end Preliminary Study Alternative.

Table 4-4: Segment Composition of Preliminary Study Alternatives

ID	Preliminary Study Alternative	Segments													
		1	2	3	26	27	8	9	-	-	-	-	-	-	
I	Orange to Red to Green	1	2	3	26	27	8	9	-	-	-	-	-	-	
II	Orange to Green	1	2	3	4	5	6	33	7	8	9	-	-	-	
III	Orange to Yellow to Green	1	2	3	4	5	31	32	7	8	9	-	-	-	
IV	Orange to Blue to Orange to Green	1	10	11	12	13	14	15	6	33	7	8	9	-	
V	Orange to Blue to Yellow to Green	1	10	11	12	13	14	15	31	32	7	8	9	-	
VI	Orange to Blue to Pink to Red to Green	1	10	11	12	13	14	30	29	27	8	9	-	-	
VII	Orange to Purple to Blue to Orange to Green	1	2	17	20	12	13	14	15	6	33	7	8	9	
VIII	Orange to Purple to Blue to Yellow to Green	1	2	17	20	12	13	14	15	31	32	7	8	9	
IX	Orange to Purple to Blue to Pink to Red to Green	1	2	17	20	12	13	14	30	29	27	8	9	-	

Notes: As presented at the Public Informational Meetings in September 2010; Segments 34, 35, 36, 37, and 38 were later reintroduced for further consideration and became the tan corridor and grey corridor (**Section 5.2.2**).

5 THIRD TIER SCREENING OF PRELIMINARY CORRIDOR ALTERNATIVES

This section describes how the Preliminary Corridor Alternatives for Phase I and Phase II of the Complete 540 project were evaluated to identify those that should be carried forward as part of the Detailed Study Alternatives (DSAs) in the Draft Environmental Impact Statement (EIS). Because this process involved substantial public involvement, agency and intergovernmental coordination, and special State legislation, the process described below required several iterative steps to reach the recommendations for DSAs. This section is organized in roughly chronological order in an attempt to convey the iterative nature of the process.

5.1 THIRD TIER SCREENING METHODS

5.1.1 Process

Connect Segments to Form Endpoint-to-Endpoint Corridors. The Preliminary Corridor Segments remaining after the qualitative second screening (**Section 4.3**) were connected to form longer Preliminary Corridor Alternatives, each designated with a particular color--seven such corridor alternatives were formed. The Preliminary Corridor Alternatives can be combined to form nine end-to-end Preliminary Study Alternatives for the entire project.

Develop Conceptual Designs. Conceptual designs were prepared within these corridors, taking into consideration engineering design constraints and the locations of known sensitive resources. Conceptual designs include a horizontal alignment for the roadway, right-of-way limits and a basic horizontal design for the interchanges. Vertical profiles and construction limits were not prepared for conceptual designs, although existing ground contours were reviewed to ensure that there were no vertical profile concerns that would not be able to be addressed during functional design. Similarly, basic Y-line characteristics were reviewed to ensure that reasonable interchanges could be accommodated at logical locations. Construction limits generally were able to be contained within a right-of-way of 300 feet. Conceptual designs may change and are likely to do so when studied in detail and updated for the DSAs. The alignments could be relocated anywhere within the 1,000-foot detailed study corridors as more detailed information is gathered and analyses are conducted.

Quantify Impacts. Impacts to the natural and human environments based on the conceptual designs within Preliminary Corridor Alternatives were estimated and tabulated based on available GIS data, information from previous studies, and recent site visits. Impacts for some screening factors were calculated both within the 1,000-foot study corridors and within the conceptual 300-foot right-of-way. For other screening factors, including many human environment factors, impacts were calculated only within the 1,000-foot study corridors because of the relatively small numbers of these sites.

Collect Public and Agency Input. Comments from members of the public, local government representatives, and agency representatives were solicited at and following the Public Information Meetings held in September 2010 and December 2010 and at the resource and regulatory agency meetings held in November 2010, January 2011, and August 2012. These comments were considered as part of the overall evaluation of the Preliminary Corridor Alternatives.

Recommend Detailed Study Alternatives. From the sets of conceptual design alignments, DSAs were recommended based on the estimated impacts to the human and natural environments,

engineering design considerations, and input from the public, local governments, and resource and regulatory agencies.

5.1.2 Design Criteria

The design criteria used to develop the conceptual designs are based on the project's location, function, classification, and design speed. The design criteria conform to the standards established by the American Association of State Highway and Transportation Officials (AASHTO) (2011).

5.1.2.1 New Location Alignments

The design criteria and typical roadway cross-section (**Figure 5-1**) are influenced by the type of facility required to fulfill the project's purpose. For the alignments on new location, a six-lane, median-divided, controlled-access highway was assumed. The proposed design speed is 70 mph for the main lines of the new location alternatives. Three 12-foot lanes are proposed for each direction of travel, separated by a 70-foot median. This median width would allow for a future widening to provide an additional lane in each direction without having to purchase any additional right-of-way. The total right-of-way would vary in width, generally from 300 to 350 feet, and be wider around interchanges.

5.1.2.2 Hybrid New Location/Improve Existing Roadways Alternative

As described in **Section 2.1.5.3**, the Hybrid 3 Alternative would include the following improvements,

- Widen the following roadways from existing two to four lane facilities to six-lane controlled-access facilities:
 - Jessie Drive from NC 540 to Ten Ten Road
 - Ten Ten Road from Jessie Drive to I-40 (including a segment on new location between NC 50 and I-40)
- Construct Phase II of the project on new location, according to the design criteria listed in **Section 5.1.2.1**.

5.1.3 Tolling

Tolls would be collected using open road tolling technology. Open road tolling allows for tolls to be collected at highway speeds and eliminates the need for conventional toll plazas. There would be no need for motorists to slow down or stop to execute a toll transaction. Motorists with transponders would have the tolls automatically deducted from prepaid accounts. Motorists without transponders would have a photo taken of their license plates and be sent a bill in the mail.

5.1.4 Quantitative Screening Criteria

The factors listed in **Table 5-1** were considered in the evaluation and screening of Preliminary Corridor Alternatives. These factors were first presented to the study team, including representatives of federal and state environmental regulatory and resource agencies and the Capital Area MPO on August 10, 2010, and were finalized on September 8, 2010. Data on these factors were obtained from several Geographic Information System (GIS) databases (NCDOT, NC Department of Environment and Natural Resources, Wake County, Johnston County, US Geological Survey, and US Fish and Wildlife Service), state resource agency files, aerial photography, and field visits. More detailed

studies on many of these factors will be completed after the DSAs are identified in order to more accurately determine the presence/absence and limits of these resources.

The ability to meet the project's purpose was considered during the qualitative first screening and the second tier screening. It also was considered in developing the conceptual designs for the Preliminary Corridor Alternatives. It was assumed that all alternatives considered in the third tier screening meet the project purpose. For that reason, purpose was not used as an explicit screening criterion in the third tier screening. However, corridor alternatives selected as DSAs will be quantitatively assessed in terms of their ability to meet Measures of Effectiveness (MOEs) for assessing the project purpose. The Draft EIS will summarize the results of this assessment.

The criteria listed in **Table 5-1** are discussed below:

Length and Construction Cost

Length, number of interchanges, number of minor road crossings, and number of power line easement crossings affect the design and construction costs of an alternative. Longer corridors with greater numbers of interchanges, grade-separated road crossings, and easement crossings generally have higher costs.

Socioeconomic Criteria

Socioeconomic criteria include residential and business relocations. Corridor locations contributing to excessive community disruption or isolation were avoided where possible. A higher number of minor road crossings can indicate more disruptions to neighborhoods. Relocations of residences and businesses, and associated social or economic impacts, are often of greatest concern to the public and local officials. A higher number of residential and business relocations also represent increases in right-of-way costs.

Areas with high concentrations of low-income and/or minority residents as determined by analysis of 2010 US Census data were identified as potential Environmental Justice communities. Areas with high concentrations of residents with limited proficiency in speaking and understanding English were identified as potential Limited English Proficiency populations.

Historic Resource Criteria

Sites or properties either listed on the National Register of Historic Places (NRHP) or previously identified as potentially eligible for listing were identified within the project study area based on information available at the State Historic Preservation Office. A historic architecture survey will be prepared for this project following selection of DSAs. NRHP-listed sites and sites known to be potentially historic were avoided to the greatest extent possible in the development of Preliminary Corridor Segments and conceptual designs.

Section 4(f)-Applicable Resources

Section 4(f) of the US Department of Transportation Act (49 USC 303) applies to transportation projects that use lands from publicly owned parks, recreational areas, wildlife refuges, or historic sites. Under Section 4(f), FHWA cannot approve a transportation project that requires the use of any of these resources unless certain conditions are met, including demonstration that there are no feasible and prudent alternatives and that the project includes all possible planning to minimize harm to the property as a result of the use. State and local GIS data and field studies were used to determine the locations of publicly owned parks, recreational areas, wildlife refuges, and NRHP-listed sites in the project study area.

Table 5-1: Third Tier of Preliminary Corridor Alternatives Screening Criteria

Screening Factor	Impact Calculation Method	Source of Data
Length of Alternative	Length of corridor	Based on conceptual design
Number of Interchanges	Number along corridor	Based on conceptual design
Number of major power easement crossings	Number along corridor	GIS databases, aerial photography
Relocations Residential Businesses	Number counted within potential ROW (with larger areas around interchanges) and within 1,000-foot corridors	GIS databases, tax parcel mapping, NCDOT aerial photography
Potential Environmental Justice Communities	Number of Census Blocks counted within 1,000-foot corridors	US Census Data
Potential Limited English Proficiency Communities	Number of Census Blocks counted within 1,000-foot corridors	US Census Data
Historic Properties	Number counted within potential ROW (with larger areas around interchanges)	GIS databases, site visits
Section 4(f)-Applicable Resources	Number counted within potential ROW (with larger areas around interchanges)	GIS databases, site visits
Voluntary Agricultural District (VAD) Properties	Number counted within 1,000-foot corridors	Natural Resources Conservation Service
Hazardous Materials Sites	Number counted within potential ROW (with larger areas around interchanges) and within 1,000-foot corridors	GIS databases, NC Department of Environment and Natural Resources
Streams	Linear feet within potential ROW (with larger areas around interchanges) and within 1,000-foot corridors	GIS databases
Wetlands	Acreage within potential ROW (with larger areas around interchanges) and within 1,000-foot corridors	GIS databases
Ponds	Number counted within potential ROW (with larger areas around interchanges) and within 1,000-foot corridors	GIS databases
100-Year Floodplain	Acreage counted within potential ROW (with larger areas around interchanges) and within 1,000-foot corridors	GIS databases
Critical Watershed Area	Acreage within potential ROW (with larger areas around interchanges) and within 1,000-foot corridors	GIS databases
303(d) Waters	Linear feet within potential ROW (with larger areas around interchanges) and within 1,000-foot corridors	NC Division of Water Resources

Voluntary Agricultural District Properties

Voluntary Agricultural District (VAD) programs allow farmers to form areas where commercial agriculture is encouraged and protected. Authorized by the North Carolina General Assembly in the 1985 Farmland Preservation Enabling Act (61:106-738), VADs are implemented at the county level. Landowners receive a set of benefits in exchange for restricting development on their land for a set

period of time. Wake and Johnston counties have each adopted VAD ordinances, which help to preserve farmland against non-farm development. County GIS data were used to determine the location of VAD properties in the project study area.

Hazardous Materials Sites

Known sites of hazardous materials or waste were obtained from NCDOT's GIS database. Remediation and acquisition activities associated with hazardous materials/waste sites can increase project costs and delay construction schedules. In the preliminary study corridors, the known sites included underground storage tanks (USTs), National Pollutant Discharge Elimination Sites (NPDES), and sites with recorded groundwater incidents according to the NC Department of Environment and Natural Resources (NCDENR). These types of sites were avoided in the development of Preliminary Corridor Segments and conceptual designs whenever practicable.

Natural Resource Criteria

Natural resource criteria included number of stream crossings, length of stream impacts, ponds, wetlands (based on National Wetland Inventory mapping), and the Swift Creek Watershed Critical Area.

Construction in jurisdictional areas (waters of the United States, including wetlands and streams that typically would require mitigation if impacted) requires a permit from the US Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA), and a water quality certification from the NCDENR-Division of Water Resources (NCDWR) pursuant to Section 401 of the CWA. USACE and DWQ require an applicant to demonstrate that all practicable measures have been taken to avoid and minimize wetland impacts. Under Section 401 of the CWA, DWQ also requires mitigation for all stream impacts greater than 150 linear feet. Wetlands and streams are located throughout the project study area.

The presence of streams indicates areas where culverts or bridges may be required, which represent increases in construction costs. Higher values for total areas of streams within a corridor can indicate there may be less flexibility in designing roadway alignments within these corridors in order to avoid or minimize impacts to streams.

Other important natural resource criteria include the presence of Section 303(d) impaired waters along the alternative, potential impacts to the Swift Creek Critical Watershed Area, and potential impacts to the 100-year floodplain.

5.2 THIRD TIER SCREENING RESULTS

As described in **Section 4.3**, following the second tier screening, the remaining segments were combined into Preliminary Corridor Alternatives, each identified with a particular color. Color-coding the corridors this way facilitated the dialogue with the public, local officials and agencies when discussing the Preliminary Corridor Alternatives. In the Phase I project area, there were three major Corridor Alternatives: Red (the most northern corridor), Orange (the protected corridor), and Blue (the most southern corridor). In the Phase II area, the Green Corridor Alternative was the only option. Additionally there were three crossover corridors, connecting the major corridor options: Purple (connecting the Orange Corridor Alternative to the Blue Corridor Alternative), Pink (connecting Blue to Red), and Yellow (connecting Orange and Blue to Green). The locations of each of the color-coded Preliminary Corridor Alternatives as presented at Public Informational Workshops in September 2010 are shown in **Figure 4-3**.

The nine remaining end-to-end Preliminary Study Alternatives are composed of the various color-named Preliminary Corridor Alternatives. The following list describes the nine unique new location Preliminary Study Alternatives that were evaluated in the third tier screening and lists the Roman numerals assigned to each for reference:

- I. Orange to Red to Green (Segments 1-2-3-26-27-8-9)
- II. Orange to Green (Segments 1-2-3-4-5-6-33-7-8-9)
- III. Orange to Yellow to Green (Segments 1-2-3-4-5-31-32-7-8-9)
- IV. Orange to Blue to Orange to Green (Segments 1-10-11-12-13-14-15-6-33-7-8-9)
- V. Orange to Blue to Yellow to Green (Segments 1-10-11-12-13-14-31-32-7-8-9)
- VI. Orange to Blue to Pink to Red to Green (Segments 1-10-11-12-13-14-30-29-27-8-9)
- VII. Orange to Purple to Blue to Orange to Green (Segments 1-2-17-20-12-13-14-15-6-33-7-8-9)
- VIII. Orange to Purple to Blue to Yellow to Green (Segments 1-2-17-20-12-13-14-15-31-32-7-8-9)
- IX. Orange to Purple to Blue to Pink to Red to Green (Segments 1-2-17-20-12-13-14-30-29-27-8-9)

Additionally, the Hybrid Alternative 3 was evaluated in the third tier screening.

5.2.1 Impact Comparison

Based on the information reported in **Table 4-1**, the impacts for the alternatives remaining in the third tier of screening were determined. These impacts are reported in **Table 5-2**. None of the preliminary alternatives for the project would directly impact any known NRHP-listed properties, so this variable is not part of **Table 5-2**.

Stream Impacts

Alternatives IV, V, and VI, which all include the portion of the Blue Corridor Alternative extending through Holly Springs (Segment 10), would result in the greatest stream impacts (over 40,000 linear feet). Alternative I, which is the only option to include the Red Corridor Alternative through Garner, would result in the smallest stream impacts among the new location alternatives (approximately 24,500 linear feet).

Wetlands

Alternative II (entire Orange Corridor Alternative) and Alternative III (identical to Alternative II except crosses I-40 on the Yellow Corridor Alternative) would have the greatest wetland impacts among the new location options, including 88.1 and 82.0 acres within the conceptual 300-foot right-of-way, respectively. These two alternatives each include segments in the I-40 area with large amounts of wetlands. Alternative I, which includes the Red Corridor Alternative through Garner, and options including the Pink Corridor Alternative (Alternatives VII and IX) would result in the smallest wetland impacts among the new location alternatives—each includes less than 45 acres of wetlands in the right-of-way.

Critical Watershed Area and 303(d) Streams

The Red Corridor Alternative is the only Corridor Alternative that would cross the Swift Creek Critical Watershed Area, so Alternative I is the only option that would impact this area, containing 10.6 acres of the critical area within the right-of-way. Alternative II (entire Orange Corridor

Table 5-2: Preliminary Alternatives – Summary of Potential Impacts

ID	Preliminary Alternative	Length (MI)	Number of Interchanges	Major Power Easement Crossings	Relocations		Section 4(f)-Applicable Resources	Potential EJ Communities	Potential LEP Communities	VAD Properties	Hazardous Materials Sites		Streams (LF)		NWI Wetlands (AC)		Total Ponds		100-Year Floodplain (AC)		Critical Watershed Area (AC)		303(d) Waters (LF)	
					300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	1,000 ft Corridor	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor
I	Orange to Red to Green Corridor	23.94	10	5	404	1,061	2	1	1	0	6	11	24,520	76,690	43.7	113.5	30	48	128.7	259.3	10.6	38.9	1,300	4,200
II	Orange Corridor to Green Corridor	27.39	12	12	217	697	0	1	1	2	7	10	36,110	94,340	88.1	232.4	32	51	139.5	268.0	0	0	990	2,590
III	Orange to Yellow to Green Corridor	28.92	13	14	233	766	0	1	1	2	8	11	35,890	100,750	82.0	232.2	34	57	128.3	276.9	0	0	990	2,590
IV	Orange to Blue to Orange to Green Corridor	30.61	12	9	334	864	1	1	1	5	3	5	41,740	112,070	73.9	205.6	31	61	171.6	375.8	0	0	1,410	4,430
V	Orange to Blue to Yellow to Green Corridor	32.13	13	11	350	933	1	1	1	5	4	6	41,520	118,490	67.9	205.4	33	67	160.4	384.7	0	0	1,410	4,430
VI	Orange to Blue to Pink to Green Corridor	30.27	10	6	362	973	1	1	1	5	3	7	40,060	97,860	44.6	141.1	38	64	132.8	293.3	0	0	1,410	4,430
VII	Orange to Purple to Blue to Orange to Green Corridor	30.25	12	9	234	662	2	1	1	4	3	5	37,050	103,440	70.4	213.9	27	52	174.4	391.1	0	0	990	2,590
VIII	Orange to Purple to Blue to Yellow to Green Corridor	31.78	13	11	250	731	2	1	1	4	4	6	36,820	109,850	64.4	213.7	29	58	163.2	400.1	0	0	990	2,590
IX	Orange to Purple to Blue to Pink to Green Corridor	29.92	10	6	262	771	2	1	1	4	3	7	35,360	89,220	41.1	149.4	34	55	135.6	308.7	0	0	990	2,590
N/A	Hybrid 3	26.60	10	8	703	1,017	2	1	1	1	13	16	39,970	76,790	97.0	165.1	46	67	172.9	255.2	0	0	1,660	2,590

Sources: US Census, NC OneMap, National Wetlands Inventory, NCDOT aerial photography, Wake County and Johnston County tax parcel mapping
 Notes: ROW width varies according to widening requirements at interchanges. MI – miles. ROW – conceptual right-of-way. ft – feet. AC – acres. LF – linear feet.

Alternative), Alternative III (identical to Alternative II except crosses I-40 on the Yellow Corridor Alternative), and Alternatives VII, VIII and IX (all include the Purple Corridor Alternative) would all have the least impact on 303 (d) listed streams. However, it is important to note that the portion of Middle Creek crossed by the Purple Corridor Alternative is designated by Wake County as a priority stream corridor for preservation.

Socioeconomic Criteria

Alternative I, which includes the Red Corridor Alternative through Garner, would require relocations of the most homes and businesses, impacting over 400 structures. This is particularly striking since this option is the shortest of the alternatives. In addition, the Red Corridor Alternative would be the second major road, after US 70, to divide portions of Garner. Alternative II, which includes the entire Orange Corridor Alternative, would result in the fewest relocations among the new location alternatives, impacting 217 structures. As a group, preliminary alternatives incorporating the Purple Corridor Alternative would impact relatively fewer structures than many of the other alternatives. On the other hand, preliminary alternatives incorporating the entire Blue Corridor Alternative, including the portion bisecting Holly Springs (formerly preliminary corridor Segment 10), would impact relatively large numbers of structures. It is also important to note that this portion of the Blue Corridor Alternative would cross Holly Springs Road in the vicinity of Bass Lake Road—this existing intersection features shopping centers and other retail businesses and is an important retail center in Holly Springs. There are elementary schools just east and west of this intersection, and a fire station near the intersection, making the area an important center for the town's community facilities. By bisecting this area, the Blue Corridor Alternative would have a significant impact on community cohesion within Holly Springs. Hybrid Alternative 3 would directly impact the most structures (703), almost twice as much as any other option. This is because this option includes upgrading Ten Ten Road and would impact properties all along this corridor.

There is one known community of low-income, Hispanic residents with a high prevalence of limited English proficiency—this community is in the vicinity of the Green Corridor Alternative, near the eastern project terminus at US 64/US 264 Bypass. Because all of the preliminary new location alternatives would affect this area as they approach the eastern project terminus, all of these options may impact one potential EJ and LEP community.

Hazardous Materials Sites

Alternative II would impact the most potential hazardous materials sites (seven) and Alternatives I and III would each impact six sites. The remaining alternatives would impact three or four sites.

Physical Characteristics

The longest alternatives are Alternatives V and VIII, which each incorporate both the Blue and Yellow Corridor Alternatives. The total lengths of these options are approximately 32 miles. These options would also include the most interchanges, requiring thirteen. The shortest option, about 24 miles in length, is Alternative I, which includes the Red Corridor Alternative through Garner. This option would also include the fewest interchanges, requiring ten. The options incorporating the Yellow Corridor Alternative would also include the most major power easement crossings; each of these options would impact eleven or twelve power easements. Alternative I would impact the fewest, crossing a total of five power easements.

VAD Properties

Preliminary alternatives including the entire Blue Corridor Alternative would each impact five VAD properties and those including the Purple Corridor Alternative would each impact four. Alternative I

would not impact any VAD properties. Alternative II and Alternative III would each impact two VAD properties.

Section 4(f)-Applicable Resources

In the vicinity of the Red Corridor Alternative in Garner are White Deer Park, adjacent to the Red Corridor Alternative, and the planned Bryan Road Nature Park, bisected by the Red Corridor Alternative. Under current conceptual designs for the Red Corridor Alternative, existing parts of White Deer Park are just outside the preliminary corridor boundary. However, the town owns an adjacent 35-acre parcel to the north of the existing park and has plans to expand White Deer Park into this parcel. Current conceptual designs for the Red Corridor Alternative do cross this adjacent parcel (**Section 5.3.1.4** and **Figure 5-3**). Alternative I is therefore shown as impacting two potential Section 4(f) resources. The planned Southeast Regional Park near the Wake/Johnston County line is potentially affected by the Blue Corridor Alternative. All options including the Blue Corridor Alternative would cross private land that is planned to be included in the Southeast Regional Park, so each of these alternatives is shown as impacting one potential Section 4(f) resource. The planned Sunset Oaks Park in the Sunset Oaks neighborhood in Holly Springs is bisected by the Purple Corridor Alternative. All options including the Purple Corridor Alternative would bisect this planned park, and all options using the Purple Corridor Alternative also include the portion of the Blue Corridor Alternative that crosses the planned Southeast Regional Park. For this reason, each alternative using the Purple Corridor Alternative is shown as impacting one potential Section 4(f) resource. Alternative II and Alternative III are the only options with no known potential Section 4(f) resources.

5.2.2 Public and Agency Input

As described in **Section 6.2**, NCDOT used several methods to present preliminary project alternatives to local residents, agency representatives, local governments, and other project study area stakeholder groups. Several key issues emerged as important considerations for further refinement and evaluation of alternatives. Those issues are summarized below.

Issue 1: Impacts of the Green Corridor Alternative on Randleigh Farm

Description: The Green Corridor Alternative would bisect the Randleigh Farm property (**Section 4.2.7**) in a north-south direction, negatively impacting Raleigh and Wake County development plans for the site. City and County staff raised this concern during the Public Informational Meetings and in subsequent coordination meetings with NCDOT.

Solution: Previously eliminated Preliminary Corridor Segments 34, 35, 36, and 38 were added back into consideration (**Section 4.2.7**). These segments were combined to form a new Tan Corridor Alternative east of I-40. The Tan Corridor Alternative still impacts Randleigh Farm but by following its eastern edge instead of extending through the center of the parcel, it minimizes impacts to the property. It is important to note, however, that the Tan Corridor Alternative would impact the northwest corner of property owned by the State and intended as expansion property for the Clemmons State Educational Forest. There is no active recreational use of this portion of the Forest, but it is open to the public and may qualify as a Section 4(f) resource.

To completely avoid Randleigh Farm, an additional Corridor Alternative (Grey) was developed further to the east into Johnston County near the Wake County line. The Grey Corridor Alternative was a modified version of previously eliminated Segment 37, shifted slightly to minimize stream and wetlands impacts and to tie into the existing interchange at I-

540 and US 64/US 264 Bypass. This Corridor Alternative loops east of the City of Raleigh Neuse River Wastewater Treatment and the Clemmons State Educational Forest, two constraints east of Randleigh Farm. This alignment would add approximately four additional miles to the length of the facility. City of Raleigh supported the concept of completely avoiding the Randleigh property and staying east of the wastewater treatment facility, but agreed that the added length and associated large increase in construction cost were disproportionate drawbacks of this option. Wake County opposed the Grey Corridor Alternative as another option east of I-40 due to its potential for greater induced land development. Compared to the other Corridor Alternatives, the Grey Corridor Alternative is longer, would require more relocations, and would have greater stream and wetland impacts. Additionally, since the Grey Corridor Alternative is longer and further removed from the existing urbanized area, it has greater potential for induced development.

Following introduction of the Tan Corridor Alternative, NCDOT held a Public Informational Meeting on December 2, 2010, to solicit input on the Tan Corridor Alternative and Green Corridor Alternative and to present information about these options in the Phase II area (**Section 6.2.1**). Numerous public comments at and following this meeting generally expressed strong opposition to the Tan Corridor Alternative due to potential neighborhood impacts and support for using publicly-owned land in the Randleigh Farm property for the project. There was also public concern raised about potential impacts of the Tan Corridor Alternative on the Good Samaritan Baptist Church near Clayton. Due to public concern about the potential impacts of the Tan Corridor Alternative on neighborhoods and the community, the Wake County Board of Commissioners sent a letter on December 8, 2010, asking NCDOT to eliminate the Tan Corridor Alternative. For the same reasons, the Raleigh City Council voted on January 5, 2011, to send a letter asking NCDOT to remove the Tan Corridor Alternative from further consideration and to seek other alternative routes. The Johnston County Board of Commissioners sent a letter on February 8, 2011 asking NCDOT to eliminate the Tan Corridor Alternative from further consideration due to potential community impacts (**Section 6.3.3**). Copies of these letters and resolutions are in **Appendix B** and **Appendix C**.

Following the December 2, 2010, meeting and subsequent coordination with local governments in the project study area, three additional Corridor Alternatives were developed to avoid or minimize impacts to the Randleigh Farm property while also providing other potential benefits. These Corridor Alternatives are:

Brown Corridor Alternative: The Brown Corridor Alternative would diverge from the Green corridor near White Oak Road, extending to the northeast to cross US 70 Business near the Johnston County line. It would roughly parallel Brownfield Road in the vicinity of the City of Raleigh Neuse River Wastewater Treatment Plant biosolids facility and a Wake County/City of Raleigh police training facility along Battle Bridge Road.

Teal Corridor Alternative: The Teal Corridor Alternative is a short connector between the southern half of the Green corridor and the northern half of the Brown corridor.

Mint Green Corridor Alternative: The Mint Green Corridor Alternative is a slight modification of the Green Corridor Alternative, shifting a portion of its alignment eastward to minimize impacts to the Randleigh Farm property.

Table 5-3: Phase II Preliminary Corridor Alternatives – Summary of Potential Impacts

Preliminary Alternative	Length (MI)	Number of Interchanges	Major Power Easement Crossings	Relocations		Section 4(f)-Applicable Resources	Potential EJ Communities	Potential LEP Communities	VAD Properties	Hazardous Materials Sites		Streams (LF)		NWI Wetlands (AC)		Total Ponds		100-Year Floodplain (AC)		Critical Watershed Area (AC)		303(d) Waters (LF)	
				300 ft ROW	1,000 ft Corridor					300 ft ROW	1,000 ft Corridor	1,000 ft Corridor	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor
Orange to Green Corridor	9.43	6	4	82	189	0	1	1	2	3	5	17,110	46,310	32.9	79.6	16	27	100.4	158.5	0	0	490	1,030
Orange to Tan to Green Corridor	9.93	6	4	69	196	1	1	1	2	3	5	18,270	46,890	36.0	76.4	12	22	106.5	175.0	0	0	2,480	4,280
Orange to Mint Green to Green Corridor	9.51	6	4	85	196	0	1	1	2	3	5	18,130	46,020	37.3	86.1	14	25	107.5	179.0	0	0	500	1,030
Orange to Brown to Green Corridor	10.27	6	4	52	166	1	1	1	3	3	5	17,400	42,190	34.2	77.9	14	24	74.4	140.8	0	0	1,940	3,270
Orange to Green to Teal to Brown to Green Corridor	10.48	6	4	74	186	0	1	1	2	3	5	17,270	42,320	33.8	83.3	14	26	74.3	148.4	0	0	0	0
Orange to Grey to Green Corridor	13.04	6	3	110	296	0	1	1	2	3	5	16,260	49,670	42.5	107.9	3	23	78.3	174.5	0	0	890	2,010

Sources: US Census, NC OneMap, National Wetlands Inventory, NCDOT aerial photography, Wake County and Johnston County tax parcel mapping

Notes: Impacts calculated for Preliminary Corridor Alternatives between I-40 and I-540 at the US 64/US 264 Bypass. ROW width varies according to widening requirements at interchanges. MI – miles. ROW – conceptual right-of-way. ft – feet. AC – acres. LF – linear feet.

Figure 5-2 shows the locations of all of the corridors developed and evaluated in the Phase II area. **Table 5-3** compares the relative impacts associated with the various Preliminary Corridor Alternatives comprised of these color-coded corridors between I-40 and I-540 at the US 64/US 264 Bypass. These impacts reflect a connection to the Orange Corridor Alternative at I-40.

Issue 2: Impacts of Blue Corridor Alternative on Planned Southeast Regional Park

Description: The Blue Corridor Alternative would bisect a planned Wake County park, known as the Southeast Regional Park. The planned park would be located near the intersection of NC 42 and Barber Bridge Road in the Willow Spring area. The County has identified several parcels for purchase for the park and has received a North Carolina Clean Water Management Trust Fund grant to purchase the parcels. The County has purchased the parcels at the southern end of the planned park, but is still in negotiations with the current property owner to purchase parcels at the northern end. Under conditions of the grant, all of the parcels must be part of the park.

Solution: The alignment of the Blue Corridor Alternative was shifted slightly to avoid the parcels the County has already purchased for the Southeast Regional Park. The impact data in **Table 5-2** reflect this shift. However, there was no feasible way to shift the alignment further to completely avoid all of the planned park parcels without incurring major impacts to nearby neighborhoods.

Issue 3: Impacts of Red Corridor Alternative on Potential Section 4(f) Resources in Garner

Description: As originally developed, the Red Corridor Alternative would have directly impacted a small portion of White Deer Park, near Aversboro Road in Garner. The Town of Garner and numerous Garner stakeholders expressed concern about this potential impact.

Solution: The alignment of the Red Corridor Alternative was shifted slightly to avoid White Deer Park. The impact data in **Table 5-2** reflect this shift. A new Corridor Alternative known as the Red Modified Corridor was also developed as an option to avoid direct impacts to all of the potential Section 4(f) resources in Garner (**Section 5.3.1.4**). The Red Modified Corridor is shown in relation to potential Section 4(f) resources in **Figure 5-3**.

Issue 4: Potential for Additional Options for Minimizing Wetlands Impacts

Description: Garner stakeholders have expressed continuing concern about the lack of potential alternative routes in the Phase I area and have asked whether other alternative routes could be identified that would minimize wetland impacts comparably to the Red Corridor Alternative while also minimizing community impacts relative to the Red Corridor Alternative.

Solution: Two additional Corridor Alternatives were developed in an attempt to minimize wetland impacts while also minimizing community impacts. These Corridor Alternatives are:

Lilac Corridor Alternative: The Lilac Corridor Alternative would diverge southward from the Orange between US 401 and Old Stage Road, and then would cross back over the Orange near Sauls Road. The Lilac Corridor Alternative would cross I-40 slightly north of where the Orange Corridor Alternative would cross I-40, connecting

to the Green and Brown Corridor Alternatives near White Oak Road. By shifting its I-40 interchange area farther away from Swift Creek and its surrounding wetlands, the Lilac Corridor Alternative would reduce wetland impacts relative to the Orange Corridor Alternative. The Lilac Corridor Alternative would also include a narrower crossing of Swift Creek and its adjacent wetlands than the Orange Corridor Alternative. The interchange with I-40 would be further upland from Swift Creek and its feeder streams than the Orange Corridor interchange location.

A connector was also added between the Blue Corridor Alternative and the Lilac Corridor Alternative to provide an additional corridor combination in the Phase I area: the Purple-Blue-Lilac Corridor.

A second connector was added between the Orange Corridor Alternative and the Lilac Corridor Alternative near Sauls Road to provide additional corridor combinations in the Phase I area. This created two alignment options using combinations of the Orange and Lilac Corridor Alternatives: one that connects to the Lilac Corridor Alternative at Fanny Brown Road and another that connects to Lilac at Sauls Road.

Plum Corridor Alternative: The Plum Corridor Alternative was developed to determine if a simplified, slightly modified version of the Yellow Corridor Alternative might be able to reduce wetland or other environmental impacts in the area of Swift Creek. The Plum Corridor Alternative includes all of the Orange Corridor Alternative except that the movements to and from the south and the west along I-40 and the Complete 540 project are located on a new connector ramp system that is located south of Swift Creek and north of US 42.

Figure 5-4 shows the locations of all of the corridors developed and evaluated in the Phase I area. **Table 5-4** compares the relative impacts associated with the various Preliminary Corridor Alternatives in the Phase I area.

Issue 5: Potential for Alignments West of NC 55 Bypass

Many participants in the public meetings suggested NCDOT consider the concept of a connecting corridor west of Holly Springs and west of NC 55 Bypass. This corridor would connect from the Western Wake portion of the Triangle Expressway to the Blue Corridor Alternative south of Holly Springs. Its primary advantage would be minimizing community disruption and direct community impacts in Holly Springs. This concept was evaluated previously and eliminated (Segment 39).

Because of the magnitude of community disruption associated with the Blue and Purple Corridor Alternatives in Holly Springs, additional new location possibilities west of NC 55 Bypass were evaluated. However, all options faced the same drawbacks that caused Segment 39 to be eliminated (**Section 4.2.2**). The most significant drawback is all of these options would require construction of a new interchange on the Western Wake portion of the Triangle Expressway, which would be very costly. In addition, the bonds that were sold to finance construction of the existing Triangle Expressway were based on the assumption that the project would be an operating, tolled facility for its entire planned length. Abandonment of a portion of this roadway would pose an uncertain risk with respect to its financing. Most of the options west of NC 55 Bypass would also impact a Wake County landfill along the west side of NC 55 Bypass, reducing capacity of the landfill and incurring additional high costs to

Table 5-4: Phase I Preliminary Corridor Alternatives – Summary of Potential Impacts (End-to-End Alternatives All Using Green Corridor Alternative in Phase II Area)

Preliminary Alternative	Length (MI)	Number of Interchanges	Major Power Easement Crossings	Relocations		Section 4(f)-Applicable Resources	Potential EJ Communities	Potential LEP Communities	VAD Properties	Hazardous Materials Sites		Streams (LF)		NWI Wetlands (AC)		Total Ponds		100-Year Floodplain (AC)		Critical Watershed Area (AC)		303(d) Waters (LF)	
				300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	1,000 ft Corridor	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor
Orange to Red to Green Corridor	23.94	10	5	404	1,061	2	1	1	0	6	11	24,520	76,690	43.7	113.5	30	48	128.7	259.3	10.6	38.9	1,300	4,200
Orange to Green Corridor	27.39	12	12	217	697	0	1	1	2	7	10	36,110	94,340	88.1	232.4	32	51	139.5	268.0	0	0	990	2,590
Orange to Yellow to Green Corridor	28.92	13	14	233	766	0	1	1	2	8	11	35,890	100,750	82.0	232.2	34	57	128.3	276.9	0	0	990	2,590
Orange to Blue to Orange to Green Corridor	30.61	12	9	334	864	1	1	1	6	3	5	41,740	112,070	73.9	205.6	31	61	171.6	375.8	0	0	1,410	4,430
Orange to Blue to Yellow to Green Corridor	32.13	13	11	350	933	1	1	1	6	4	6	41,520	118,490	67.9	205.4	33	67	160.4	384.7	0	0	1,410	4,430
Orange to Blue to Pink to Green Corridor	30.27	10	6	362	973	1	1	1	6	3	7	40,060	97,860	44.6	141.1	38	64	132.8	293.3	0	0	1,410	4,430
Orange to Purple to Blue to Orange to Green Corridor	30.25	12	9	234	662	1	1	1	5	3	5	37,050	103,440	70.4	213.9	27	52	174.4	391.1	0	0	990	2,590
Orange to Purple to Blue to Yellow to Green Corridor	31.78	13	11	250	731	1	1	1	5	4	6	36,820	109,850	64.4	213.7	29	58	163.2	400.1	0	0	990	2,590
Orange to Purple to Blue to Pink to Green Corridor	29.92	10	6	262	771	1	1	1	5	3	7	35,360	89,220	41.1	149.4	34	55	135.6	308.7	0	0	990	2,590
Orange to Lilac (at Fanny Brown Road) to Green Corridor	26.55	12	10	447	1,115	0	1	1	1	10	13	34,340	85,830	50.6	157.0	39	53	103.8	211.0	0	0	990	2,590
Orange to Lilac (at Sauls Road) to Green Corridor	26.36	12	12	366	981	0	1	1	1	8	12	33,140	85,320	55.7	167.4	34	50	103.8	210.8	0	0	990	2,590
Orange to Plum to Green Corridor	27.39	15	15	227	721	0	1	1	2	8	11	39,450	97,060	82.6	232.1	32	51	129.6	266.5	0	0	990	2,590
Orange to Red Modified to Green Corridor	24.25	10	5	439	1,134	0	1	1	0	6	11	27,820	78,590	43.9	113.8	32	50	126.8	255.4	10.6	38.9	1,300	4,200
Orange to Blue to Lilac to Green Corridor	30.19	12	9	453	1,088	1	1	1	4	5	7	41,540	104,280	50.4	152.8	37	62	134.5	295.9	0	0	1,410	4,430
Orange to Purple-Blue-Lilac to Green Corridor	29.84	12	9	353	886	1	1	1	5	5	7	36,840	95,640	46.9	161.2	33	53	137.4	311.3	0	0	990	2,590

Sources: US Census, NC OneMap, National Wetlands Inventory, NCDOT aerial photography, Wake County and Johnston County tax parcel mapping
 Notes: ROW width varies according to widening requirements at interchanges. MI – miles. ROW – conceptual right-of-way. ft – feet. AC – acres. LF – linear feet.

Most of the Phase I Corridor Alternatives can be combined with other Phase II corridors to create additional Preliminary Study Alternatives; for simplicity, the information in this table is based on the combination of each Phase I Corridor Alternative with the Green Corridor Alternative in the Phase II area.

purchase right-of-way within the landfill. Many of these options would also have direct impacts on businesses in the Holly Springs Business Park, the town's major employment center and the foundation of its tax base. Most of these options would also impact a large retail commercial center on the west side of NC 55 Bypass. Several of the options would impact the Shearon Harris Lake, and these impacts would increase as Progress Energy plans to raise the water level in the lake by twenty feet, expanding the lake's surface area. None of the Preliminary Corridor Alternatives would avoid all of these constraints. If NC 55 Bypass were used as the project corridor in this area, NC 55 would have to become the free alternative to a tolled NC 55 Bypass. This would be in direct conflict with the local vision for NC 55 as a commercial and service-oriented main street with lower-speed traffic, with the NC 55 Bypass providing the free option for higher-speed through traffic.

Issue 6: Very Limited Opportunities for Other Alignment Options

Much of the project study area has experienced rapid population growth and accompanying residential and commercial development in the nearly twenty years since NCDOT identified the protected corridor for Phase I of the project. Most of the local governments in the project study area have developed future land use plans with the assumption that the Complete 540 project would be constructed in the protected corridor, identifying planned commercial and employment centers at potential interchanges. Many area residents have purchased homes and established businesses with this same assumption, choosing to make location decisions to avoid being directly impacted by the project.

As development patterns have taken shape in the project study area, few large areas of undeveloped land have remained. For this reason, it is difficult to identify new location options to the protected corridor that would not result in extremely large numbers of relocations and major community disruption. Through all of the project's public outreach to date, including the thousands of comments of local residents and extensive local government and agency input, no other new location alignment options besides the ones described in this report have been suggested.

NCDOT held a resource and regulatory agency meeting for this project on November 2, 2010. At that meeting, the color-coded Preliminary Corridor Alternatives under consideration at that time were presented, contrasted, and discussed, and several were recommended by NCDOT for elimination. Two new Corridor Alternatives, the Forest Green Corridor Alternative and the Additional I-40 Concept, were among those presented at a subsequent resource and regulatory agency meeting on January 20, 2011—after considering these two Corridor Alternatives, representatives of resource and regulatory agencies agreed with NCDOT's recommendation to eliminate both.

5.2.3 Constraints and Benefits of Preliminary Corridor Alternatives

Following the further refinement and evaluation described in **Section 5.2.2**, the remaining Preliminary Corridor Alternatives were examined in order to compare the notable constraints and relative benefits of each. **Table 5-5** compares these constraints and relative benefits for the various color-coded Preliminary Corridor Alternatives considered for the project and sections below summarize the evaluation of each.

Table 5-5: Preliminary Corridor Alternatives – Constraints and Benefits

Corridor Alternative	Constraints/Issues	Benefits
Phase I Area		
Orange Corridor Alternative	<ul style="list-style-type: none"> • Crosses Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) • Impacts more acres of wetlands than many other options 	<ul style="list-style-type: none"> • Broad public support • Formally supported by several local governments • Fewer relocations/neighborhood impacts • Limited development activity since corridor was protected • Extensive public awareness • Foundation of several local land use plans • Needed for several communities to achieve planning objectives • Avoids impacts to Section 4(f) resources
Blue Corridor Alternative	<ul style="list-style-type: none"> • Crosses heavily developed central Holly Springs • Crosses Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) • Greater potential for induced development • Formally opposed by Wake County • Broad public opposition • Bisection planned Southeast Regional Park, a potential Section 4(f) resource • Would limit the ability of Holly Springs and Fuquay-Varina to achieve their land use planning objectives 	<ul style="list-style-type: none"> • Potential to serve traffic in growing areas near Fuquay-Varina
Purple Corridor Alternative	<ul style="list-style-type: none"> • Crosses and longitudinally follows Middle Creek • Crosses Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) • Greater potential for induced development • Formally opposed by Wake County • Broad public opposition • Bisection planned Sunset Oaks Park, a potential Section 4(f) resource • Would limit the ability of Holly Springs and Fuquay-Varina to achieve their land use planning objectives 	<ul style="list-style-type: none"> • Fewer residential impacts than Orange-to-Blue or Orange-to-Red • Potential to serve traffic in growing areas near Fuquay-Varina
Red Corridor Alternative	<ul style="list-style-type: none"> • Crosses numerous established Garner subdivisions • Impacts Greenfield South Business Park • Crosses Swift Creek Critical Watershed Area • Formally opposed by Wake County and Garner • Broad public opposition • Impacts two Section 4(f)-applicable resources • No US 70 Business interchange • Would limit the ability of Garner to achieve its land use planning objectives 	<ul style="list-style-type: none"> • Shortest option • Crosses Swift Creek upstream of Lake Benson dam, avoiding/minimizing impacts to protected Dwarf Wedgemussel • Minimizes total wetlands impacts

Table 5-5: Preliminary Corridor Alternatives – Constraints and Benefits

Corridor Alternative	Constraints/Issues	Benefits
Red Modified Corridor Alternative	<ul style="list-style-type: none"> • Numerous residential impacts in established Garner subdivisions • Impacts Greenfield South Business Park • Crosses Swift Creek Critical Watershed Area • Formally opposed by Wake County and Garner • Likely public opposition • No US 70 Business interchange • Would limit the ability of Garner to achieve its land use planning objectives • Undesirable roadway alignment (horizontal and vertical) for expressway • Undesirable roadway alignment would not accommodate possible future operating speed increase without impacts to Section 4(f) resources 	<ul style="list-style-type: none"> • Crosses Swift Creek upstream of Lake Benson dam, avoiding/minimizing impacts to protected Dwarf Wedgemussel • Minimizes total wetlands impacts • Avoids impacts to Section 4(f) resources
West of NC 55 Bypass to Blue Corridor Alternative	<ul style="list-style-type: none"> • Design constraints prevent tying into the existing terminus of the Triangle Expressway at NC 55 Bypass • Impacts Wake County landfill • Impacts Shearon Harris Reservoir • Greater potential for induced development • Adverse bonding implications for existing Triangle Expressway 	<ul style="list-style-type: none"> • Minimizes impacts on development in Holly Springs • Potential to serve traffic in growing areas near Fuquay-Varina
Yellow Corridor Alternative	<ul style="list-style-type: none"> • Crosses Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) • Crosses Swift Creek further south than other corridors and longitudinally follows Swift Creek 	<ul style="list-style-type: none"> • Separates expressway to expressway interchanges instead of being in a single location providing easier driver understanding • Avoids impacts to Section 4(f) resources
Pink Corridor Alternative	<ul style="list-style-type: none"> • Crosses Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) • Creates less direct alignment route than other options • Crosses wastewater treatment biosolids facility sprayfield area and impacts two 25-acre holding ponds • Impacts Greenfield South Business Park • Formally opposed by Wake County and Garner • No US 70 Business interchange • Would limit the ability of Garner to achieve its land use planning objectives 	<ul style="list-style-type: none"> • Shifts I-40 interchange area out of Dwarf Wedgemussel habitat in Swift Creek • Avoids impacts to Section 4(f) resources
Additional I-40 Concept	<ul style="list-style-type: none"> • Impacts Greenfield South Business Park • No US 70 Business interchange • Crosses Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) 	<ul style="list-style-type: none"> • Follows existing I-40 alignment, possibly minimizing community disruption • Avoids impacts to Section 4(f) resources
Lilac Corridor Alternative (connection at Fanny Brown Road)	<ul style="list-style-type: none"> • Crosses Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) • Would result in more relocations than any other option • Crosses wastewater treatment biosolids facility sprayfield area and impacts a portion of one 25 acre holding pond 	<ul style="list-style-type: none"> • Impacts fewer acres of wetlands than the Orange Corridor Alternative • Avoids impacts to Section 4(f) resources

Table 5-5: Preliminary Corridor Alternatives – Constraints and Benefits

Corridor Alternative	Constraints/Issues	Benefits
Lilac Corridor Alternative (connection at Sauls Road)	<ul style="list-style-type: none"> • Crosses Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) • Crosses wastewater treatment biosolids facility sprayfield area and impacts a portion of one 25 acre holding pond 	<ul style="list-style-type: none"> • Impacts fewer acres of wetlands than the Orange Corridor Alternative • Crosses a narrower portion of Swift Creek and adjacent wetlands than the Orange Corridor • Avoids impacts to Section 4(f) resources
Purple-Blue-Lilac Corridor Alternative	<ul style="list-style-type: none"> • Bisects planned Southeast Regional Park, a potential Section 4(f) resource • Bisects planned Sunset Oaks Park, a potential Section 4(f) resource • Crosses Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) • Would result in a relatively high number of relocations • Crosses wastewater treatment biosolids facility sprayfield area and impacts a portion of one 25 acre holding pond 	<ul style="list-style-type: none"> • Impacts fewer acres of wetlands than the Orange Corridor Alternative
Plum Corridor Alternative	<ul style="list-style-type: none"> • Crosses Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) • Surrounds Swift Creek with roadways in Dwarf Wedgemussel habitat area • Would require the construction of more interchanges than any other new location option 	<ul style="list-style-type: none"> • Avoids impacts to Section 4(f) resources
Phase II Area		
Forest Green to Green Corridor Alternative	<ul style="list-style-type: none"> • More relocations than similar options • Potentially impacts a guying wire for a communications tower • Alignments using this corridor would all cross Swift Creek downstream of Lake Benson dam (Dwarf Wedgemussel habitat) 	<ul style="list-style-type: none"> • Avoids Greenfield South Business Park
Green Corridor Alternative	<ul style="list-style-type: none"> • Bisects the Randleigh Farm planned development of Raleigh and Wake County • Alignment is in close proximity to an anchor and guying wire for a communications tower 	<ul style="list-style-type: none"> • Avoids Clemmons State Educational Forest (potential Section 4(f) resource)
Mint Green Corridor Alternative	<ul style="list-style-type: none"> • Impacts Randleigh Farm • Alignment is in close proximity to an anchor and guying wire for a communications tower 	<ul style="list-style-type: none"> • Shifts impacts to Randleigh Farm property further to the east on the property • Avoids Clemmons State Educational Forest (potential Section 4(f) resource)

Table 5-5: Preliminary Corridor Alternatives – Constraints and Benefits

Corridor Alternative	Constraints/Issues	Benefits
Tan Corridor Alternative	<ul style="list-style-type: none"> • More relocations than Green Corridor Alternative • Impacts northwest corner of Clemmons State Educational Forest expansion property (potential Section 4(f) resource) • Impacts Good Samaritan Baptist Church (southern part of corridor only) 	<ul style="list-style-type: none"> • Shifts impact on Randleigh Farm property to east parcel area • Avoids communications tower anchor
Brown Corridor Alternative	<ul style="list-style-type: none"> • Impacts wastewater treatment biosolids facility sprayfield area • Impacts police training center on Battle Bridge Road • Impacts northwest corner of Clemmons State Educational (potential Section 4(f) resource)Forest expansion property 	<ul style="list-style-type: none"> • Avoids impacts to Randleigh Farm property • Avoids communications tower anchor • Fewer relocations than Tan or Green • Crosses Neuse River in more favorable location than Green/Tan corridors • More favorable interchange at Auburn- Knightdale Road than Green/Tan corridors
Teal to Brown Corridor Alternative	<ul style="list-style-type: none"> • Alignment is in close proximity to an anchor and guying wire for a communications tower • Impacts wastewater treatment biosolids facility sprayfield area • Impacts police training center on Battle Bridge Road 	<ul style="list-style-type: none"> • Avoids impacts to Randleigh Farm property • Crosses Neuse River in more favorable location than Green/Tan corridors • More favorable interchange at Auburn- Knightdale Road than Green/Tan corridors • Avoids Clemmons State Educational Forest Avoids Clemmons State Educational Forest (potential Section 4(f) resource)
Grey Corridor Alternative	<ul style="list-style-type: none"> • Additional corridor miles with added costs • Greater potential for induced development 	<ul style="list-style-type: none"> • Avoids communications tower anchor • Avoids the Randleigh Farm property • Potential to serve traffic in growing areas of Clayton and Johnston County • Avoids Clemmons State Educational Forest Avoids Clemmons State Educational Forest (potential Section 4(f) resource)

5.2.3.1 Orange Corridor Alternative

The Orange Corridor Alternative has numerous relative benefits when compared to the other corridors. As previously noted, the Orange Corridor Alternative has been protected from development for nearly twenty years. As such, alternatives that include the entire Orange Corridor Alternative would require fewer relocations than alternatives incorporating other corridors. It also minimizes community disruption as there would be few neighborhoods bisected by this option. It has been formally supported over all other options by Wake County, Holly Springs, Fuquay-Varina, and Garner, and most of the local jurisdictions in the project study area have developed future land use plans based on the assumption that the project would be constructed in this corridor. There is broad public familiarity with and support for the Orange Corridor Alternative, with over 90 percent of public comments received after the September 2010 Public Informational Meetings indicating support for this option.

The only notable constraints associated with the Orange Corridor Alternative are its potential impacts on Dwarf Wedgemussel habitat in Swift Creek and its impacts to more acres of wetlands than several other options. The portion of Swift Creek below the Lake Benson dam is important habitat for this species and this area, particularly the area near I-40 and the Clayton Bypass, has been heavily impacted by development activity in these parts of Wake and Johnston counties. Because the Orange Corridor Alternative would cross I-40 in this area, it has the potential to negatively impact habitat important for the survival of the Dwarf Wedgemussel in Wake and Johnston counties.

Despite its potential impact on the federally protected Dwarf Wedgemussel, the NCDOT recommended retaining the Orange Corridor Alternative due to its numerous and significant relative benefits compared to all the other options under consideration. The resource and regulatory agencies agreed with this recommendation.

5.2.3.2 Blue Corridor Alternative

The Blue Corridor Alternative has many major constraints and does not offer a clear relative advantage to the Orange Corridor Alternative or other options under consideration and so was recommended for elimination by NCDOT. The resource and regulatory agencies agreed with this recommendation. Alternatives incorporating the Blue Corridor Alternative would cross Swift Creek downstream of the Lake Benson dam, so this option would not address the major constraint of the Orange Corridor Alternative. While alignments using the Blue Corridor Alternative have the potential to serve traffic in growing areas near Fuquay-Varina, they would be subject to many other constraints.

Options using the Blue Corridor Alternative would bisect the planned Southeast Regional Park, an unacceptable impact from Wake County's perspective as this would make further development of the park infeasible. Options using the portion of the Blue Corridor Alternative through central Holly Springs would bisect the community, incurring major community disruption impacts and a large number of relocations (**Table 5-2**). The Blue Corridor Alternative's location at the southern edge of the project study area has more potential for inducing development than options farther north because there is more undeveloped land along the study area's southern edge. The Blue Corridor Alternative is formally opposed by Wake County and has been the target of strong public opposition.

5.2.3.3 Purple Corridor Alternative

The Purple Corridor Alternative also has many major constraints without offering any key advantage to the Orange Corridor Alternative, so it too was recommended by NCDOT for elimination. The resource and regulatory agencies agreed with this recommendation. All alternatives using the Purple

Corridor Alternative would also cross Swift Creek downstream of the Lake Benson dam, so this option would not address the major constraint of the Orange Corridor Alternative. Alignments using the Purple Corridor Alternative would also have the potential to serve traffic in growing areas near Fuquay-Varina, and would also result in fewer relocations than all options other than the Orange Corridor Alternative (**Table 5-2**), but would incur numerous other constraints. The Purple Corridor Alternative would cross a portion of Middle Creek identified by Wake County as a priority for preservation and would follow a portion of the creek longitudinally. The Purple Corridor Alternative is formally opposed by Wake County and also has been the target of strong public opposition as it is adjacent to several large residential neighborhoods in Holly Springs. Similar to the Blue Corridor Alternative, because the Purple Corridor Alternative extends into the southern edge of the project study area, it also has more potential for inducing development than options farther north because there is more undeveloped land along the study area's southern edge.

All alignments including the Purple Corridor Alternative would tie into the part of the Blue Corridor Alternative bisecting the planned Southeast Regional Park. The Purple Corridor Alternative would also bisect a 95-acre park the Town of Holly Springs plans to build within the Sunset Oaks Neighborhood (Town of Holly Springs, 2007). The Town owns a portion of the planned park property and is continuing to acquire the remaining property, planning to develop the site for passive recreational uses and connection to the surrounding greenway system. The Town also plans to build soccer fields on the site.

5.2.3.4 Red Corridor Alternative

The Red Corridor Alternative has many significant constraints but has two important relative advantages. Preliminary alternatives using this corridor would require about twice as many relocations than most of the other alternatives. In addition, the Red Corridor Alternative would bisect nine large, cohesive residential neighborhoods, including Vandora Pines, Breezeway, Heather Ridge, The Village at Aversboro, and South Creek, and would indirectly affect several others, making this option highly disruptive for many Garner communities. The Red Corridor Alternative would also impact a large portion of the Greenfield South Business Park, the primary economic recruitment area for Garner and a foundation of the community's tax base. The Red Corridor Alternative would impact one proposed park facility and a proposed expansion area for another park, two Section 4(f)-applicable resources (**Section 5.3.1.4**). In addition, the Red Corridor Alternative is the only corridor that would cross the Swift Creek Critical Watershed Area. Wake County and the Town of Garner formally oppose the Red Corridor Alternative and large numbers of area residents have expressed opposition to the Red Corridor Alternative.

The Red Corridor Alternative is closer than the other corridors to I-40 and I-440 along the south side of the Raleigh area and therefore may not draw as much traffic off of the existing roadway network as would other corridors farther to the south. The Red Corridor Alternative also would not include an interchange on US 70 Business, a major thoroughfare in the Garner area, because it would cross this facility less than a mile east of an existing interchange at I-40. This may limit the ability of the Red Corridor Alternative to serve traffic needs in this area.

Despite the numerous disadvantages of the Red Corridor Alternative, it has two key relative advantages to all the other new location options. By crossing Swift Creek almost entirely above the Lake Benson dam, it poses an opportunity for avoiding impacts to the habitat of the endangered Dwarf Wedgemussel downstream of the dam. It would impact a small area of the downstream part of the Swift Creek watershed at a small tributary known as Mahler's Creek. However, heavy silting has degraded water quality in Mahler's Creek to an extent that it is unlikely to provide favorable habitat

for the Dwarf Wedgemussel. As shown in **Table 5-2**, the Preliminary Alternative using the Red Corridor Alternative would result in the lowest wetland and stream impacts of all new location alternatives under consideration.

Despite the two relative advantages of the Red Corridor Alternative, the magnitude of its disadvantages prompted NCDOT to examine its potential effects on the surrounding community in further detail. This is summarized in **Section 5.3**.

5.2.3.5 Red Modified Corridor Alternative

The Red Modified Corridor Alternative is a modification of the Red Corridor Alternative. The modification was developed in an effort to locate an alignment in the vicinity of the Red Corridor Alternative, but that could potentially avoid all direct impacts to the potential Section 4(f) properties in this area. Its primary advantage is that it completely avoids these properties. In addition, like the Red Corridor Alternative, it would cross Swift Creek almost entirely above the Lake Benson dam and pose an opportunity to avoiding impacts to Dwarf Wedgemussel habitat downstream of the dam. It would also impact Mahler's Creek, but for the reasons described in the previous section, Mahler's Creek is unlikely to provide favorable habitat for the Dwarf Wedgemussel.

The Red Modified Corridor Alternative shares all of the constraints associated with the Red Corridor Alternative except for impacts to Section 4(f) properties. It would require more than twice the number of relocations as the Orange Corridor Alternative, as shown in **Table 5-4**. It would also bisect several large, cohesive residential neighborhoods, making this option highly disruptive for many Garner communities. It would also impact a large portion of the Greenfield South Business Park, the primary economic recruitment area for Garner and a foundation of the community's tax base. This option would also cross the Swift Creek Critical Watershed Area.

Like the Red Corridor Alternative, the Red Modified Alternative is closer than other corridors to I-40 and I-440 along the south side of the Raleigh area and therefore may not draw as much traffic off of the existing roadway network as would other corridors farther to the south. The Red Modified Corridor Alternative also would not include an interchange on US 70 Business, a major thoroughfare in the Garner area, because it would cross this facility less than a mile east of an existing interchange at I-40. This may limit the ability of the Red Modified Corridor Alternative to serve traffic needs in this area.

The horizontal and vertical alignment for the Red Modified Corridor Alternative meets the current minimum design criteria for the facility. However, this alignment is undesirable because its sharp curves and steep grades would create undesirable operational conditions, particularly in less than ideal weather conditions. NCDOT is currently increasing the posted speed on already constructed sections of the 540 Outer Loop by five miles per hour. If the posted speed is similarly increased on the Complete 540 project, the alignment of the Red Modified Corridor Alternative would need to be modified to accommodate the higher operating speed. This alignment modification would shift the right-of-way for the Red Modified Corridor Alternative into the park properties it was intended to avoid, negating the primary benefit of this corridor. In addition, a higher operating speed on a facility with an undesirable minimum design would increase the concerns about undesirable operating conditions.

5.2.3.6 West of NC 55 Bypass

As described above, several potential corridors were evaluated in the area west of NC 55 Bypass as options for serving traffic in growing areas near Fuquay-Varina while minimizing the community disruption impacts of the Blue and Purple Corridor Alternatives. Numerous constraints made these options infeasible, most notably the fact that they would require construction of a new interchange on the Western Wake portion of the Triangle Expressway and abandonment of the southern end of this roadway. This would be extraordinarily costly and would also have adverse bonding implications for the existing Triangle Expressway. Therefore, NCDOT recommended elimination of these corridors and this was agreed to by the resource and regulatory agencies.

5.2.3.7 Pink Corridor Alternative

The Pink Corridor Alternative would connect the Orange Corridor Alternative to a potential crossing of I-40 well to the north of the Clayton Bypass. While this would require out of direction travel for traffic traveling from Johnston County and points south to areas in western Wake and Durham counties, it would avoid the large and complex interchange that would be created by tying the Complete 540 project into I-40 near the Clayton Bypass. With this shift, the Pink Corridor Alternative may also have potential to minimize impact to important Dwarf Wedgemussel habitat near I-40 and the Clayton Bypass. However, the Pink Corridor Alternative also would not include an interchange on US 70 Business, a major thoroughfare in the Garner area, because it would cross this facility less than a mile east of an interchange at I-40. This may limit the ability of the Pink Corridor Alternative to serve traffic needs in this area. The Pink Corridor Alternative would also cross sprayfields that are part of a City of Raleigh wastewater treatment biosolids facility area west of I-40.

While the Pink Corridor Alternative would cross Swift Creek downstream of the Lake Benson dam and would therefore not avoid the important Dwarf Wedgemussel habitat in this area, it would shift the impacts away from the Clayton Bypass area. The I-40/Clayton Bypass area is of particular concern for habitat impacts to this species and recent surveys have identified living Dwarf Wedgemussels in this area. For these reasons, shifting the impacts away from this area may offer some advantage from a habitat impact standpoint. Because of this advantage, the Pink Corridor Alternative remained under consideration. It is important to note, however, that Wake County and the Town of Garner formally oppose this Corridor Alternative due to its potential impacts on the Garner community and the surrounding area. The potential impacts of the Pink Corridor Alternative on the surrounding community are discussed in greater detail in **Section 5.3**.

5.2.3.8 Yellow Corridor Alternative

The chief advantage of the Yellow Corridor Alternative relative to the Orange Corridor Alternative is that it would separate the expressway to expressway interchanges at I-40 and the Clayton Bypass instead of requiring one large, complex interchange in this area. However, this option would have greater impacts to Swift Creek in this important Dwarf Wedgemussel habitat area, following a portion of the corridor longitudinally. Alternatives using the Yellow corridor would also incur much greater wetland impacts than corresponding alternatives using the Orange Corridor Alternative (**Table 5-2**). For these reasons, and because it would require construction of two interchanges, the NCDOT recommended the Yellow Corridor Alternative for elimination. The resource and regulatory agencies agreed with this recommendation.

5.2.3.9 Lilac Corridor Alternative

The Lilac Corridor Alternative is a new location option off the previously identified Orange Corridor Alternative that would result in lower impacts to wetlands and in particular the wetland habitat that supports Swift Creek, compared to the Orange Corridor Alternative. As shown in **Table 5-4**, it would impact 50.6 acres of wetlands, compared to the 88.1 acres of wetlands that would be impacted by the Orange Corridor Alternative. The Lilac Corridor Alternative would also avoid impacting any properties subject to Section 4(f) requirements.

Like the Orange Corridor, the Lilac Corridor Alternative crosses Swift Creek below the Lake Benson dam, an area containing known habitat for the Dwarf Wedgemussel, but impacted by development activity in recent years. For this reason, the Lilac Corridor Alternative has the potential to negatively impact habitat important for the survival of the Dwarf Wedgemussel in Wake County.

Just east of the Swift Creek Crossing, the Lilac Corridor Alternative crosses through sprayfields that are part of a City of Raleigh wastewater treatment biosolids facility area west of I-40 and would also impact a portion of one of the two 25-acre holding ponds on the property. This would impact approximately 86 acres of this 600 acre site. Backwash from the Dempsey Benton water treatment facility off NC 50 is piped to this site, stored in the holding ponds, and then sprayed on the surrounding land for infiltration. The City of Raleigh is currently preparing permits to change the operations at the site to utilize a lower spraying intensity/rate over the same area that is currently permitted for this activity. The City of Raleigh has indicated that even with the lower spraying rate there is a need for both holding ponds for water management and all available sprayfields for water distribution.

Another notable constraint of the Lilac Corridor Alternative is that it would require more relocations than any other alternative. As shown in **Table 5-4**, it would require 447 relocations, more than twice the relocations that would be required by the Orange Corridor Alternative.

Introduction of the Lilac Corridor Alternative provided additional options for examining the potential for balancing community and natural resources impacts with various combinations of the Orange Corridor and the Lilac Corridor Alternative. The alignment described in the above paragraphs connects from the Orange Corridor Alternative to the Lilac Corridor Alternative at Fanny Brown Road. A second alignment connecting the two was also developed—this alignment connects the two with a connector Segment at Sauls Road. This second alignment (connecting to Lilac at Sauls Road) creates an end-to-end alternative with slightly higher impacts to wetlands than the first alignment (connecting to Lilac at Fanny Brown Road), but has the advantage of reducing the number of relocations from 447 to 366. Like the original option, the alignment connecting to Lilac at Sauls Road would also avoid impacting any properties subject to Section 4(f) requirements. The two options share the remaining constraints: crossing Swift Creek below the Lake Benson dam and crossing the City of Raleigh wastewater treatment property.

The two variations of the Lilac Corridor Alternative are discussed further in **Section 5.6.2**.

5.2.3.10 Purple-Blue-Lilac Corridor Alternative

As explained in **Sections 5.2.2.2** and **5.2.2.3**, the Blue and Purple Corridor Alternatives have many major constraints but did not offer clear relative advantage to the Orange Corridor Alternative or other options under consideration and so were recommended for elimination. However, with the introduction of the Lilac Corridor Alternative (**Section 5.2.2.8**), the project team began to explore the

impact minimization potential of an alignment following the Purple Corridor Alternative to the Blue Corridor Alternative, then connecting to the Lilac Corridor Alternative. By avoiding much of the wetland area surrounding Swift Creek, this new connection would create an alignment that would impact 46.9 acres of wetlands, the second smallest wetland impact of all the alignments, compared to 43.7 acres for the Red Corridor Alternative.

An alignment following the Purple Corridor Alternative to the Blue Corridor Alternative to the Lilac Corridor Alternative (the “Purple-Blue-Lilac Corridor Alternative”) would require 353 relocations, resulting in a relocation impact higher than many other options. However, an alignment following the Red Corridor Alternative would result in a higher relocation impact, requiring 404 relocations.

The Purple-Blue-Lilac Corridor Alternative crosses Swift Creek below the Lake Benson dam, an area containing known habitat for the Dwarf Wedgemussel, but impacted by development activity in recent years. For this reason, this option has the potential to negatively impact habitat important for the survival of the Dwarf Wedgemussel in Wake County.

Because it includes the portion of the Lilac Corridor Alternative east of the Swift Creek crossing, this option would also cross the sprayfields that are part of a City of Raleigh wastewater treatment biosolids facility area, affecting a portion of one of the two 25-acre holding ponds on the property and impacting approximately 86 acres of this 600 acre site.

This option would follow the Blue Corridor Alternative where it bisects the planned Southeast Regional Park, an unacceptable impact from Wake County’s perspective as this would make further development of the park infeasible. It would also follow the Purple Corridor Alternative where it bisects the planned Sunset Oaks Park. In addition, because this option follows the Blue Corridor Alternative at the southern edge of the project study area, it may have more potential for inducing development than options farther north because there is more undeveloped land along the study area’s southern edge.

The Purple-Blue-Lilac Corridor Alternative is discussed further in **Section 5.6.1**.

5.2.3.11 Plum Corridor Alternative

The Plum Corridor Alternative is a modification of the previously identified Orange Corridor Alternative. The Plum Corridor Alternative includes all of the Orange Corridor Alternative except that the movements to and from the south and the west along I-40 and 540 are located on a new connector ramp system that is located south of Swift Creek and north of US 42. This route, which is in effect a spur of the Orange Corridor Alternative for some travel movements, was developed in response to a local inquiry about whether a simplified, slightly modified version of the Yellow Corridor Alternative might have the potential to reduce wetland or other environmental impacts in the area of Swift Creek.

The Plum Corridor Alternative would result in a similar magnitude of wetlands impacts (82.6 acres) as the Orange Corridor Alternative, as shown in **Table 5-4**. It would also result in more stream impacts, directly affecting 39,450 linear feet of streams compared to 36,110 linear feet for the Orange Corridor Alternative. In addition, the Plum Corridor Alternative would surround Swift Creek with roadways in an environmentally sensitive area. Like the Orange and Lilac Corridor Alternatives, the Plum Corridor Alternative crosses Swift Creek below the Lake Benson dam and therefore has the potential to negatively impact habitat important for the survival of the Dwarf Wedgemussel in Wake County.

Also like the Orange Corridor Alternative, the Plum Corridor will cross a portion of the City of Raleigh wastewater treatment sprayfields located east of the Swift Creek crossing. This impact would be approximately 11 acres at the extreme southern end of the sprayfields and would not impact either of the two 25 acre holding ponds.

The Plum Corridor Alternative would avoid impacting any properties subject to Section 4(f) requirements.

The Plum Corridor Alternative is discussed further in **Section 5.6.3**.

5.2.3.12 Additional I-40 Concept

One additional suggestion for a corridor modification was made at the resource and regulatory agency meeting on November 2, 2010. Because the Pink and Green corridors parallel I-40, the suggestion was to use the Orange Corridor Alternative from the west to I-40 and the Red Corridor Alternative from I-40 to the east to connect with the Green corridor. I-40 would be improved and widened between the Orange and Red Corridor Alternatives, similar to the Hybrid alternative. This modification was added to the corridor alternatives under consideration.

Evaluation of this concept showed that it offered few advantages over other options. Like the Red Corridor Alternative, it would also impact a large portion of the Greenfield South Business Park, the primary economic recruitment area for Garner and a foundation of the community's tax base. It would also impact Springfield Baptist Church on Auburn-Knightdale Road. However, unlike the Red Corridor Alternative, it would cross Swift Creek downstream of the Lake Benson dam. Therefore, it would not provide an opportunity for avoiding impacts to the habitat of the endangered Dwarf Wedgemussel. Because it did not provide relative advantages to other options, NCDOT recommended elimination of this concept. At the resource and regulatory agency meeting on January 20, 2011, the agencies agreed with this recommendation.

5.2.3.13 Forest Green Corridor Alternative

Preliminary Study Alternatives using the Red Corridor Alternative, Pink Corridor Alternative, or the I-40 improvement option described would all impact the Greenfield South Business Park in Garner and Springfield Baptist Church on Auburn-Knightdale Road. The Forest Green Corridor Alternative was added into consideration to minimize community disruption in this area by following an alignment adjacent to I-40 but turning eastward south of White Oak Road to avoid the Greenfield South Business Park and Springfield Baptist Church areas. The Forest Green Corridor Alternative would connect to the Green Corridor Alternative near Raynor Road. Despite avoiding community impacts to areas north of White Oak Road, an alignment using the Forest Green Corridor Alternative would result in more than twice as many relocations in the Phase II area as options using the Green, Tan or Brown Corridor Alternatives. It would also result in greater wetland and stream impacts than the other options.

At the resource and regulatory agency meeting on January 20, 2011, NCDOT recommended elimination of the Forest Green Corridor Alternative because it would offer minimal advantages over other options while resulting in many more relocations and greater wetland and stream impacts than other options. The resource and regulatory agencies agreed with this recommendation.

5.2.3.14 Green Corridor Alternative

As described above, the Green Corridor Alternative would bisect the Randleigh Farm planned development, an unfavorable impact from the perspective of Wake County and the City of Raleigh. It would also potentially impact a guying wire for a large communications tower near US 70 Business. Its main advantages are that it would require fewer relocations than the Tan Corridor Alternative (**Table 5-3**), avoiding disruption of neighborhoods along the Tan Corridor Alternative, such as the Preserve at Long Branch Farm, and that it would avoid the Clemmons State Educational Forest, a potential Section 4(f) resource. Because this is an important advantage, NCDOT recommended retaining the Green Corridor Alternative. At the resource and regulatory agency meeting on November 2, 2010, the agencies agreed with this recommendation.

5.2.3.14 Tan Corridor Alternative

The Tan Corridor Alternative would lessen, but not avoid, impacts to the Randleigh Farm property, an advantage over the Green Corridor Alternative from the perspective of Wake County and the City of Raleigh. It would also avoid the large communications tower that would be potentially impacted by the Green Corridor Alternative. However, it would require more relocations than the Green Corridor Alternative (**Table 5-3**) and would directly impact residential neighborhoods including the Preserve at Long Branch Farm. The Tan Corridor Alternative would also impact the northwest corner of property owned by the State intended as expansion property for the Clemmons State Educational Forest, a potential Section 4(f) resource. Despite these drawbacks from a community impacts perspective, the Tan Corridor Alternative was initially retained due to its minimization of impacts on Randleigh Farm and its avoidance of impacts to a large communications tower near US 70 Business.

The Raleigh City Council and the Boards of Commissioners of Wake and Johnston counties have all requested that NCDOT eliminate the Tan Corridor Alternative from further consideration due to concerns about community impacts. The Capital Area MPO has also passed a resolution opposing the Tan Corridor Alternative. There was also public and local government concern about potential impacts of the southern portion of the Tan Corridor Alternative on Good Samaritan Baptist Church, near the Wake/Johnston County line. The northern portion of the Tan Corridor Alternative, which begins about one mile north of US 70 Business, was recommended by NCDOT to be retained for detailed study despite its drawbacks because it does provide an option for minimizing impacts to Randleigh Farm while avoiding two public facilities farther to the east (a sprayfield area for the City of Raleigh's Neuse River Wastewater Treatment Plant biosolids facility and a Wake County/City of Raleigh police training center on Battle Bridge Road). However, the southern portion of the Tan Corridor Alternative (south of US 70 Business) was recommended by NCDOT to be eliminated because it would impact Good Samaritan Baptist Church while not providing any relative advantage over other options. The southern portion of the Brown Corridor Alternative (see below) can connect to the remaining portion of the Tan Corridor Alternative; alignments using the remaining portion of the Tan Corridor Alternative would follow that path.

5.2.3.16 Brown Corridor Alternative

The Brown Corridor Alternative would completely avoid impacts to the Randleigh Farm property and to the large communications tower that might be impacted by the Green Corridor Alternative. It would require the fewest relocations of any of the Corridor Alternatives in the Phase II area. (**Table 5-3**) It would also cross the Neuse River at a more favorable location than the Green and Tan Corridor Alternatives: the Green and Tan Corridor Alternatives cross a sharp curve of the Neuse somewhat diagonally while the Brown Corridor Alternative perpendicularly crosses a narrower, straighter

segment of the Neuse River. The Brown Corridor Alternative interchange on Auburn-Knightdale Road would also be at a more favorable location than the Green/Tan interchange on Auburn-Knightdale Road: the Brown Corridor Alternative crosses Auburn-Knightdale in a more perpendicular orientation and the interchange would have a smaller footprint. The primary disadvantage of the Brown Corridor Alternative is that it would directly impact two public facilities: a sprayfield area for the City of Raleigh's Neuse River Wastewater Treatment Plant biosolids facility and a Wake County/City of Raleigh police training center on Battle Bridge Road. The Brown Corridor Alternative would also impact the northwest corner of property owned by the State intended as expansion property for the Clemmons State Educational Forest, a potential Section 4(f) resource. Because of its potential advantages, NCDOT recommended the Brown Corridor Alternative for detailed study.

5.2.3.17 Teal Corridor Alternative

The Teal Corridor Alternative would completely avoid impacts to the Randleigh Farm property and it would also avoid impacts to the Clemmons State Educational Forest. As the Teal Corridor Alternative ties into the Brown Corridor Alternative south of the Neuse River, it would also benefit from two of the main advantages of the Brown Corridor Alternative: a more favorable Neuse River Crossing and a more favorable Auburn-Knightdale Road interchange than the Green and Tan Corridor Alternatives. However, the Teal Corridor Alternative would also lead to the same primary disadvantage of the Brown Corridor Alternative as it would also impact the two public facilities farther to the east (a sprayfield area for the City of Raleigh's Neuse River Wastewater Treatment Plant biosolids facility and a Wake County/City of Raleigh police training center on Battle Bridge Road). The Teal Corridor Alternative would also directly impact a guying wire for a large communications tower near US 70 Business. Because of its potential advantages, NCDOT recommended the Teal Corridor Alternative for detailed study.

5.2.3.18 Mint Green Corridor Alternative

The Mint Green Corridor Alternative would have similar benefits and disadvantages as the Green Corridor Alternative with one important exception. By crossing the Randleigh Farm property east of the Green Corridor Alternative and closer to the property's eastern boundary, it would leave a larger area of the property intact. Like the Green Corridor Alternative, the Mint Green Corridor Alternative would avoid the Clemmons State Educational Forest but would potentially impact a guying wire for a large communications tower near US 70 Business. The Mint Green Corridor Alternative represents a compromise between the Green and Tan Corridor Alternatives—it would reduce impacts to Randleigh Farm relative to the Green Corridor Alternative while reducing the number of relocations compared to the Tan Corridor Alternative (**Table 5-3**). For these reasons, NCDOT recommended the Mint Green Corridor Alternative for detailed study.

5.2.3.19 Grey Corridor Alternative

The Grey Corridor Alternative is the only Phase II option that would completely avoid the Randleigh Farm property. It would extend into Johnston County, giving it the potential to serve traffic in growing areas of Clayton and Johnston County. However, this option would result in an alignment about four miles longer than the Green or Tan Corridor Alternatives (**Table 5-3**), making it much more costly to construct. By extending into the far southeastern corner of the project study area, the Grey Corridor Alternative may also have greater potential for inducing development. Wake County staff did not support this option due to its longer distance and potential for induced development and the City of Raleigh maintained a neutral perspective. Given its notable constraints, the Grey Corridor

Alternative was recommended by NCDOT to be eliminated. The resource and regulatory agencies agreed with this recommendation.

5.2.3.20 Hybrid Alternative 3

Over 700 homes and businesses are within the 300-foot conceptual right-of-way for Hybrid Alternative 3, nearly twice as many as any of the other alternatives. As most of the required relocations under this alternative would be structures along the existing roadways that would be widened, it would be difficult to minimize impacts to them. In addition, this option would not offer a reduction in direct impacts to wetlands and streams. In fact, 97 acres of wetlands lie within the 300-foot conceptual right-of-way for this alternative, the most of any alternative. Because it would require disproportionate numbers of relocations and would impact a large amount of wetlands, while not offering any offsetting advantage, the Hybrid Alternative 3 was recommended by NCDOT to be eliminated. The resource and regulatory agencies agreed with this recommendation.

5.2.4 Conclusions

Based on the results of the third tier screening, along with consideration of public comments and the input of the resource and regulatory agencies at resource and regulatory agency meetings in November 2010 and January 2011, NCDOT came to the following conclusions and recommendations:

- Eliminate the Blue, Purple, Yellow and Grey corridors.
- Retain the Orange Corridor Alternative and the Green Corridor Alternative as Detailed Study Alternatives.
- Conduct further studies on the Red and Pink Corridor Alternatives to determine if they should be retained.
- Eliminate the Additional I-40 Concept and the Forest Green Corridor Alternatives.
- Retain the Tan (northern portion), Brown, Teal and Mint Green Corridor Alternatives as Detailed Study Alternatives.
- Eliminate the southern portion of the Tan Corridor Alternative.
- Eliminate the Hybrid Alternative 3.

There is a lack of other reasonable options for new location alternatives in the project study area, as confirmed by local government, agency and public input.

As described in **Section 5.2.2**, two new additional Corridor Alternatives were developed in an attempt to minimize wetland impacts while also minimizing community impacts, particularly in comparison to the Red Corridor Alternative. These new options, the Lilac and Plum Corridor Alternatives, were evaluated further to determine if they should be retained for detailed study. The location of the Lilac Corridor Alternative is such that previously eliminated corridor segments could be connected to it, creating new routes with additional potential for balancing natural resource and community impacts. The previously eliminated Purple Corridor Alternative, connecting to the Blue Corridor Alternative, emerged as an option for connecting to the Lilac Corridor Alternative to reduce wetland impacts. This option is known as the Purple-Blue-Lilac Corridor Alternative. The evaluation of these new options is described in **Section 5.6**.

5.3 ADDITIONAL STUDY OF RED AND PINK CORRIDOR ALTERNATIVES

As described in the previous section, both the Red and Pink Corridor Alternatives have numerous disadvantages. However, each has potential advantages making further study of these options

important for determining whether to eliminate either of these options or retain as Detailed Study Alternatives.

5.3.1 Red Corridor Alternative

As described in **Section 5.2.3.4**, the Red Corridor Alternative has numerous disadvantages, but two advantages. The Red Corridor Alternative appears to be the best option for avoiding impacts to important Dwarf Wedgemussel habitat downstream of the Lake Benson dam and therefore has the most potential to avoid negative impacts to this species. Field surveys conducted in the fall of 2010 identified Dwarf Wedgemussel individuals in Swift Creek near I-40, but have not identified any individuals above the Lake Benson dam or in Mahler’s Creek, the small portion of the downstream Swift Creek watershed within the Red Corridor Alternative. These findings support the US Fish and Wildlife Service (USFWS) opinion that the Red Corridor Alternative would provide an avoidance alternative to Dwarf Wedgemussel impacts.

As shown in **Table 5-2**, the Preliminary Study Alternative using the Red Corridor Alternative would result in the lowest total impacts to wetlands and streams of all new location alternatives under consideration. This is another relative advantage of the Red Corridor Alternative.

Despite these advantages of the Red Corridor Alternative, it is the opinion of NCDOT that the numerous disadvantages of the Red Corridor Alternative are so extensive and significant that they outweigh this advantage. These disadvantages are detailed below.

5.3.1.1 Does Not Serve Traffic Needs

Using an approved travel demand model (TransCAD Triangle Regional Model 2008, version 4), future traffic volumes were predicted for 2035, using various Build scenarios. A detailed description of these forecasts is provided in the *Southern and Eastern Wake Expressway Final Traffic Forecast Report* and the *Southern and Eastern Wake Freeway Final 2008 Existing, 2011 and 2035 No-Build Traffic Capacity Analysis Report*, both prepared by HNTB in 2009. **Table 5-6** compares 2035 traffic volumes for the Complete 540 project under two scenarios—constructing the project using the Orange Corridor Alternative completely and constructing it using the Orange and Red Corridor Alternatives. For most segments of the Complete 540 project, traffic volumes would be lower using the Red Corridor Alternative than by using the Orange Corridor Alternative completely.

Table 5-6: Forecast 2035 Traffic Volumes - Orange Corridor versus Red Corridor

Segment	2035 Traffic Volume Orange Corridor	2035 Traffic Volume Red Corridor	Percent Difference
NC 55 Bypass to Holly Springs Rd	44,700	43,800	-2.0
Holly Springs Rd to Bells Lake Rd	59,200	57,500	-2.9
Bells Lake Rd to US 401	69,800	57,400	-17.8
US 401 to Old Stage Rd	69,900	51,800	-25.9
Old Stage Rd to NC 50	55,000	57,600	+4.7
NC 50 to I-40	50,300	51,200	+1.8
I-40 to US 70	51,300	54,300	+5.8
US 70 to Rock Quarry Rd	63,200	54,300	-14.1
Rock Quarry Rd to Auburn-Knightdale Rd	67,100	67,100	0.0
Auburn-Knightdale Rd to Poole Rd	68,800	68,200	-0.9
Poole Rd to US 64/US 264 Bypass	88,900	88,500	-0.4

Sources: *Southern and Eastern Wake Expressway Final Traffic Forecast Report* (HNTB, 2009), *Southern and Eastern Wake Freeway Final 2008 Existing, 2011 and 2035 No-Build Traffic Capacity Analysis Report* (HNTB, 2009)

In addition to carrying less traffic than a Preliminary Study Alternative using the Orange Corridor Alternative, a Preliminary Study Alternative using the Red Corridor Alternative would draw less traffic off many segments of the existing roadway network that currently or are forecast to experience unacceptable levels of service (LOS) of E or F. These segments include:

- I-40 between I-440 and NC 42 (10.4 miles long) – Volumes on these segments would be up to 27 percent greater using the Red Corridor Alternative.
- Ten-Ten Road (SR 1010) between Graham Newton Road (SR 1386) and Sauls Road (SR 2727) (6.9 miles long) – Volumes would be up to 115 percent higher using the Red Corridor Alternative.
- NC 42 between US 401 and Cornwallis Road (13.3 miles long) – Volumes would be up to 45 percent higher using the Red Corridor Alternative.
- NC 50 between Complete 540 and Timber Drive (SR 1443) (4.6 miles long) – Volumes would be up to 50 percent higher using the Red Corridor Alternative.
- US 401 between Broad Street (SR 3363) and Sunset Lake Road (SR 1301) (0.8 miles long) – Volumes would be up to 11 percent higher using the Red Corridor Alternative.

The Complete 540 project would draw less traffic off of the existing roadway network using the Red corridor, leading to higher traffic volumes on already congested roadways. The Red corridor would be closer to I-440 than the Orange Corridor Alternative, which would make the Complete 540 project less attractive as an alternative travel route than the Orange Corridor Alternative because travelers would be more likely to continue to choose I-440 as a travel route. The Red corridor would perform worse than the Orange Corridor Alternative in easing congestion on existing roadways, making it less able to meet the project's traffic needs.

5.3.1.2 Disproportionate Community Impacts

The Preliminary Study Alternative formed by connecting the entire length of the Red Corridor Alternative to the Green Corridor Alternative in the Phase II area would result in the relocation of 404 structures (based on impacts within the 300-foot conceptual right-of-way), which is 75 percent to 100 percent more relocations than any other Preliminary Study Alternative evaluated except the Preliminary Study Alternative that includes the Forest Green Corridor Alternative. The Red Corridor Alternative would account for 253 relocations, 63 percent of the total relocations for the Preliminary Study Alternative even though the Red Corridor Alternative only accounts for 40 percent of its total length.

In addition to requiring a large number of structures to be relocated, the Red Corridor Alternative would also bisect nine residential neighborhoods in Garner, significantly impacting community cohesion in these neighborhoods. These neighborhoods include Vandora Pines, Breezeway, Breezeway West, Breezeway East, Heather Hills, Heather Ridge, The Village at Aversboro, Van Story Hills, and Forest Landing. Four additional neighborhoods are adjacent to the Red Corridor Alternative and could also face direct and indirect impacts: Lakewood, Summers Walk, Heather Woods, and Camelot. Nearly all of the residential neighborhoods between Old Stage Road (SR 1006) and NC 50 in Garner would be negatively impacted by the Red Corridor Alternative.

In addition to affecting numerous residential neighborhoods in Garner, the Red Corridor Alternative would also have the effect of dividing the town. The Red Corridor Alternative would form a significant physical barrier between older parts of Garner to the north, and newer residential subdivisions to the south. Lower-income areas with higher concentrations of minority residents would

be north of the Red Corridor Alternative and higher-income areas with lower concentrations of minority residents would be south of the Red Corridor Alternative. This effect is particularly significant because many Garner residents view US 70 Business, constructed in the 1950s, as having had the same effect of physically dividing the Garner community. Many residents and local officials have expressed great concern that the Red Corridor Alternative could also physically divide the community.

The Red Corridor Alternative would also impact notable community facilities in the Garner area. Springfield Baptist Church, on Auburn-Knightdale Road just north of US 70 Business, serves a large, predominantly black congregation. The congregation was founded just after the end of the Civil War and has been an important foundation of the community in this area. The church owns about 40 acres of land along Auburn-Knightdale Road, and the Red corridor would impact approximately 12 acres of undeveloped land along the southern and eastern edges of the property. An alignment within the Red Corridor Alternative would likely avoid all of the buildings, parking areas, and known gravesites on the property, but the church has plans to build a school, a community center, and housing on the areas that would be impacted by the Red Corridor Alternative.

The YMCA of Garner owns a tract of land on Aversboro Road (SR 2710), directly within the Red Corridor Alternative, and plans to develop new facilities on the site. The Red Corridor Alternative would require acquisition of a portion of this site. On October 22, 2010, the YMCA of Garner and the YMCA of the Triangle sent NCDOT a letter expressing concern about impacts of the Red Corridor Alternative on this site and opposing the Red Corridor Alternative (**Appendix C**).

5.3.1.3 Impacts to Swift Creek Critical Watershed Area

Swift Creek within the project study area is designated by the North Carolina Division of Water Resources (NCDWR) as a Water Supply Watershed-III, a designation given to waters used as a source for drinking water. In the late 1980s and early 1990s, Wake County, Raleigh, Cary, Garner and Apex, in conjunction with DWQ, jointly developed and adopted a Land Management Plan for the Swift Creek watershed area as a guide to managing development in this Water Supply Watershed. The Wake County Board of Commissioners officially adopted the Swift Creek Land Management Plan in April 1990. The Plan designates development restrictions for areas within the watershed. It also designates a Critical Watershed Area, the areas within one-half mile of Swift Creek and its reservoirs. Development is more tightly restricted within the Critical Watershed Area.

The Red Corridor Alternative is the only option under consideration that would impact the Swift Creek Critical Watershed Area, crossing the Critical Area east of US 401. As shown in **Table 5-2**, it would impact 10.6 acres of the Critical Area, based on the 300-foot conceptual right-of-way. Local officials are concerned that by impacting this area, the Red Corridor Alternative has the potential for greater impacts to the local drinking water supply than other project options under consideration.

5.3.1.4 Impacts to Section 4(f)-Applicable Resources

Many of Garner's existing and planned parks, recreational facilities, and open space areas are located in the vicinity of the Red Corridor Alternative. The Red Corridor Alternative would directly impact two of these existing and planned facilities. These facilities, along with other parks and recreational facilities in this area, are shown on **Figure 5-3**. All the parks and recreational facilities shown on **Figure 5-3** are included in the *Town of Garner Comprehensive Parks and Recreation, Open Space and Greenways Master Plan*, adopted on June 4, 2007. Property records showing public ownership of each of these parks are in **Appendix G**. A statement of significance from the Town of Garner,

explaining the primary use of each property and the significance of each property to town recreational needs and plans, is in **Appendix H**.

- **White Deer Park** – The town opened this 96-acre nature park and environmental education center in November 2009. The park features five picnic shelters, two playgrounds, two miles of paved trails and a 2,500 square foot nature center; it is the largest municipal park in Garner. Based on the available information, White Deer Park is eligible for protection under Section 4(f) of the Department of Transportation Act of 1966 because:
 - it is in public ownership by the Town of Garner,
 - it permits visitation by the general public at any time during the normal operating hours of the facility,
 - it has no fees associated with its use, other than rental fees for the picnic shelters and nature center,
 - its major purpose and function is for recreational use,
 - it is included in Garner’s Comprehensive Parks Master Plan, and
 - it is identified as a significant recreational resource by the Town of Garner.

The Red Corridor Alternative extends across the northern edge of White Deer Park, but an alignment could be developed within the 1,000-foot wide corridor that would avoid directly impacting the existing park.

Planned Expansion Area – The town owns a 35-acre parcel adjacent to the White Deer Park property and has plans to expand White Deer Park into this parcel, although no development has taken place. When the town purchased this adjacent parcel in 2006, the Wake County deed transfer included a stipulation that the parcel must be developed for use as a park and community center. The Comprehensive Parks Master Plan recommends continued design and implementation of planned expansions of this parcel, along with the existing 96-acre White Deer Park parcel and Thompson Road Park. The Plan also recommends further development of this parcel, in conjunction with the existing 96-acre White Deer Park parcel, with amenities such as signage, nature trails, visual accesses and overlooks, wildlife viewing stations and birding trails, picnic shelters, a new fishing pier, and boat access to water bodies. The Plan also discusses the possibility of shifting a planned community arts center from the 96-acre White Deer Park parcel to the expansion parcel. Based on the available information, the White Deer expansion parcel is eligible for protection under Section 4(f) because it:

- is in public ownership by the Town of Garner,
- will permit visitation by the general public at any time during the normal operating hours of the facility,
- will have no fees associated with its use, other than rental fees for amenities such as picnic shelters,
- is primarily intended for recreational use,
- is included in Garner’s Comprehensive Parks Master Plan, and
- has been formally designated and determined to be significant for park and recreational purposes.

A conceptual 300-foot right-of-way within the Red Corridor Alternative would directly impact approximately nine acres within this expansion parcel and, as described below, it would be very difficult to shift the corridor without directly impacting one of the other potential Section 4(f) resources in this area. Even if an alignment were shifted to either the northern or southern edge of the parcel, the impacts would completely span the parcel

from west to east, a distance of about a quarter of a mile. This would place a significant constraint on development of the parcel with the intended uses described above.

- **Bryan Road Nature Park** – The town has owned this 20-acre site since 1989 and has plans to develop it with an environmental education center. When the town purchased this parcel, the Wake County deed transfer included a stipulation that the parcel must be developed as a public nature park. The town has also proposed the Mahler’s Creek Greenway to run north to south through this site. The Comprehensive Parks Master Plan states that the town should pursue funding for completion of a feasibility and easement and acquisition study. The Plan also states that scenic passive recreation opportunities should be evaluated for the Bryan Road Nature Park site in conjunction with development of Mahler’s Creek Greenway. Based on the available information, Bryan Road Nature Park is eligible for protection under Section 4(f) because:
 - it is in public ownership by the Town of Garner,
 - it will permit visitation by the general public at any time during the normal operating hours of the facility,
 - it will have no fees associated with its use, other than rental fees for the environmental education center,
 - its major purpose and function will be for recreational use,
 - it is included in Garner’s Comprehensive Parks Master Plan, and
 - it is identified as a significant recreational resource by the Town of Garner.

A conceptual 300-foot right-of-way within the Red Corridor Alternative would bisect this Section 4(f) resource, directly impacting approximately four acres and making it difficult to develop a portion of it with its intended uses. As described below, shifting the corridor would be constrained by the location of another potential Section 4(f) resource to the south (Centennial Park). The impacts would completely span the parcel from west to east, placing a significant constraint on development of the parcel with the intended uses described above.

As shown on **Figure 5-3**, there are four other Town of Garner parks and recreational facilities in the vicinity of the Red Corridor Alternative. These are:

- **Thompson Road Park** – The Thompson Road Park is an approximately 13-acre park featuring public athletic practice facilities for a variety of sports. Thompson Road park is just south of the Red Corridor Alternative.
- **Lake Benson Park** – Lake Benson Park is an approximately 63-acre park featuring a walking trail (1.8 miles), and accommodating a variety of activities from family gatherings at the park’s picnic shelters to townwide special events at the park’s 50-seat amphitheater. Fishing and boat rentals are also available at the Lake Benson Boat House. Lake Benson Park is about ½ mile south of the Red Corridor Alternative.
- **South Garner Park** – The South Garner Park is an approximately 34-acre park located in the Heather Hills subdivision. This park has three softball fields, a multipurpose field, tennis courts, a hiking trail (.44 miles) and a large playground. South Garner Park is just north of the Red Corridor Alternative.

- **Centennial Park** – Centennial Park is a 10-acre park featuring two soccer fields, a picnic shelter, playground and a paved walking trail. There is also a public shelter with a seating capacity of 50 people. Centennial Park is south of the Red Corridor Alternative.

Based on the available information, these properties are eligible for protection under Section 4(f) because:

- they are in public ownership by the Town of Garner,
- they permit visitation by the general public at any time during the normal operating hours of the facility,
- have no fees associated with its use, other than rental fees for amenities such as picnic shelters,
- their major purpose and function is for recreational use,
- they are included in Garner’s Comprehensive Parks Master Plan, and
- they are identified as significant recreational resources by the Town of Garner.

South Garner Park, Thompson Road Park, and Lake Benson Park, together with White Deer Park and its expansion area, form a linear chain of recreational resources. The town’s Comprehensive Parks Master Plan underscores the value placed on maintaining connections between these resources by encouraging the development of trails and paths between them. Likewise, the planned Bryan Road Nature Park is intended to connect to Centennial Park via the Mahler’s Creek Greenway. Disruption of these connections would be a negative impact to the town’s overall plans for recreational facilities in this area.

As **Figure 5-3** demonstrates, the close proximity of the park and recreational facilities described above limit the ability to shift the Red Corridor Alternative to avoid impacting any potential Section 4(f) resources. While there is non-park space between South Garner Park and the White Deer Park expansion area, it would not be prudent to shift the alignment into this space while also avoiding the adjacent Timber Drive Elementary School. Such a shift would create a less than desirable horizontal alignment for the expressway with multiple reverse curves on bridges. It would also require two crossings of Timber Drive using grade separations, which would raise the vertical alignment, resulting in additional impacts to Heather Springs and Heather Hills subdivisions. Additionally, the expressway right-of-way would sever the main entrances to multiple subdivisions located just north of Timber Drive, creating a need to develop costly service road alignments in order to reestablish the subdivision entrances. Alignment shifts to the Red Corridor Alternative to avoid the planned Bryan Road Nature Park are also not prudent due to the presence of development along NC 50. Shifting the Red Corridor Alternative south between the planned Bryan Road Nature Park and Centennial Park would introduce undesirable reverse curves for the expressway alignment in the vicinity of an NC 50 interchange. Such a shift would result in additional impacts to a cemetery just north of Centennial Park and additional impacts to both South Creek and Everwood subdivisions.

Section 4(f) of the Department of Transportation Act of 1966 states that no public park or recreation lands can be used for highway purposes unless there are no feasible and prudent alternatives. The Orange Corridor Alternative provides a feasible and prudent alternative to the Red Corridor Alternative. Because another feasible and prudent alternative is available, the Red Corridor Alternative is determined not to be a feasible and prudent alternative under Section 4(f) considerations.

5.3.1.5 Negative Impacts to Local Economic Base

The Greenfield South Business Park is located in Garner between I-40 and US 70 Business; its location is shown on **Figure 5-4**. This 416-acre commercial and industrial development is Garner’s

primary industrial recruitment area and is a foundation of the town's local employment base. The Red Corridor Alternative would extend across Greenfield South, between I-40 and US 70 Business, requiring acquisition of 26 lots (in eight parcels) within the Business Park. A conceptual 300-foot wide right-of-way would directly impact approximately 44 acres of the total 416 acres in the Business Park. The Town of Garner estimates that these 26 lots have a total Wake County tax value of over \$30 million and would therefore decrease its tax base by over \$30 million. Garner's current Economic Development Policy, as outlined in the town's 2006 *Comprehensive Growth Plan*, emphasizes the need to expand the town's tax base and to achieve a more balanced mix of non-residential and residential development by expanding non-residential uses. By eliminating a substantial area of land targeted for commercial and industrial development, the Red Corridor Alternative would conflict with this goal.

5.3.1.6 Opposed by Local Governments and Local Community

On October 4, 2010, the Garner Town Council passed a resolution supporting the construction of the project in the Orange Corridor Alternative and opposing selection of the Red Corridor Alternative. On October 18, 2010, the Wake County Board of Commissioners passed a resolution supporting construction of the project in the Orange Corridor Alternative and opposing several other corridors, including the Red Corridor Alternative. On October 20, 2010, the Town of Garner sent a letter listing concerns about the Red and Pink Corridor Alternatives and requesting their elimination. The reasons cited related to parks, recreational facilities, orderly growth, planned industrial development, community cohesion, water quality, access, and neighborhood impacts. The letter also indicated the town's strong support for the Orange Corridor Alternative. Following this letter, the Town of Garner also prepared a video "visual letter" that detailed the same concerns outlined in the letter. On November 30, 2010, North Carolina General Assembly's Garner delegation, including two State Representatives and two State Senators, submitted a letter asking NCDOT to eliminate the Red Corridor Alternative from further consideration. This letter cited potential negative impacts to Garner neighborhoods, the local tax base, and parks and other local facilities. On March 16, 2011, the Capital Area MPO passed a resolution opposing the Red Corridor Alternative. Copies of each of the resolutions are in **Appendix B** and copies of the letters are in **Appendix C**.

The Red Corridor Alternative is also widely opposed by local residents. The Town of Garner hosted a public meeting on November 17, 2010, to discuss the Red Corridor Alternative. Over 1,000 local residents attended the meeting, with many attendees vocally expressing their opposition to the Red Corridor Alternative. Town residents have been circulating a petition opposing the Red Corridor Alternative; to date, 356 people have signed the petition. Springfield Baptist Church also circulated a petition opposing the Red Corridor Alternative; 1,096 members of the church congregation signed this petition. NCDOT received an additional 970 letters from members of the Springfield Baptist Church expressing opposition to the Red Corridor Alternative. Several communities in the vicinity of the Red Corridor Alternative have also circulated petitions opposing it: The Village at Aversboro, Ridgebrook, Ridgebrook Bluffs, and Westbury (**Section 6.2.4**). To date, local residents have also submitted over 650 e-mail comments, letters, and telephone hotline comments opposing the Red Corridor Alternative.

5.3.2 Pink Corridor Alternative

As described in **Section 5.2.3.6**, the Pink Corridor Alternative may provide some opportunity to minimize impacts to the important Dwarf Wedgemussel habitat near I-40 and the Clayton Bypass. Despite this important advantage of the Pink Corridor Alternative, it is the opinion of NCDOT that numerous disadvantages of the Pink Corridor Alternative outweigh this possible advantage. These disadvantages are detailed below.

5.3.2.1 Does Not Serve Traffic Needs

As is the case for the Red Corridor Alternative, alternative scenarios using the Pink Corridor Alternative would not serve project study area traffic needs, particularly when compared to scenarios using the Orange Corridor Alternative. **Table 5-7** compares 2035 traffic volumes for Complete 540 for these two scenarios. For all segments of Complete 540, traffic volumes would be lower using the Pink Corridor Alternative than the Orange Corridor Alternative. Between Old Stage Road and I-40, a distance of 8.7 miles, volumes would be substantially lower for the Pink corridor scenario.

Table 5-7: Forecast 2035 Traffic Volumes – Orange Corridor versus Pink Corridor

Segment	2035 Traffic Volume Orange Corridor	2035 Traffic Volume Pink Corridor	Percent Difference
NC 55 Bypass to Holly Springs Rd	44,700	43,900	-1.8
Holly Springs Rd to Bells Lake Rd	59,200	57,700	-2.5
Bells Lake Rd to US 401	69,800	69,300	-0.7
US 401 to Old Stage Rd	69,900	65,900	-5.7
Old Stage Rd to NC 50	55,000	43,700	-20.5
NC 50 to I-40	50,300	29,800	-40.8
I-40 to US 70	51,300	45,500	-11.3
US 70 to Rock Quarry Rd	63,200	45,500	-28.0
Rock Quarry Rd to Auburn-Knightdale Rd	67,100	62,400	-7.0
Auburn-Knightdale Rd to Poole Rd	68,800	64,900	-5.7
Poole Rd to US 64/US 264 Bypass	88,900	85,400	-3.9

Sources: *Southern and Eastern Wake Expressway Final Traffic Forecast Report* (HNTB, 2009), *Southern and Eastern Wake Freeway Final 2008 Existing, 2011 and 2035 No-Build Traffic Capacity Analysis Report* (HNTB, 2009)

The Pink Corridor Alternative also would draw less traffic off many segments of the existing roadway network that currently or are forecast to experience unacceptable levels of service (LOS) of E or F. These segments include:

- I-40 between NC 54 and Complete 540 (26.0 miles long) – Volumes on these segments would be up to 23 percent greater under the Pink Corridor Alternative.
- Ten-Ten Road between US 401 and Rand Road (3.1 miles long) – Volumes would be up to 26 percent higher under the Pink Corridor Alternative.
- NC 42 between US 401 and Cornwallis Road (13.3 miles long) – Volumes would be up to 43 percent higher under the Pink Corridor Alternative.
- NC 50 between Rand Road and New Rand Road (2.1 miles long) – Volumes would be up to 11 percent higher under the Pink Corridor Alternative.

The Pink Corridor Alternative would create out of direction travel for many potential users of Complete 540. It would connect the Orange Corridor Alternative, which runs mainly east-west, to the Garner area via a sharp northern swing, bypassing growing areas around Clayton. To travel north from Johnston County and points south to use Complete 540 to reach areas north and west of Raleigh, such as RTP, drivers would have to travel north on I-40 to the Southeast Extension, then back toward Johnston County, a distance of 7.6 miles. In contrast, the distance between these points along the Orange Corridor Alternative is 2.2 miles. The Complete 540 project would draw less traffic off of the existing roadway network under the Pink corridor scenario, leading to higher traffic volumes on already congested roadways. The Pink Corridor Alternative is less likely to ease congestion on existing roadways than the Orange Corridor Alternative, making it less likely to meet the project's traffic needs.

5.3.2.2 Negative Impacts to Local Economic Base

The Pink Corridor Alternative would have similar impacts to the Greenfield South Business Park as the Red Corridor Alternative. The Pink Corridor Alternative would require acquisition of 41 acres within the Business Park, an area with a tax value of over \$30 million. The Town of Garner estimates that the loss of this area would decrease its tax base by over \$30 million. Garner's current Economic Development Policy, as outlined in the town's 2006 Comprehensive Growth Plan, emphasizes the need to expand the town's tax base and to achieve a more balanced mix of non-residential and residential development by expanding non-residential uses. By eliminating a substantial area of land targeted for commercial and industrial development, the Pink Corridor Alternative would conflict with this goal.

5.3.2.3 Negative Impacts to Local Wastewater Treatment Facility

The Pink Corridor Alternative extends through a 595-acre wastewater treatment biosolids facility located just south of the Garner town limits. This area includes large wastewater treatment sprayfields. Constructing the Complete 540 project along the Pink Corridor Alternative would result in the loss of 44 acres of the sprayfield area. This would decrease the operational capacity of the site.

5.3.2.4 Negative Impacts to Proposed School Site

In 2008, the Wake County Board of Education purchased a 59-acre site on New Bethel Church Road west of I-40 as the location of a future high school. Rapid growth in County school enrollment continues to put increasing strain on existing school facilities while rapid land development leads to dwindling opportunities for locating new schools, particularly high schools, which require large sites. The Pink Corridor Alternative would extend along the western boundary of the future high school site on New Bethel Church Road, impacting 11 acres of this property. It is possible that this potential impact could affect the ability to develop the site with a high school, forcing the Board of Education to locate a suitable alternative site for the school. As Wake County becomes increasingly developed, it has become harder for the Board of Education to identify suitable new school sites.

5.3.2.5 Opposed by Local Governments and Local Community

On October 18, 2010, the Wake County Board of Commissioners passed a resolution supporting construction of the project in the Orange Corridor Alternative and opposing several other corridors, including the Pink Corridor Alternative. On October 20, 2010, the Town of Garner sent a letter listing concerns about the Red and Pink Corridor Alternatives and requesting their elimination. The reasons cited related to parks, recreational facilities, orderly growth, planned industrial development, community cohesion, water quality, access, and neighborhood impacts. The letter also indicated the town's strong support for the Orange Corridor Alternative. Following this letter, the Town of Garner also prepared a video "visual letter" that detailed the same concerns outlined in the letter. On November 30, 2010, North Carolina General Assembly's Garner delegation, including two State Representatives and two State Senators, submitted a letter asking NCDOT to eliminate the Pink Corridor Alternative from further consideration.

Many local residents also oppose the Pink Corridor Alternative. The petition signed by 1,096 members of Springfield Baptist Church also opposed the Pink Corridor Alternative. The 970 individual letters from members of the church also expressed opposition to the Pink Corridor Alternative. Local residents have also submitted over 400 e-mail comments, letters, and telephone hotline comments opposing the Pink Corridor Alternative.

5.3.3 Red and Pink Corridor Alternatives Conclusions

At the January 20, 2011, resource and regulatory agency meeting, NCDOT recommended elimination of the Red Corridor Alternative because its potential benefit in avoiding or minimizing impacts to Dwarf Wedgemussel habitat and potential reduced wetland impacts is outweighed by the following disadvantages:

- It does not serve traffic needs as well as other alternatives.
- It would have disproportionate impacts on neighborhoods and community facilities in Garner and would require from 96 to 206 more relocations than other options.
- It would impact 10.6 acres within the Swift Creek Critical Watershed Area.
- It would impact two park and recreational facilities in Garner; both are Section 4(f)-applicable resources.
- It would negatively impact Garner's local economic base.
- It is formally opposed by local governments and strongly opposed by the local community.

NCDOT also recommended elimination of the Pink Corridor Alternative because its potential benefit in possibly minimizing impacts to Dwarf Wedgemussel habitat is outweighed by the following disadvantages:

- It creates an indirect alignment, requiring out of direction travel, and would not serve traffic needs as well as other alternatives.
- It would negatively impact Garner's local economic base.
- It would negatively impact City of Raleigh wastewater treatment facilities and a planned Wake County high school site.
- It is formally opposed by local governments and strongly opposed by the local community.

The resource and regulatory agencies agreed with the NCDOT recommendation to eliminate the Pink Corridor Alternative, but did not support elimination of the Red Corridor Alternative. The resource and regulatory agencies recommended retaining the Red Corridor Alternative for detailed study in the Draft EIS because of its potential for avoiding Dwarf Wedgemussel habitat and for potentially reducing total wetland impacts to nearly half the area impacted by the Orange Corridor Alternative.

On January 26, 2011, USACE submitted a letter to NCDOT explaining in detail its position on whether to retain or eliminate the Red and Pink Corridor Alternatives. A copy of the letter is in **Appendix C**. The letter indicated that USACE could not support eliminating the Red Corridor Alternative prior to publishing the Draft EIS and that due to its potential for minimizing wetland impacts, the Red Corridor Alternative should be studied to the same level of detail as the other DSAs. The letter also suggested that failure to study the Red Corridor Alternative to the same level of detail as the other DSAs could make it more difficult for NCDOT to receive permits for construction of the project. USACE indicated in the letter that if NCDOT elected to eliminate the Red Corridor Alternative prior to publication of the Draft EIS, it might in turn elect to comparatively evaluate the Red Corridor Alternative in a separate NEPA study. The USACE letter did state that the agency would accept elimination of the Pink Corridor Alternative as long as the Red Corridor Alternative remained under consideration. The Pink Corridor Alternative was then eliminated from further consideration due to its limited ability to serve traffic needs and its community impacts.

Following the resource and regulatory agency meeting on January 20, 2011, Garner residents and local officials continued to express strong and unified opposition to continued study of the Red Corridor Alternative. In response to this opposition, the North Carolina General Assembly's Garner delegation

introduced a bill to prevent construction of Complete 540 – Triangle Expressway Southeast Extension north of the Orange Corridor Alternative. The bill passed both houses of the General Assembly and on March 18, 2011, it was signed into law. A copy of the bill is in **Appendix B**.

Following continued coordination with USACE, FHWA, CAMPO, and the Town of Garner, FHWA and USACE sent a letter to NCDOT on December 7, 2012, indicating that the Red Corridor Alternative should be studied in detail in the Draft EIS. The letter explained that based on existing information USACE believed that while the Orange-to-Red-to-Green Preliminary Study Alternative appeared to be a less environmentally damaging alternative than others under consideration at that time, it did not yet have enough information to make a decision about the practicability of any alternatives. The letter explained that USACE could not make this decision until after a Draft EIS including detailed evaluation of the Red Corridor Alternative is published. A copy of the letter is in **Appendix C**. Based on this input, along with the input of CAMPO and local elected officials, **NCDOT concluded that the Red Corridor Alternative would be retained as a Detailed Study Alternative.**

5.3.4 Red Modified Corridor Alternative Conclusion

The Red Modified Corridor Alternative was developed as a modification of the Red Corridor Alternative in an effort to locate an alignment in the vicinity of the Red Corridor Alternative, but that could potentially avoid all direct impacts to the potential Section 4(f) properties in this area. While the Red Modified Corridor Alternative would share all of the other constraints of the Red Corridor Alternative, its primary advantage was that it would avoid Section 4(f) impacts.

As an expressway facility, the Red Modified Corridor Alternative alignment would meet minimum design standards but remain operationally undesirable because drivers would face unexpected conditions. In contrast, the horizontal and vertical alignment of the remainder of the 540 Outer Loop generally exceeds desirable design levels, leading to driver expectancy that the facility will have consistent operating conditions. The Red Modified Corridor Alternative would create a five mile segment with unexpected minimum design conditions. The problem would be even worse during less than ideal weather conditions. The Red Modified Corridor Alternative is the only corridor with this constraint.

NCDOT is currently raising the posted speed on most of the 540 Outer Loop by five miles per hour. In order to accommodate a similar five mile per hour increase in operating speed on Complete 540, the alignment of the Red Modified Corridor Alternative would likely need to be modified to accommodate the higher operating speed. This alignment modification would likely shift the right-of-way for the Red Modified Corridor Alternative into the park properties it was intended to avoid, negating this corridor's intended benefit of avoiding all potential Section 4(f) resources. In addition, a higher operating speed on a facility with an undesirable minimum design would increase the concerns about undesirable operating conditions.

While the Red Modified Corridor Alternative was initially developed as a potential Section 4(f) avoidance alternative, the design constraints described above call into question its feasibility. The design constraints may also limit the ability of this corridor to completely avoid all Section 4(f) impacts. However, several other alignment options remain under consideration that would avoid Section 4(f) impacts. For these reasons, **NCDOT concluded that the Red Modified Corridor Alternative would be eliminated from further consideration.** However, the Red Modified Corridor

Alternative will be documented as a Section 4(f) avoidance alternative in the project's Section 4(f) Statement.

5.4 POTENTIAL ALTERNATIVE ROUTES PROPOSED BY TOWN OF GARNER

Due to concerns about the potential impacts of the Red Corridor Alternative on local neighborhoods, economic activity, and parks, the Town of Garner submitted to NCDOT a map of six potential full or partial routes for consideration as alternatives for study. The locations of these six routes are shown on **Figure 5-6**. Each of these six routes would connect to alignments crossing Swift Creek downstream of Lake Benson, in the vicinity of I-40, so none would offer an option for avoiding impacts to Dwarf Wedgemussel habitat in this area. As shown in **Table 5-8**, four of the six options would result in similar or greater wetland impacts as the Orange Corridor Alternative and all six would result in significantly greater wetland impacts than the Red Corridor Alternative. All six options would result in greater stream impacts than either the Orange Corridor Alternative or the Red Corridor Alternative. Because none of these six options would offer the two advantages of the Red corridor, none of them were retained for further evaluation.

In a meeting with Town of Garner representatives on February 24, 2011, the concept of locating the project along the US 401 and US 70 corridor through Garner on elevated structures was proposed. This option is called the Red Hatched Corridor.

The potential stream and wetland impacts of an alternative including the Red Hatched corridor are shown in **Table 5-8**. As the Red Hatched corridor follows an existing roadway, wetland and stream impacts are lower than either the Orange or the Red corridors. However, an alternative including the Red Hatched corridor would require substantially more relocations than alternatives including the Orange or Red corridors. There are 1,521 structures within the alternative including the Red Hatched corridor that would require relocation, as compared to 697 for the Orange to Green alternative and 1,061 for the Orange to Red to Green alternative. In addition, relocations required by the Red Hatched corridor would include a larger share of more expensive commercial properties. The Red Hatched corridor would directly impact approximately a dozen churches and East Garner Magnet Middle School. An elevated structure would also create a significant visual impact through much of Garner and would have the psychological effect of creating a significant visual barrier through the town.

While the concept of an elevated expressway above and adjacent to existing arterial streets is perhaps an attractive idea from the perspective of reducing natural resources impacts, the economic practicability of this concept is questionable. This elevated corridor section is roughly 14 miles long and the construction cost alone of two three-lane bridges for that length is estimated to be over a billion dollars. This would not include the costs for right-of-way, relocations, utility conflicts, local street modification, and interchanges.

Operationally, building the expressway above and adjacent to the existing arterial street would create a canyon or tunnel effect for the arterial street traffic. Intersections would need to be reworked to accommodate the overhead expressway including traffic signals and turn lanes. Pier columns would become obstacles and safety concerns for motorists on the arterial street. Sight distances for intersecting traffic would be compromised.

At the intersection of US 401 and US 70, a significant commercial area in Garner, an interchange would be needed to interface traffic between the expressway and the arterial streets. The resulting interchange in conjunction with the required curvature of the expressway would require relocation of many of the retail commercial establishments at this intersection, particularly in the southeast quadrant

as the overhead structures shift from US 401 to US 70. Interchange ramps would impact existing businesses. Similar situations would result with interchanges at NC 50, I-40, and Greenfield Parkway except in each of these situations it would be an interchange on top of an existing interchange. This would all have a significant negative impact on the town’s tax base.

The Red Hatched corridor concept is economically and operationally impracticable and would result in highly significant negative community and economic impacts in Garner and was therefore eliminated from consideration.

Table 5-8: Potential Natural Resource Impacts of Town of Garner Proposed Alternatives

	Proposed Alternative	Streams (LF)	Wetlands (AC)
Garner Proposed Alternatives	Orange to Blue Hatched to Green Hatched to Orange to Green	102,830	242.3
	Orange to Blue Hatched to Blue to Orange to Green	107,020	226.5
	Orange to Blue Hatched to Blue to Turquoise Hatched to Brown Hatched to Orange Hatched to Green	105,660	247.0
	Orange to Blue Hatched to Blue to Turquoise Hatched to Brown Hatched to Grey Hatched to Yellow to Green	110,970	201.2
	Orange to Purple to Brown Hatched to Orange Hatched to Orange to Green	97,800	233.2
	Orange to Purple to Brown Hatched to Grey Hatched to Yellow to Green	103,120	187.4
	Orange to Red Hatched to Red to Green	71,290	97.8
Original Alternative	Orange to Green	94,340	232.4
	Orange to Red to Green	76,690	113.5

Sources: NC OneMap, National Wetlands Inventory

Notes: All impacts were calculated within 1,000-foot wide corridors. AC – acres. LF – linear feet.

5.5 POTENTIAL IMPROVE EXISTING ROADWAYS ALTERNATIVE PROPOSED BY REGIONAL TRANSPORTATION ALLIANCE

Additional improve existing roadways concepts were proposed by the Regional Transportation Alliance, based in Raleigh. These concepts were proposed as another potential option for reducing wetland impacts. Concepts included improvements in the Phase I area (between NC 55 Bypass and I-40) and improvements in the Phase II area (between I-40 and US 64/US 264 Bypass). Together, these concepts form an end-to-end alternative that can be compared with the other Preliminary Study Alternatives developed for the project.

In the Phase I area, the concept begins at the existing junction of the Triangle Expressway (NC 540) and US 1 in Apex. It would widen US 1 north to the I-40/I-440/US 1/US 64 interchange in Cary. The concept would then widen I-40 east to the I-40/I-440/US 64 interchange southeast of Raleigh. The

concept then extends southward along I-40, widening this facility to the Clayton Bypass, ending at NC 42. In addition to widening these facilities, improvements would be required on I-40 west of US 1 extending to NC 147. US 1 would need to be widened to an 8-lane section north of US 64 and a 6-lane section south of US 64 in the immediate interchange vicinity to provide LOS D operation. All other roadways included in this concept would require widening as previously documented for Improve Existing Roadways 1 Alternative Concept (**Section 2.1.5.1**). In the Phase II area, the concept is identical to the Phase II component of Improve Existing Roadways 1, using I-40, I-440, and US 64/US 264 Bypass. The end-to-end alternative formed from these two concepts is shown on **Figure 5-7**.

Table 5-9 shows the length and potential stream and wetland impacts of this end-to-end alternative, called the Regional Transportation Alliance Alternative and compares these to the Orange-to-Green alternative and to the potential impacts of Improve Existing Roadways 1. The Regional Transportation Alliance Alternative is over ten miles longer than Improve Existing Roadways 1 and would impact nearly three times the wetland area.

Table 5-9: Potential Natural Resource Impacts of Regional Transportation Alliance Alternative

Proposed Alternative	Length (MI)	Streams (LF)	Wetlands (AC)
Regional Transportation Alliance Improve Existing Alternative	58.02	69,980	58.0
Orange to Green	27.39	94,340	232.4
Improve Existing Roadways 1	47.64	74,530	19.4

Sources: NC OneMap, National Wetlands Inventory

Notes: All impacts were calculated within 1,000-foot wide corridors. MI – miles. LF – linear feet. AC – acres.

The required lane widths for this option were determined based on an existing traffic model that does not factor that the Regional Transportation Alliance Alternative would be tolled. If the model were to account for tolling, it is likely that the traffic volumes on the tolled lanes would be lower, limiting the ability of this option to reduce congestion on the existing roadway network. In addition, the Regional Transportation Alliance Alternative would have roughly twice the total length as the new location alternatives and require reconstruction of numerous existing interchanges, making this option extremely costly, highly disruptive to existing travel patterns during construction, and disruptive to businesses near existing interchanges. Because of these factors, in addition to its greater wetland impacts than Improve Existing Roadways 1 and the fact that all of the Improve Existing Roadways Alternative Concepts considered in **Section 2.0** failed to meet the purpose of the project, this alternative was not retained for further evaluation.

5.6 ADDITIONAL OPTIONS FOR BALANCING IMPACTS

As described in **Section 5.2.2**, Garner stakeholders have expressed continuing concern about the lack of potential alternative routes in the Phase I area and have asked whether other alternative routes could be identified that would minimize wetland impacts comparably to the Red Corridor Alternative while also minimizing community impacts relative to the Red Corridor Alternative. In response, two

additional Corridor Alternatives were developed in an attempt to minimize wetland impacts while also minimizing community impacts, the Lilac and Plum Corridor Alternatives.

Following introduction of the Lilac Corridor Alternative, project stakeholders inquired about the potential for minimizing impacts by combining this option with the previously eliminated Blue and Purple Corridor Alternatives (**Sections 5.2.3.2 and 5.2.3.3**). The Blue and Purple Corridor Alternatives had each been eliminated because, at the time they were under consideration, neither offered any clear relative advantage to other options also under consideration then. Neither of these options avoided a notable constraint characterizing the Orange Corridor Alternative, crossing Swift Creek downstream of the Lake Benson dam in an area of known Dwarf Wedgemussel habitat. However, each of these options would result in greater impacts in numerous categories including relocations, wetlands, streams, and impacts to parks, than the Orange Corridor Alternative. The introduction of the Lilac Corridor Alternative created a new option with a relative advantage over the Orange Corridor, reducing wetland impacts. Tying the Lilac Corridor Alternative to the Blue Corridor Alternative created new corridor combinations with the potential to reduce wetland impacts relative to the Orange Corridor Alternative. As shown in **Table 5-4**, end-to-end alternatives following the Orange to Blue to Lilac to Green corridors and the Orange to Purple-Blue-Lilac to Green corridors would further reduce wetland impacts as compared to the end-to-end alternative following the Orange to Lilac to Green corridors.

At a Capital Area MPO Technical Advisory Committee (TAC) meeting on December 12, 2012, the TAC adopted a motion that “the following routes should be studied by NCDOT along with [the Red and Orange Corridor Alternatives]—blue, purple, lilac, and plum. Each of these [six] routes should be fully studied and fully included in the [Draft EIS].” Based on this direction, NCDOT reconsidered the previously eliminated Blue and Purple Corridor Alternatives, considering them within the context of alignments connecting them to the Lilac Corridor Alternative. The preliminary evaluation of these options is summarized below. A copy of the minutes from this meeting is in **Appendix I**.

5.6.1 Purple-Blue-Lilac Corridor Alternative Conclusion

As explained in **Sections 5.2.3.2 and 5.2.3.3**, reconsideration of the Blue and Purple Corridor Alternatives provided an opportunity to explore the impact minimization potential of an alignment connecting the Blue Corridor Alternative to the Lilac Corridor Alternative. An end-to-end alignment following the Purple Corridor Alternative to the Blue Corridor Alternative, then to the Lilac Corridor Alternative (the “Purple-Blue-Lilac Corridor Alternative”) would create an alignment that would impact 46.9 acres of wetlands, the second smallest wetland impact of all the alignments, compared to 43.7 acres for the Red Corridor Alternative. This alignment would require 353 relocations, resulting in a relocation impact higher than many other options. However, an alignment following the Red Corridor Alternative would result in a higher relocation impact, requiring 404 relocations. For this reason, an alignment following the Purple-Blue-Lilac Corridor Alternative may offer another opportunity to minimize wetland impacts while reducing community impacts relative to the Red Corridor Alternative. For this reason, **NCDOT concluded that the Purple-Blue-Lilac Corridor Alternative should be retained as a Detailed Study Alternative.**

In evaluating connections between the Blue and Lilac Corridor Alternatives, the project team considered two potential alignments: one using the Purple Corridor Alternative and connecting to the Blue Corridor Alternative and the other using the full length of the Blue Corridor Alternative, crossing through Holly Springs. An alignment using the entire Blue Corridor Alternative would result in greater wetland and stream impacts than an alignment using the Purple Corridor Alternative and would also result in 28 percent more relocations, bisecting heavily developed areas in central Holly Springs.

Because an alignment using the entire length of the Blue Corridor Alternative to reach the Lilac Corridor Alternative would result in greater impacts than an alignment using the Purple Corridor Alternative but would not offer any offsetting relative advantage, NCDOT concluded that an alignment connecting the full length of the Blue Corridor Alternative to the Lilac Corridor Alternative should be eliminated from further consideration.

5.6.2 Lilac Corridor Alternative Conclusion

The Lilac Corridor Alternative was initially developed to reduce wetland impacts relative to the Orange Corridor Alternative. However, an alignment following the entire length of the Lilac Corridor Alternative, beginning at its divergence from the Orange Corridor Alternative near Fanny Brown Road, would result in more relocations than any other alignment. With the development of the Blue to Lilac Connector and of a second option for connecting the Orange and Lilac Corridor Alternatives, new alignments using smaller portions of the Lilac Corridor became possible. These new alignments provided opportunities to better balance community and natural resources impacts. An alignment following the Purple-Blue-Lilac Corridor Alternative has the advantage of reducing wetlands as compared to an alignment following the entire Lilac Corridor Alternative (50.6 acres compared to 46.9 acres). This option would also reduce the number of relocations as compared to an alignment following the full length of the Lilac Corridor Alternative.

The alignment option connecting the Orange and Lilac Corridor Alternatives at Sauls Road, using only the portion east of Sauls Road and excluding the portion between Fanny Brown Road and Sauls Road has the advantage of reducing the number of relocations from 447 to 366. NCDOT determined that this provided a better opportunity than the option using the full length of the Lilac Corridor Alternative to balance wetland impacts while reducing community impacts relative to the Red Corridor Alternative. For this reason, **NCDOT concluded that an alignment connecting the Orange Corridor Alternative to the Lilac Corridor Alternative at Sauls Road should be retained as a Detailed Study Alternative.**

Because these two alignment combinations that use only portions of the Lilac Corridor Alternative offered greater opportunities to balance wetland and relocation impacts than an alignment following the entire Lilac Corridor Alternative, **NCDOT concluded that the portion of the Lilac Corridor Alternative west of Sauls Road should be eliminated from further consideration.**

5.6.3 Plum Corridor Alternative Conclusion

The Plum Corridor Alternative was initially developed in response to a local inquiry about whether a simplified, slightly modified version of the Yellow Corridor Alternative might have the potential to reduce wetland or other environmental impacts in the area of Swift Creek. However, an alignment following the Plum Corridor Alternative would result in a similar magnitude of wetlands impacts (82.6 acres) as the Orange Corridor Alternative, and would also result in more stream impacts, directly affecting 39,450 linear feet of streams compared to 36,110 linear feet for the Orange Corridor Alternative. In addition, the Plum Corridor Alternative would surround Swift Creek with roadways in an environmentally sensitive area. Because it crosses Swift Creek below the Lake Benson dam, it also has the potential to negatively impact habitat important for the survival of the Dwarf Wedgemussel in Wake County. The Plum Corridor Alternative would also cross a portion of the City of Raleigh wastewater treatment sprayfields located east of the Swift Creek crossing. It would also take two of the interchange movements out of the I-40 interchange area, instead creating a partial interchange on I-40 between the interchanges at NC 42 and the Complete 540 project. The partial interchange creates poor spacing between the merging areas, leading to operational concerns about weaving traffic.

Because the Plum Corridor Alternative does not offer any relative advantages to other alternatives remaining under consideration, yet would result in a number of relatively significant negative impacts, **NCDOT concluded that the Plum Corridor Alternative should be eliminated from further consideration.**

5.7 DETAILED STUDY ALTERNATIVES

Through the alternatives development and screening process for the Complete 540 – Triangle Expressway Southeast Extension project, a series of alternatives have been identified for detailed study in the Draft EIS. These alternatives are made up of the following color-named Preliminary Corridor Alternatives:

- Orange Corridor Alternative
- Red Corridor Alternative
- Lilac Corridor (portion east of Sauls Road only)
- Purple-Blue-Lilac Corridor Alternative
- Green Corridor Alternative
- Mint Green Corridor Alternative
- Brown Corridor Alternative
- Tan Corridor Alternative
- Teal Corridor Alternative

These Preliminary Corridor Alternatives can be combined into seventeen unique new location end-to-end Preliminary Study Alternatives, numbered as follows:

- 1 Orange to Green
- 2 Orange to Green to Mint Green to Green
- 3 Orange to Brown (South) to Tan (North) to Green
- 4 Orange to Brown to Green
- 5 Orange to Green to Teal to Brown to Green
- 6 Orange to Red to Green
- 7 Orange to Red to Mint Green to Green
- 8 Orange to Purple-Blue-Lilac to Green
- 9 Orange to Purple-Blue-Lilac to Green to Mint Green to Green
- 10 Orange to Purple-Blue-Lilac to Brown (South) to Tan (North) to Green
- 11 Orange to Purple-Blue-Lilac to Brown to Green
- 12 Orange to Purple-Blue-Lilac to Green to Teal to Brown to Green
- 13 Orange to Lilac (at Sauls Road) to Green
- 14 Orange to Lilac (at Sauls Road) to Green to Mint Green to Green
- 15 Orange to Lilac (at Sauls Road) to Brown (South) to Tan (North) to Green
- 16 Orange to Lilac (at Sauls Road) to Brown to Green
- 17 Orange to Lilac (at Sauls Road) to Green to Teal to Brown to Green

Table 5-12 shows the comparative impacts for these Detailed Study Alternatives (DSAs), and the locations of each are shown on **Figure 5-8**. These alternatives will be more fully developed and refined. Once functional designs have been prepared, the impacts will be determined, documented, and summarized in the Draft EIS.

Table 5-10: Detailed Study Alternatives - Summary of Potential Impacts

ID	Preliminary Alternative	Length (MI)	Number of Interchanges	Major Power Easement Crossings	Relocations		Section 4(f)-Applicable Resources	Potential EJ Communities	Potential LEP Communities	VAD Properties	Hazardous Materials Sites		Streams (LF)		NWI Wetlands (AC)		Total Ponds		100-Year Floodplain (AC)		Critical Watershed Area (AC)		303(d) Waters (LF)	
					300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	1,000 ft Corridor	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor	300 ft ROW	1,000 ft Corridor
1	Orange to Green	27.39	12	12	217	697	0	1	1	2	7	10	36,110	94,340	88.1	232.4	32	51	139.5	268.0	0	0	990	2,590
2	Orange to Green to Mint Green to Green	27.47	12	12	220	704	0	1	1	2	7	10	37,140	94,050	92.5	238.9	30	49	146.6	288.4	0	0	1,000	2,590
3	Orange to Brown (South) to Tan (North) to Green	27.89	12	12	204	704	1	1	1	3	7	10	37,280	94,920	91.2	229.2	28	46	145.7	284.5	0	0	2,980	5,840
4	Orange to Brown to Green	28.23	12	12	187	674	1	1	1	3	7	10	36,410	90,220	89.4	230.7	30	48	113.5	250.2	0	0	2,440	4,830
5	Orange to Green to Teal to Brown to Green	28.44	12	12	209	694	0	1	1	2	7	10	36,270	90,360	89.0	236.1	30	50	113.5	257.8	0	0	500	1,560
6	Orange to Red to Green	23.94	10	5	404	1,061	2	1	1	0	6	11	24,520	76,690	43.7	113.5	30	48	128.7	259.3	10.6	38.9	1,300	4,200
7	Orange to Red to Mint Green to Green	24.02	10	5	407	1,069	2	1	1	0	6	11	25,350	78,080	48.1	120.1	28	46	135.8	279.8	10.6	38.9	1,320	4,210
8	Orange to Purple-Blue-Lilac to Green	29.84	12	9	353	886	2	1	1	5	5	7	36,840	95,640	46.9	161.2	33	53	137.4	311.3	0	0	990	2,590
9	Orange to Purple-Blue-Lilac to Green to Mint Green to Green	29.91	12	9	356	893	2	1	1	5	5	7	37,870	95,350	51.3	167.7	31	51	144.5	331.8	0	0	1,000	2,590
10	Orange to Purple-Blue-Lilac to Brown (South) to Tan (North) to Green	30.52	12	10	338	887	3	1	1	6	5	7	38,260	96,480	50.2	158.3	30	48	143.6	328.4	0	0	2,980	4,240
11	Orange to Purple-Blue-Lilac to Brown to Green	30.86	12	10	321	857	3	1	1	6	5	7	37,390	91,770	48.4	159.8	32	50	111.4	294.2	0	0	2,440	3,230
12	Orange to Purple-Blue-Lilac to Green to Teal to Brown to Green	30.88	12	9	345	883	2	1	1	5	5	7	37,000	91,650	47.8	164.9	31	52	111.4	301.2	0	0	500	1,560
13	Orange to Lilac (at Sauls Road) to Green	26.36	12	12	366	981	0	1	1	1	8	12	33,140	85,320	55.7	167.4	34	50	103.8	210.8	0	0	990	2,590
14	Orange to Lilac (at Sauls Road) to Green to Mint Green to Green	26.43	12	12	369	988	0	1	1	1	8	12	34,160	85,030	60.1	173.9	32	48	110.9	231.3	0	0	1,000	2,590
15	Orange to Lilac (at Sauls Road) to Brown (South) to Tan (North) to Green	27.04	12	13	351	982	1	1	1	2	8	12	34,550	86,160	59.0	164.5	31	45	110.0	227.9	0	0	2,980	4,240
16	Orange to Lilac (at Sauls Road) to Brown to Green	27.38	12	13	334	952	1	1	1	2	8	12	33,690	81,460	57.2	166.0	33	47	77.8	193.7	0	0	2,440	3,230
17	Orange to Lilac (at Sauls Road) to Green to Teal to Brown to Green	27.40	12	12	358	978	0	1	1	1	8	12	33,290	81,330	56.6	171.1	32	49	77.8	200.7	0	0	500	1,560

Sources: US Census, NC OneMap, National Wetlands Inventory, NCDOT aerial photography, Wake County and Johnston County tax parcel mapping
 Notes: ROW width varies according to widening requirements at interchanges. MI – miles. ROW – conceptual right-of-way. ft – feet. AC – acres. LF – linear feet.

6 AGENCY AND LOCAL GOVERNMENT COORDINATION AND PUBLIC INVOLVEMENT

In compliance with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Section 6002 (23 U.S.C. § 139), a Section 6002 Project Coordination Plan has been prepared for the Complete 540 – Triangle Expressway Southeast Extension project. This plan describes the process for agency coordination and public involvement in the project development process. The Project Coordination Plan was first presented to resource and regulatory agency representatives at the resource and regulatory agency meeting held on December 8, 2009, and agencies approved a draft of the Plan following the August 10, 2010 resource and regulatory agency meeting. A copy of this document is included in **Appendix D**.

6.1 AGENCY COORDINATION

6.1.1 Scoping

NCDOT sent a formal scoping letter, as required by NEPA, to state and federal agencies on January 25, 2010. A separate letter was sent to local agencies and officials on February 4, 2010. The purpose of these letters was to solicit comments and collect pertinent project information early in the alternatives development process. Coordination between NCDOT, FHWA, and the agencies has assisted with the development of the Detailed Study Alternatives (DSAs). Copies of the formal scoping letters are included in **Appendix E**. The resource and regulatory agency meeting held on February 16, 2010, served as the agency scoping meeting for the project to discuss project study area environmental features and community characteristics and potential issues of concern. Responses to scoping letters were received from four agencies (US Environmental Protection Agency, US Fish and Wildlife Service, NC Department of Environment and Natural Resources, and NC Department of Cultural Resources), two local governments (Cary and Holly Springs) and the Capital Area MPO. Copies of the scoping responses are in **Appendix E**.

6.1.2 Notice of Intent

Pursuant to Title 23, CFR Part 771, Environmental Impact and Related Procedures, the FHWA published a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the proposed Complete 540 – Triangle Expressway Southeast Extension project. The NOI was published in the Federal Register on November 30, 2009 (Vol. 74, No. 228). A copy of the NOI is included with the Section 6002 Project Coordination Plan in **Appendix D**.

6.1.3 Resource and Regulatory Agency Meetings

The principal method for agency coordination on NCDOT projects is through meetings of the resource and regulatory agencies, hosted monthly by NCDOT.

Agencies participating in the process are:

Lead Agency

- Federal Highway Administration

Cooperating Agency

- US Army Corps of Engineers

Participating Agencies

- US Army Corps of Engineers
- US Environmental Protection Agency
- US Fish and Wildlife Service
- NC Department of Cultural Resources
- NC Department of Environment and Natural Resources (DENR)
 - Division of Water Resources
 - Division of Marine Fisheries
 - NC Wildlife Resources Commission
- Capital Area Metropolitan Planning Organization

Designation as a Cooperating Agency signifies a somewhat higher level of involvement and responsibility in the environmental review process. A Cooperating Agency can also be a Participating Agency. Participating Agencies include any federal, state, or local agencies that may have an interest in the project.

Table 6-1 summarizes the resource and regulatory agency meetings that have been held for the project.

Table 6-1: Summary of Project Resource and Regulatory Agency Meetings

TEAC Meeting Date	Purpose
December 8, 2009	Introduce project, draft project study area, Notice of Intent, and draft Section 6002 Coordination Plan
February 16, 2010	Scoping meeting – discussed project study area environmental features and community characteristics and potential issues of concern
August 10, 2010	Discuss draft Purpose and Need Statement, alternatives screening process, preliminary study alternatives, and draft Section 6002 Coordination Plan
September 8, 2010	Continue discussion on draft Purpose and Need Statement, alternatives screening, and preliminary study alternatives
November 2, 2010	Continue discussion on alternatives screening and discuss results of Public Informational Meetings, including public comments
January 20, 2011	Continue discussion of alternatives development and analysis
August 22, 2012	Discuss project advancement
December 12, 2012	Discuss project status
September 19, 2013	Discuss revised Draft Alternatives Development and Analysis Report and recommended Detailed Study Alternatives
December 12, 2013	Finalize Detailed Study Alternatives

At the December 12, 2013, agency meeting, confirmation was received that the agencies do not require any additional time (as covered by Section 8.5 of the Section 6002 Coordination Plan) to review the Draft Alternatives Development and Analysis Report and the recommended DSAs in light of the public and local government comments made since the October public meetings. USACE noted agreement to waive the additional time period as noted in the Section 6002 plan. Additionally, no

agencies raised any objections to proceeding with the 17 end-to-end alternatives as DSAs, and no agencies asked for any additional alternatives to be considered. To date, no agencies have raised any Issues of Concern (per the Section 6002 Coordination Plan) on the project purpose and need, range of alternatives, alternatives screening, or DSAs. Additionally, no Issues of Concern relative to these four areas of the study were raised at the meeting. A summary of the December 12, 2013, agency meeting is in **Appendix K**.

6.2 PUBLIC INVOLVEMENT

The public involvement process is integral to the entire project development and decision-making process. Public involvement activities described below are related to the development of the project's purpose and the development and evaluation of alternatives.

6.2.1 Public Meetings

NCDOT held public meetings on September 21, 22, and 23, 2010. The September 21 meeting was at Wake Technical Community College from 4:00 p.m. to 7:30 p.m.; 558 people attended. The September 22 meeting was at Holly Springs High School from 6:00 p.m. to 9:00 p.m.; 473 people attended. The September 23 meeting was at Barwell Road Community Center in southeast Raleigh from 4:30 p.m. to 7:30 p.m.; 146 people attended. The purpose of the meetings was to solicit public input on the project including the project's study area, purpose, and preliminary alternatives. Displays at the meetings included maps of the project study area, Preliminary Corridor Alternatives, and Improve Existing and Hybrid Alternatives, along with information on the transportation planning process and the preliminary purpose for this project. Comment sheets were distributed to obtain public input on the project study area, identified project needs and purposes, and range of alternatives. This input helped to ensure that the range of reasonable alternatives, including broad Alternative Concepts, covered the full spectrum of potential alternatives.

Over 2,100 comments were received during or following the meetings. The most common concerns and issues raised by meeting attendees included:

- Continued support of the Orange Corridor Alternative in the Phase I area (NC 55 Bypass to I-40), which the public has been aware of for nearly twenty years as the protected corridor, and opposition to other new location corridors. Approximately 90 percent of those expressing an alternative preference indicated support for the Orange Corridor Alternative.
- Opposition to new alternatives (other than the Orange corridor), particularly the Blue and Purple Corridor Alternatives through Holly Springs and the Red Corridor Alternative in Garner.
- Concern about the perceived inequity of a tolled Complete 540 project when existing segments of I-540 are untolled.

Following introduction of the Tan Corridor Alternative, NCDOT held another public meeting on December 2, 2010, at the Barwell Road Community Center from 4:30 p.m. to 7:30 p.m.; 399 people attended. The purpose of this meeting was to solicit input on the Tan Corridor Alternative and the Green Corridor Alternative and to present information about these options in the Phase II area, which extends between I-40 and US 64/US 264 Bypass. Over 250 comments were received at or following this meeting. Most of these comments expressed opposition to the Tan Corridor Alternative due to potential neighborhood impacts and support for using publicly-owned land in the Randleigh Farm property for the project.

NCDOT held an additional round of three public meetings in October 2013 to present and receive public comment on the NCDOT/FHWA recommended Detailed Study Alternatives (DSAs) for evaluation in the project's Draft Environmental Impact Statement. The first meeting was at Wake Technical Community College on October 14 from 4:00 p.m. to 7:30 p.m.; 810 people attended. The next meeting was at Barwell Road Community Center on October 15 from 4:00 p.m. to 7:30 p.m.; 330 people attended. The third meeting was at Holly Springs High School on October 16 from 6:00 p.m. to 9:00 p.m.; 545 people attended. Displays included maps of the recommended DSAs, preliminary impact information, an illustration of the proposed typical section, and a summary of the project purpose and need. A brief informational video providing an overview of the project was shown on a continuous loop at each meeting. A handout brochure describing the project, the recommended DSAs, the environmental review process, and the project schedule was distributed. Comment sheets were provided at the meeting.

Over 1,100 comments were received during or following the meetings. The most common concerns and issues raised by meeting attendees included:

- Strong opposition to the Purple-Blue-Lilac Corridor and a desire to see this option dropped from consideration before the DSAs are finalized.
- Opposition to the Lilac Corridor.
- Continued opposition to the Red Corridor.
- Continued support for the Orange Corridor.

6.2.2 Public Outreach Methods

NCDOT is using several different methods for communicating project information to the public, soliciting feedback, and responding to comments and questions. These methods are described below:

6.2.2.1 Newsletters

To date, three project newsletters have been distributed to all property owners in the project study area, a mailing list including over 56,000 individuals. The first newsletter, distributed in March 2010, announced the start of the project study and provided introductory information about the project. The second newsletter, distributed in September 2010, announced the public meetings and included a map of the preliminary new location Corridor Alternatives. The third newsletter was distributed in September 2013 to announce the October 2013 public meetings and to present and solicit input on the recommended DSAs. A fourth newsletter will be distributed in early 2014 to announce the selection of the DSAs. Copies of these newsletters are included in **Appendix F**.

6.2.2.2 Project Website

The project website (<http://www.ncdot.gov/complete540>) includes project information, documents, maps, newsletters, meeting handouts, press releases, other project materials, and project contact information. Visitors to the website can also submit comments and questions electronically through the website.

6.2.2.3 Project Blog

The project blog (<http://complete540.blogspot.com>) is an interactive public outreach tool providing another method for involving the public. New postings have been added to the blog approximately twice per month and visitors are able to post comments in response to the postings. Postings are about

current study activities, project issues, and common questions about the project. To date, over 5,000 unique visitors have spent time on the project blog.

6.2.2.4 Toll-Free Telephone Hotline/E-mail

A toll-free telephone number (800-554-7849) is available for the public to call with questions, request information, or to provide comments about the project. In addition, the public can e-mail the project team with comments or questions at *complete540@ncdot.gov*. To date, over 800 people have called the project hotline and over 3,500 e-mails have been received.

6.2.3 Small Group Meetings

Throughout the study process, the project team has met with local organizations and citizens groups to discuss the project. Several meetings were held during the development of preliminary alternatives in the project study area. Meetings were requested by and held with the following groups:

- Protected Corridor Public Information Workshop (January 27, 2010) – Open to the public; meeting notification sent to all property owners within 500 feet of the protected corridor for Phase I of the project
- Upchurch Place Homeowners Association (August 14, 2010)
- Bentwinds Homeowners Association (October 13, 2010)
- Wake Technical Community College engineering staff (October 14, 2010)
- Cary Oil employees (October 14, 2010)
- Bells Pointe and Village of Wynchester Homeowners Associations (November 9, 2010)
- Village at Aversboro Homeowners Association (November 15, 2010)
- Ridgebrook, Ridgebrook Bluffs, and Westbury Homeowners Associations (November 16, 2010)
- Preserve at Long Branch Farm Homeowners Association (November 16, 2010)
- River Ridge Homeowners Association (November 22, 2010)
- Springfield Baptist Church leaders (November 23, 2010)
- Vandora Pines Homeowners Association (December 2, 2010)
- Jamison Park Homeowners Association (December 7, 2010)
- Bingham Station Homeowners Association (December 14, 2010)
- Springfield Baptist Church congregation (December 15, 2010)
- Penske Truck Leasing (January 12, 2011)
- Bridgepoint Construction Services and WRAL (January 14, 2011)
- Good Samaritan Baptist Church (January 24, 2011)
- Bridgepoint Construction Services and WRAL (February 16, 2011)
- McCullers Ruritan Club (July 24, 2012)
- Sunset Oaks Homeowners Association (October 7, 2013)
- Bentwinds Homeowners Association (October 22, 2013)

6.2.4 Petitions

Following the Public Informational Meetings in September 2010, several neighborhood groups circulated petitions regarding the project. Petitions have been submitted by the following groups:

- Tyler Farms and Brookstone Homeowners – 86 signatures supporting the Orange Corridor Alternative and opposing the Purple, Blue and Pink Corridor Alternatives.
- Upchurch Place Homeowners – 37 signatures opposing the Blue Corridor Alternative, the project as a toll facility, and the project as a whole.
- Windward Pointe – 107 signatures opposing the Blue Corridor Alternative in the vicinity of Holly Springs.
- The Village at Aversboro – 63 signatures opposing the Red Corridor Alternative.
- Ridgbrook, Ridgebrook Bluffs, and Westbury Homeowners – 121 signatures opposing the Red Corridor Alternative, supporting selection of the Purple-to-Blue Corridor Alternative, and requesting that if the Orange Corridor Alternative is selected, that the intersection at Lake Wheeler Road be located as far south as possible with sound barriers.
- Bells Pointe Homeowners – 24 signatures opposing the Orange Corridor Alternative.
- Springfield North – 30 signatures supporting the Orange Corridor Alternative and opposing the Purple and Blue Corridor Alternative.
- Bentwinds and surrounding neighborhoods – 470 signatures supporting the Orange Corridor Alternative and opposing the Blue and Purple Corridor Alternatives.
- Jamison Park Board Homeowners Association Board of Directors – Signatures of Board members supporting the Blue Corridor Alternative and opposing the Orange Corridor Alternative and the Purple Corridor Alternative.
- Town of Garner – 356 signatures opposing the Red Corridor Alternative.
- Springfield Baptist Church – 1,096 signatures opposing the Red and Pink Corridor Alternatives and the Preliminary Study Alternative that would connect the Orange Corridor Alternative to the Red Corridor Alternative via improvements to a segment of I-40.
- Sunset Oaks – 858 signatures expressing support for the Orange Corridor and opposition to the Purple and Blue Corridors.
- Bentwinds and surrounding neighborhoods – 458 signatures expressing support for the Orange Corridor and opposition to the Purple and Blue Corridors. The petition was also signed by NC Representatives Paul Stam and Nelson Dollar, Wake County Commissioner Phil Matthews, and Fuquay-Varina Mayor John Byrne.
- Brookstone and surrounding neighborhoods – 245 signatures expressing support for the Orange Corridor and opposition to the Purple, Blue, and Lilac Corridors.
- Talicud Trail – 20 signatures expressing support for the Orange Corridor and opposition to the Purple-Blue-Lilac Corridor.
- High Grove – 47 signatures expressing support for the Orange Corridor and opposition to the Purple-Blue-Lilac Corridor.
- Hillington West and Turner Farms – 86 signatures expressing opposition to the Lilac Corridor.
- Upchurch Place – 19 signatures expressing opposition to both the Orange and Blue Corridors, and also to the project as a whole.

6.3 LOCAL GOVERNMENT COORDINATION

6.3.1 Capital Area MPO Meetings

NCDOT provides project updates at monthly meetings of the Capital Area MPO Technical Advisory Committee (TAC) and Technical Coordinating Committee (TCC). These committees include representatives of all local governments and other transportation-related groups in the region. Monthly meetings of these committees provide a forum for presenting important project information, answering comments and questions, and engaging local government representatives in the project development process.

NCDOT presented project updates at TAC meetings on:

- February 17, 2010
- March 17, 2010
- April 21, 2010
- May 19, 2010
- June 16, 2010
- September 15, 2010
- October 20, 2010
- January 17, 2011
- February 16, 2011
- March 16, 2011

NCDOT presented project updates at TCC meetings on:

- March 18, 2010
- April 1, 2010
- June 3, 2010
- August 5, 2010
- September 2, 2010
- November 4, 2010
- January 6, 2011
- February 3, 2011
- March 3, 2011
- April 7, 2011

CAMPO also established a Complete 540 Working Group to provide a forum for the affected local governments to discuss the project. To date, the working group has held three meetings:

- September 5, 2013
- October 3, 2013
- January 9, 2014

6.3.2 Small Group Meetings

NCDOT has met with local government staff and elected officials during development of preliminary alternatives to solicit input, respond to local concerns, and receive updates on local issues and constraints relative to the project. NCDOT staff attended the following meetings:

- Garner Town Council (September 28, 2010)
- Town of Holly Springs Engineering and Planning staff and Comprehensive Transportation Plan consultant (October 4, 2010)
- Town of Garner Planning staff (October 8, 2010)
- Wake County Planning and Community Services staff (October 11, 2010)
- Durham-Chapel Hill-Carrboro MPO (October 13, 2010)
- Wake County Board of Commissioners (October 18, 2010)
- City of Raleigh Public Utilities and Engineering staff (October 25, 2010)
- Wake County Planning Board (November 3, 2010)
- Holly Springs Engineering staff (November 8, 2010)
- Wake County Historic Preservation Commission (November 16, 2010)
- Town of Garner Meeting (November 17, 2010)
- Garner Town staff (November 23, 2010)
- Garner Town staff (December 3, 2010)
- Clayton Town staff and Johnston County staff (December 14, 2010)
- City of Raleigh staff (January 7, 2011)
- City of Raleigh, Wake County, and CAMPO staff (January 19, 2011)
- Garner Town staff (February 15, 2011)
- Garner Town representatives and stakeholders (February 24, 2011)
- Garner Town Council (August 6, 2012)
- Southern Wake County mayors and managers, CAMPO, and Regional Transportation Alliance (August 7, 2012)
- Wake County Board of Commissioners (August 20, 2012)
- Garner Town staff and stakeholders (August 22, 2012)
- Southern Wake County mayors and managers, CAMPO, and Regional Transportation Alliance (July 7, 2013)
- Wake County Board of Commissioners (August 20, 2013)
- Garner representatives and stakeholders (August 22, 2013)
- Holly Springs Town Council (October 1, 2013)

6.3.3 Local Government Resolutions and Staff Comments

Following the Public Informational Meetings in September 2010, several local governments passed resolutions regarding Complete 540:

- The Town of Holly Springs passed a resolution supporting construction of the project in the Orange Corridor Alternative (September 21, 2010).
- The Town of Garner passed a resolution supporting construction of the project in the Orange corridor and opposing the Red Corridor Alternative (October 4, 2010).
- The Wake County Board of Commissioners passed a resolution supporting construction of the project in the Orange Corridor Alternative and opposing the Blue, Purple, and Red Corridor Alternatives (October 18, 2010).
- The Town of Fuquay-Varina passed a resolution supporting construction of the project in the Orange Corridor Alternative (October 19, 2010).
- The Town of Knightdale adopted a resolution in support of NCDOT building a new roadway for both phases of the Triangle Expressway Southeast Extension (October 20, 2010).
- The Capital Area MPO passed a resolution supporting the Orange Corridor Alternative and urging that the entire remaining portion of the Outer Loop be built as a single project (October 20, 2010).
- The Capital Area MPO passed a resolution opposing the Red and Tan Corridor Alternatives (March 17, 2011).
- The North Carolina General Assembly passed legislation to prevent construction of the project north of the Orange Corridor Alternative; the legislation was signed into law (March 18, 2011).
- The Capital Area MPO passed a resolution expressing its “unwavering support for construction of the Wake Outer Loop, as quickly as possible, in a location that meets the needs of area citizens and requirements of federal law” (May, 16, 2012).
- The Capital Area MPO passed a resolution requesting that North Carolina Session Law 2011-7 be repealed to allow study of alternative routes for the project in accordance with NEPA and other federal laws and to allow construction of the project as quickly as possible (December 12, 2012). On December 20, 2012, the Capital Area MPO sent a letter to the North Carolina General Assembly echoing this.
- Town of Holly Springs passed a resolution supporting construction of the project in the Orange Corridor Alternative (October 1, 2013).
- The Town of Fuquay-Varina passed a resolution supporting construction of the project in the Orange Corridor Alternative (October 19, 2013).
- The Wake County Board of Commissioners passed a resolution supporting construction of the project in the Orange and Green Corridor Alternatives (October 21, 2013).
- The Town of Garner passed a resolution supporting construction of the project in the Orange Corridor Alternative (October 22, 2013).
- The Capital Area Metropolitan Planning Organization (CAMPO) passed a motion to continue support of the Orange Corridor Alternative (November 20, 2013).

Copies of these resolutions are in **Appendix B**.

Several local governmental and regulatory agencies, local interest groups, and local elected officials have also submitted formal letters regarding Complete 540:

- The Wake County Parks, Recreation & Open Space Department sent a letter (October 6, 2010) raising concerns about Purple, Red, and Blue Corridor Alternatives crossing segments of priority streams along Middle and Swift Creeks. Additionally there was concern expressed specifically about the Blue Corridor Alternative near the planned Southeast Regional Park. Modification of the Blue Corridor Alternative would avoid the acquired land for this park; however, Wake County is in negotiations for an adjacent piece of land to expand the park that could not reasonably be avoided with the Blue Corridor Alternative. They expressed support for the Orange Corridor Alternative.
- The Town of Holly Springs supports the Orange Corridor Alternative and sent comments (October 21, 2010) relative to the various alternative routes under consideration. The Town further supports the use of the Orange Corridor Alternative and not the Blue or Purple Corridor Alternatives at Holly Springs.
- The Garner Chamber of Commerce sent a letter (October 19, 2010) in support of the Orange Corridor Alternative and in opposition to the Red Corridor Alternative. They cited impacts to businesses and residences as the primary reason for their opposition to the Red Corridor Alternative.
- The Town of Garner sent a list of concerns (October 20, 2010) in support of eliminating the Red and Pink Corridor Alternatives. The reasons cited related to parks, recreational facilities, orderly growth, planned industrial development, community cohesion, water quality, access, and neighborhood impacts. The town reiterated in the letter their strong support for the Orange Corridor Alternative.
- The Town of Cary sent a letter (October 20, 2010) in support of designating the project as a bypass for the US 64 corridor and provided comments about the project's purpose and need statement.
- The YMCA of Garner and the YMCA of the Triangle sent a letter (October 22, 2010) opposing the Red Corridor Alternative due to potential impacts on a planned YMCA site on Aversboro Road.
- The North Carolina General Assembly's Garner delegation, including two State Representatives and two State Senators, sent a letter (November 30, 2010) asking NCDOT to eliminate the Red and Pink Corridor Alternatives from further consideration, citing potential impacts to Garner neighborhoods, the local tax base, and parks and other community facilities.
- The Wake County Board of Commissioners sent a letter (December 8, 2010) requesting elimination of the Tan Corridor Alternative.
- The Mayor of Raleigh sent a letter (January 11, 2011) stating opposition to the Tan Corridor Alternative and requesting that NCDOT work to develop other alternatives in the Phase II project area.
- USACE sent a letter (January 26, 2011) indicating its opposition to eliminating the Red Corridor Alternative.
- The Johnston County Board of Commissioners sent a letter (February 8, 2011) stating its opposition to the Tan Corridor Alternative and requesting its elimination.
- USFWS sent a letter (February 17, 2011) regarding the Dwarf Wedgemussel studies and data needs.
- USACE sent a letter (March 23, 2011) requesting more information regarding the Red and Pink Corridor Alternatives.
- The Town of Garner sent a letter (October 6, 2011) expressing continued opposition to study, consideration, or construction of the Red Corridor Alternative.

- USACE sent a letter (February 17, 2012) affirming its position that the project’s Environmental Impact Statement should “rigorously explore and objectively evaluate” the Red Corridor Alternative.
- The Town of Garner sent a letter (March 7, 2012) stressing its concerns about detrimental community impacts that could arise with continued “construction and/or study” of the Red Corridor Alternative.
- The Wake County Board of Commissioners sent a letter (August 29, 2012) reaffirming the County’s support of the Orange and Green Corridor Alternatives and requesting that the study be completed as quickly as possible.
- FHWA and USACE sent a letter (December 7, 2012) indicating that the Red Corridor Alternative should be studied in detail in the Draft Environmental Impact Statement.
- NC Representative Paul Stam submitted a letter (October 23, 2013) requesting that NCDOT complete studies on the Purple Corridor Alternative as quickly as possible and expressing support for the Orange Corridor Alternative.
- NC Representative Darren Jackson submitted a letter (November 12, 2013) suggesting that the Orange Corridor Alternative is the best option for the project west of I-40 and that potential impacts east of I-40 on the Sherriff’s training center and the wastewater treatment spray fields should carry more weight than potential impacts to the Randleigh Farm property. The letter also suggested that NCDOT complete necessary work as soon as possible in order to eliminate the Red Corridor Alternative.
- NC Senator Tamara Barringer and Representative Nelson Dollar submitted a letter (November 12, 2013) expressing support for the Orange Corridor Alternative and opposition to the Red, Blue, Purple, and Lilac Corridor Alternatives.
- The Town of Holly Springs submitted a letter (November 12, 2013) detailing the reasons why the Town supports the Orange Corridor Alternative and opposes the Purple Corridor Alternative.
- The Wake County Planning, Development and Inspections Division submitted a letter (November 12, 2013) expressing support for the Orange Corridor west of I-40 and the Green Corridor east of I-40, citing the importance of these routes in supporting the Wake County Land Use Plan.
- The Wake County Division of Parks, Recreation and Open Space submitted a letter (November 12, 2013) expressing support for the Orange Corridor Alternative west of I-40 and the Green Corridor Alternative east of I-40, citing impacts to Wake County priority stream corridors, the planned Southeast County Park, and a Natural Heritage site along Middle Creek as concerns about the Purple, Blue, and Red Corridor Alternatives.

Copies of these letters are in **Appendix C**.

6.3.4 State Legislation

North Carolina House Bill 225 and Senate Bill 165, which both passed the State General Assembly, prevent implementation of the Complete 540 – Triangle Expressway Southeast Extension north of the Orange Corridor Alternative. Governor Beverly Perdue signed the bill into law as North Carolina Session Law (NCSL) 2011-7 on March 18, 2011. A copy of the legislation is in **Appendix B**.

As indicated in Section 6.3.3, the Capital Area MPO passed a resolution on December 12, 2012, requesting that NCSL 2011-7 be repealed to allow study of alternative routes for the project in

accordance with NEPA and other federal laws and to allow construction of the project as quickly as possible. The Capital Area MPO sent a copy of the resolution to the North Carolina General Assembly to encourage repeal of the law. On January 23, 2013, the Town of Garner sent a letter to the Wake County delegation of the General Assembly affirming its opposition to the repeal of the law. A copy of this letter is in **Appendix B**.

During its 2013 session, the North Carolina General Assembly passed two bills removing the alignment restrictions previously imposed on the project by NCSL 2011-7. Governor Pat McCrory signed House Bill 10 into law as NCSL 2013-94 on June 12, 2013, and signed House Bill 817 into law as NCSL 2013-183 on June 26, 2013. By removing the restrictions imposed by NCSL 2011-7, this legislation allowed NCDOT to fully resume the project's environmental study. Copies of this legislation are in **Appendix B**.

6.3.5 Agency Review of Draft Alternatives Development and Analysis Report

A copy of the *Draft Alternatives Development and Analysis Report*, dated January 13, 2012, was distributed January 13, 2012 to the cooperating and participating agencies involved in the environmental review process for this project, along with other organizations that requested to receive a copy*. This included:

- Federal Highway Administration
- US Army Corps of Engineers
- US Environmental Protection Agency
- US Fish and Wildlife Service
- NC Department of Cultural Resources
- NC Department of Environment and Natural Resources (DENR)
 - Secretary's Office
 - Division of Water Resources
- NC Wildlife Resources Commission
- Capital Area Metropolitan Planning Organization
- NC Department of Transportation
 - State Highway Administrator
 - Project Development and Environmental Analysis (PDEA)
 - PDEA Human Environment Unit
 - Office of Civil Rights
- Town of Garner*
- Regional Transportation Alliance*

NCDOT requested that recipients of the report provide written comments by February 16, 2012 on the information and conclusions in the report, including the report's recommendations for Detailed Study Alternatives (DSAs). NCDOT also requested that agency recipients identify any potential issues of concern that would result in the denial or significant delay in the issuance of any environmental permits.

Written comments were received from the agencies and organizations noted in **Tables 6-2, 6-3 and 6-4**. The comments, along with NCDOT responses to the comments, are summarized in the tables. In addition, a letter from the Southern Environmental Law Center (SELC) and a letter from the Town of Garner regarding the project and *Draft Alternatives Development and Analysis Report* were received. Copies of all of the comments and letters are included in **Appendix J**.

The February 17, 2012 letter from USACE (**Appendix J**) stated that, based on the current administrative record for this project, the agency does not believe that the Red Corridor Alternative is not practicable under Section 404 of the Clean Water Act (CWA). The agency also indicated its position that the Red Corridor Alternative should be studied in detail in the project's Draft Environmental Impact Statement (EIS) and that elimination of the Red Corridor Alternative prior to this would compromise USACE's ability to satisfy statutory requirements under Section 404.

Following review of all of the comments received, NCDOT determined that further coordination with FHWA and other project stakeholders was necessary prior to holding a resource and regulatory agency meeting to identify DSAs for detailed study in the Draft EIS for this project. FHWA and USACE sent a letter on December 7, 2012, indicating that the Red Corridor Alternative should be studied in detail in the Draft EIS.

A revised version of the *Draft Alternatives Development and Analysis Report*, dated September 2013, was distributed on September 5, 2013, to the agencies and the organizations listed above. This version of the report included revisions to the January 2012 version, as well as added material. It also included NCDOT/FHWA recommended Detailed Study Alternatives (DSAs) for detailed study in the project's Draft Environmental Impact Statement. Three agencies submitted written responses to the revised report. The NC Division of Water Resources and NC Division of Cultural Resources concurred with the recommended alternatives for detailed study. USACE indicated that the alternatives recommended for detailed study meet the agency's requirements under Section 404 of the Clean Water Act and NEPA. The remaining agencies submitted no further response. In accordance with item 8.5 of the Section 6002 Coordination Plan for this project, no response is interpreted to mean that the participating agency had no significant objections to the alternative screening report. Copies of these comments are in **Appendix K**.

Table 6-2: Agency Comments on the Draft Alternatives Development and Analysis Report and Responses to Comments

Agency	Date	Page	Comment	Action
USFWS	1/31/12	General comment	Environmental baseline studies will need to be conducted to complete the BA and BO.	As noted, NCDOT is conducting these studies.
USFWS	1/31/12	General comment	Stress significance of maintaining viable post-project DWM population in Swift Creek.	Comment noted.
USFWS	1/31/12	General comment	Continued concern about impacts of Orange Corridor; need for Reasonable and Prudent Measures to mitigate impacts.	Comment noted.
USFWS	1/31/12	p. 4-5	Statement about Lake Benson dam acting as genetic barrier between upstream and downstream Swift Creek implies that DWM is present upstream; it has never been collected upstream.	Text modified (same page) to avoid implying that it occurs upstream.
USFWS	1/31/12	p. 5-16	Statement about the potential of the Orange Corridor Alternative to impact DWM habitat in Wake County should also mention Johnston County.	Text modified accordingly (p. 5-20).
USACE email	2/14/12	General comment	USACE has not reached a decision regarding recommendation to eliminate Red Corridor from further study.	Comment noted.
USACE email	2/14/12	Figure 5-3	Add potential right-of-way limits to figure.	Figure 5-3 modified accordingly.
USACE email	2/14/12	p. 5-36	Add wetland/stream quality data for predicted resources for Orange Corridor Alternative to Table 5-9.	No longer applicable – this section has been removed from the report as predicted resources are no longer being used for any analysis.
USACE email	2/14/12	Appendix I	Results of the prediction methodology (Appendix I) do not seem to demonstrate more reliability at predicting wetland acreages than the NWI Wetlands. Statistical analysis to show the accuracy of the Prediction Methodology required before it can be used to compare the Red and Orange Alternatives.	No longer applicable – this section has been removed from the report as predicted resources are no longer being used for any analysis.
USACE letter	2/17/12	General comment	Believe Senate Bill 165 does not preclude requirement under 404(b)(1) guidelines to analyze and objectively compare alternatives for project requiring Clean Water Act permit. Elimination of the Red corridor compromises USACE ability to satisfy its statutory requirements.	Comment noted.

Table 6-2: Agency Comments on the Draft Alternatives Development and Analysis Report and Responses to Comments

Agency	Date	Page	Comment	Action
USACE letter	2/17/12	General comment	Orange to Red to Green Alternative appears to be a less environmentally damaging alternative and should be included as a DSA in DEIS.	Comment noted.
USACE letter	2/17/12	General comment	Do not believe Section 4(f) should be used to define reasonable range of alternatives under NEPA or to eliminate alternatives that should otherwise be considered under 404(b)(1) guidelines.	Comment noted.
USACE Letter	2/17/12	General comment	If NCDOT elects to complete its NEPA analysis and release a DEIS without including the Orange to Red to Green Alternative as an alternative for detailed study, and NCDOT intends to pursue Department of Army authorization for this project, USACE may find it necessary to terminate its cooperating agency status with FHWA and supplement the FHWA EIS with their own document.	Comment noted.
NCDWQ	2/16/12	General comment	NCDWQ agrees with carrying forward the alternatives identified in Section 5.8, page 5-38, but feels that the Red Alternative should continue to be studied through the DEIS.	Comment noted.
NCDWQ	2/16/12	Page 5-36	Alternatives should be compared using data gathered through the same methodologies. Table 5-9 states that the data for the Red Alternative was gathered using a predictive model while the Orange Alternative data was based on delineated streams and wetlands.	Red Corridor has not been delineated; predicted wetlands/streams provided sufficient information to suggest eliminating the Red Corridor.
NCDCR	2/20/12	General comment	The elimination of an alternative based on its potential to affect historic resources appears to be premature in that the only historic resources considered to this point are those that are already National Register-listed properties.	Comment noted. A full survey of historic resources is nearing completion and the results of this survey will be presented to the agencies as soon as possible.
NCDCR	2/20/12	General comment	While National Register-listed or eligible properties are mentioned as being protected by Section 4(f), the lack of detail in the several figures and text give the impression that only public parks are being given full consideration under the regulation.	Comment noted. The Section 4(f) issues addressed by the figures and the text discussing the Red Corridor only deal with park resources because there are no National Register-listed properties in the Red Corridor area.

Table 6-2: Agency Comments on the Draft Alternatives Development and Analysis Report and Responses to Comments

Agency	Date	Page	Comment	Action
USEPA	2/16/12	General comment	Recommend detailed consideration of non-toll or hybrid alternatives, including hybrids incorporating mass transit that could meet project purpose.	To date, numerous non-toll and hybrid alternatives have been considered, but most do not meet project purpose Measures of Effectiveness (MOEs). Remaining option that would meet project purpose ("Hybrid 3") would have much more significant impacts on relocations and wetlands without offering any offsetting advantage and is therefore not reasonable.
USEPA	2/16/12	p. 1-2	Section 1.2.1 - First stated need (maintaining long-term mobility) does not describe an actual need.	By identifying the goal of maintaining long-term mobility, the Capital Area Metropolitan Planning Organization (CAMPO) Long Range Transportation Plan (LRTP) implies that the projects included in the LRTP are needs required to meet this goal.
USEPA	2/16/12	p. 1-2	Section 1.2.1 - Second stated need (limited high-speed transportation options) is not supported by data showing need for high-speed parallel facility to I-40.	As this section indicates, besides I-40/440, routes are limited to local roads with low posted speed limits. As explained at the top of page 1-3, much of I-40 already has unacceptable level of service (LOS). As documented in the Purpose and Need Statement, which has been provided to the agencies, local governments have passed a resolution formally stating the need for a "high-speed, signal-free travel option" in this area.
USEPA	2/16/12	p. 1-2	Section 1.2.1 - Refers to Section 3.2 for more information about limited transit options, but Section 3.2 doesn't appear to have this information.	The last sentence in the first paragraph of Section 3.2 states that "there are a small number of fixed bus routes traveling on congested roadways along the northern edge of the project study area"--the Purpose and Need Statement provides additional detail. Transit options are indeed very limited in this area.
USEPA	2/16/12	p. 1-3	Figure 1-4 includes many multi-lane facilities outside study area depicted on Figure 3-1. Many segments identified in Figure 1-4 have little to do with traffic conditions in the project study area and would be influenced by other network deficiencies and traffic patterns.	As this section indicates, need is based on conditions in and near the project study area. Most of the LOS E and F segments in Figure 1-4 are the facilities that currently serve the traffic that would use Complete 540.

Table 6-2: Agency Comments on the Draft Alternatives Development and Analysis Report and Responses to Comments

Agency	Date	Page	Comment	Action
USEPA	2/16/12	p. 1-3	Perhaps other improvements to NC 42 and NC 50 would address the poor LOS on these facilities.	2035 LOS, as shown in Figure 1-4, was forecast taking into consideration all planned improvements included in the LRTP. The key conclusion here is that despite all other planned improvements, most of the major roadway segments across this area will have unacceptable LOS.
USEPA	2/16/12	p. 1-3	Primary need seems to be future congestion based on forecast traffic, which is based on past development and population growth.	As discussed in detail in Section 7.1 in the Purpose and Need Statement, Census data show that the Raleigh-Cary metropolitan area has been one of the nation's fastest growing areas over the last decade. Since the economic downturn began in 2007, the Raleigh-Cary metropolitan area has remained one of the two fastest growing areas in the nation. Raleigh's annual population growth rate from 2009 to 2010 was over 12 percent.
USEPA	2/16/12	p. 1-3	Section 1.2.2 - Report does not have any specific measures as to how mobility will be improved during the peak travel period. Traffic modeling, growth projections and other assumptions are not identified.	Section 2.2.1 of the report describes in detail how ability to improve mobility is being evaluated. The Purpose and Need Statement contains more information about the traffic model and forecast. The Traffic Forecast Report (also made available to agencies via Constructware following the February 2010 resource and regulatory agency meeting) contains all relevant detail, assumptions, etc.
USEPA	2/16/12	p. 1-3	System linkage is problematic for purpose and need.	System linkage is noted as a "desirable outcome" of the project, not a major component of the project purpose. Section 2 details that system linkage is not used to screen out alternatives.
USEPA	2/16/12	p. 2-7	Section 2.2.1 - For MOEs, project study area doesn't include main segment of I-40 (Fig. 5-7).	See Appendix A for the larger traffic study area.
USEPA	2/16/12	p. 2-7	Section 2.2.1 - MOEs are biased towards highway concepts and away from alternative modes because current mass transit and multi-modal options are limited.	2035 LRTP and Triangle Regional Model do factor in expanded mass transit options, including planned light rail and expanded bus service.

Table 6-2: Agency Comments on the Draft Alternatives Development and Analysis Report and Responses to Comments

Agency	Date	Page	Comment	Action
USEPA	2/16/12	p. 2-8	Section 2.2.2 - Regarding the ability to reduce forecast traffic congestion on the existing roadway network in the project study area, poor LOS sections of I-40 are not in the project study area.	Segments of I-40 within the study area, north of US 70, are forecast to have poor LOS (LOS E). Several other roadway segments are forecast to have poor LOS (e.g., Ten Ten Road, NC 42, NC 50).
USEPA	2/16/12	p. 2-8	The safety of high-speed facilities in rural areas is worth considering.	Comment noted.
USEPA	2/16/12	p. 2-9	Section 2-3 - Concern about different traffic study area and project study area.	As described in Section 2-3, using a larger boundary for studying traffic impacts allows us to better capture the effects of alternatives on the area roadway network. The traffic study area is more consistent with the Triangle Regional Model, which underscores the LRTP. It is standard to examine a larger area when considering indirect and cumulative effects because it is agreed that transportation projects affect more than just their immediate surroundings. Improvements required to meet the purpose of this project will certainly affect the road network beyond the boundaries of the project study area and we believe that it is reasonable to examine those effects.
USEPA	2/16/12	p. 2-28	Without specific information on jurisdictional impacts, funding, etc., none of the current build Alternative Concepts may truly be "practicable" from a Section 404 perspective.	Comment noted.
USEPA	2/16/12	p. 3-2	Section 3.3 - Accurate length of Phase I and Phase II should be included. "The Orange Corridor represents approximately 17 miles of the total project length of approximately 22 miles...[but] NCDOT website [indicates]...33 miles."	Phase I and II lengths depend on the alternative (Tables 5-2 and 5-3). The Draft Alternatives Report does not state that the Orange Corridor is 17 miles or that the total project length is 22 miles, it simply states that Hybrid #3 is seventeen miles long in the Phase I area (p. 4-9). Hybrid #3 follows existing roadways (mainly Ten Ten Road) in the Phase I area.
USEPA	2/16/12	p. 3-3	Section 3.3 - Consider providing a copy of the concurrence letter concerning 23 CFR 710.501(c)(2) compliance in DEIS.	Comment noted.

Table 6-2: Agency Comments on the Draft Alternatives Development and Analysis Report and Responses to Comments

Agency	Date	Page	Comment	Action
USEPA	2/16/12	p. 3-5	Regarding statement that "agency representatives, local governments and the public have not proposed many potential corridor segments beyond those currently under consideration" - this is the responsibility of the transportation agency.	Comment noted. We received numerous route suggestions from local governments and other agencies; few differed from the nearly exhaustive set of corridor segments already considered by NCDOT. Participating agencies and the public had opportunities to review and comment on preliminary alternatives and to make suggestions for additional alternatives.
USEPA	2/16/12	p. 3-8	Section 3.5.2 - Hybrid 3 Alternative Concept was unfairly screened out by the statements made on tolling.	This is inaccurate. Section 5.2.3.19 on page 5-28 explains that Hybrid 3 was screened out due to its large number of relocations and high wetlands impacts.
USEPA	2/16/12	General comment	Report does not identify social and economic demands for the project.	This is detailed in Section 7 of the Purpose and Need Statement, which explains and documents that the population of the project area has been and is expected to continue growing rapidly. It also explains that the area economy has remained stable despite the nationwide economic downturn, and is expected to remain strong relative to that of the nation as a whole.
USEPA	2/16/12	General comment	Consider including I-5111 (I-40 widening south of Raleigh)	This is included in the Purpose and Need Statement and in the Triangle Regional Model--congestion is forecasted even with this project constructed.
USEPA	2/16/12	p. 4-1	Section 4.1 - Impacts matrix is for 1,000 foot corridors; none of actual right-of-way impacts have been studied.	These impacts will be studied in the Draft EIS.
USEPA	2/16/12	p. 4-10	Table 4-4 is missing data in the first row.	Edited accordingly (same page).
USEPA	2/16/12	p. 5-1	Efforts to shift potential right-of-way alignments for various resources were potentially made for some Preliminary Corridor Alternatives and not for others.	Impact minimization was incorporated into the development of conceptual alignments for all Preliminary Corridor Alternatives.
USEPA	2/16/12	General comment	The DEIS should include an explanation of the control of access differences between freeway and expressway.	Comment noted.

Table 6-3: NCDOT Comments the Draft Alternatives Development and Analysis Report and Responses to Comments

Unit	Date	Page	Comment	Action
NCDOT NEU	2/9/12	p. 5-17	Section 5.2.3.4 - In the first paragraph, first sentence one important advantage is mentioned, but none are listed in this paragraph. If you skip on down to the 3 rd paragraph then two advantages are mentioned and explained. A little confusing.	Have edited first paragraph to state that there are two advantages.
NCDOT NEU	2/9/12	Figures	On figures, Bass Lake was not colored blue like the other water bodies. The shape is there just not color.	Have corrected.
NCDOT NEU	2/9/12	Figure 4-2	According to Table 4-1, Segment 39 is not supposed to be shown on this figure.	Have corrected.
NCDOT Utilities	2/8/12	General comment	A major utility relocation is subject to impact areas outside the future project limits	Comment noted.
NCDOT PICS	2/17/12	General comment	Miscellaneous editorial revisions	Revisions made.
NCDOT PICS	2/17/12	p. 5-18	Section 5.2.3.6 - Add reason for Garner and Wake County opposition to Pink Corridor.	Information added.
NCDOT PICS	2/17/12	p. 5-21	Section 5.2.3.15 - Add reason for Wake County staff not supporting Grey Corridor.	Information added.
NCDOT PICS	2/17/12	p. 5-33	4th paragraph - Clarify if you mean, "This elevated corridor section is roughly 14 miles long and the construction costs alone are estimated to be over a billion dollars, which is \$XXX million (consultant to fill in correct value) more than the cost of the Orange corridor."	A cost estimate for the Orange corridor has not yet been prepared. However, based on existing information, it is assumed the Orange corridor would cost significantly less than the Red Hatched Corridor.
NCDOT PICS	2/17/12	p. 5-33	Last paragraph - State whether the Red Hatched Corridor would meet the purpose and need.	The Red Hatched corridor was not screened according to quantitative MOEs because it is not a reasonable and feasible alternative.
NCDOT PICS	2/17/12	p. 5-38	Section 5.8 - Refer to the recommended DSAs as DSAs and name/number them.	There has not been a final decision to identify these alternatives as DSAs, so they are still called recommended DSAs.

Table 6-4: Organization Comments on the Draft Alternatives Development and Analysis Report and Responses to Comments

Organization	Date	Page	Comment	Action
CAMPO	2/15/12	General comment	CAMPO does not support the "Orange to Tan to Brown to Green" alternative, but does support the other four alternatives recommended as DSAs.	Comment noted.
CAMPO	2/15/12	General Comment	CAMPO has previously submitted resolutions regarding removal of the Red and Tan alternatives from further study.	Comment noted.
CAMPO	2/15/12	General comment	CAMPO prefers that the project follow the protected corridor.	Comment noted.
CAMPO	2/15/12	General comment	CAMPO urges NCDOT to construct the entire remaining portion of the outer loop as one project, rather than two.	Comment noted. No statistical analysis has been completed for this prediction method since it was developed as a project specific tool; however, comparing the actual delineated wetlands to the methodology's prediction of wetlands suggests that the model is approximately 85% accurate.
CAMPO	2/15/12	General comment	Planning and design should be in harmony with adopted LRTP as well as the natural and cultural environments. The facility should minimize impacts to the Swift Creek Watershed and water supply area.	The project is consistent with the LRTP and will be designed to avoid, minimize, and reduce impacts to the natural and human environments.
CAMPO	2/15/12	Appendices	Update CAMPO resolutions with most recent versions.	Updated accordingly.
RTA	2/16/12	General comment	RTA supports the set of recommended DSAs for the project listed on Page 5-38.	Comment noted.
RTA	2/16/12	General comment	Request that any detailed project alternatives require convergence on / a direct interchange with Interstate 40 at the US 70/Clayton Bypass.	Requiring this specific interchange for the purpose of system linkage is too specific and prescriptive of a particular solution. Project purpose needs to be broad enough to allow consideration of wide range of alternatives.
RTA	2/16/12	General comment	Request that all future project maps include the completed US 70/Clayton Bypass freeway	All current project maps shown on the project website now include the completed US 70/Clayton Bypass and all future maps will also include it.

7 REFERENCES

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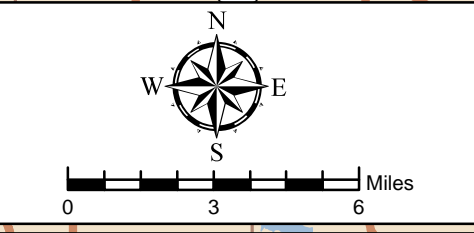
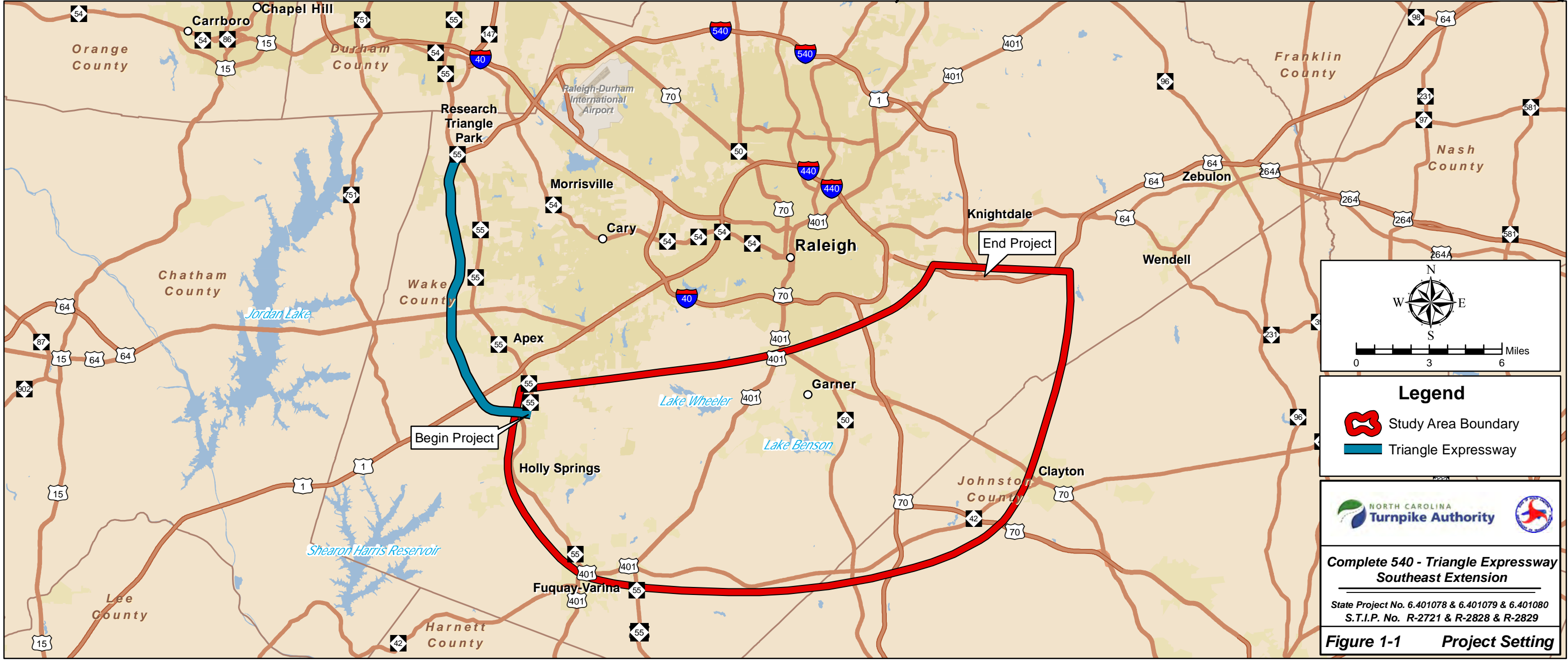
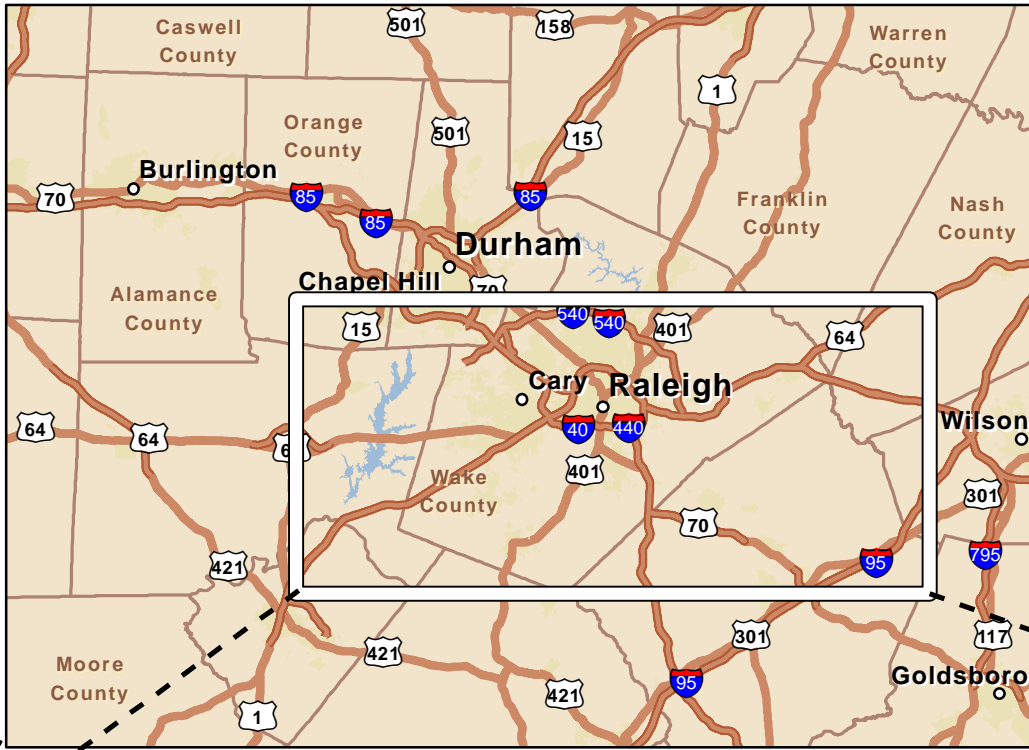
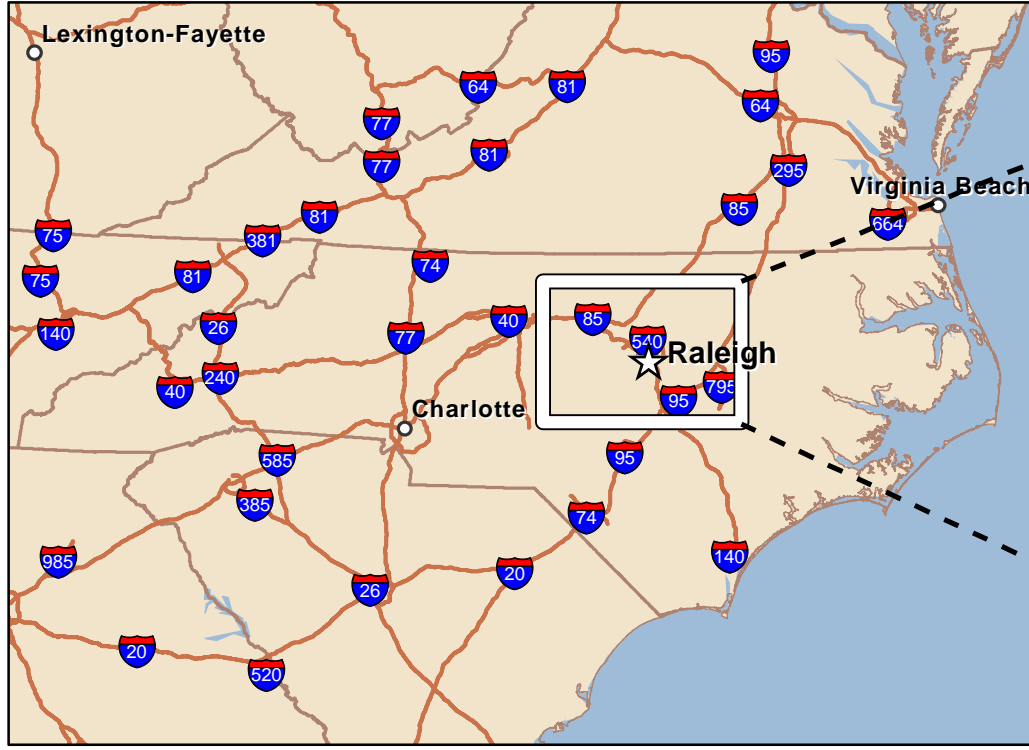
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Legend

-  Study Area Boundary
-  Triangle Expressway





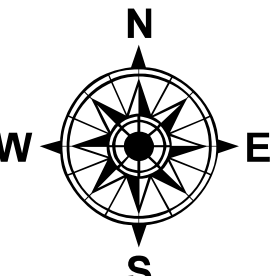

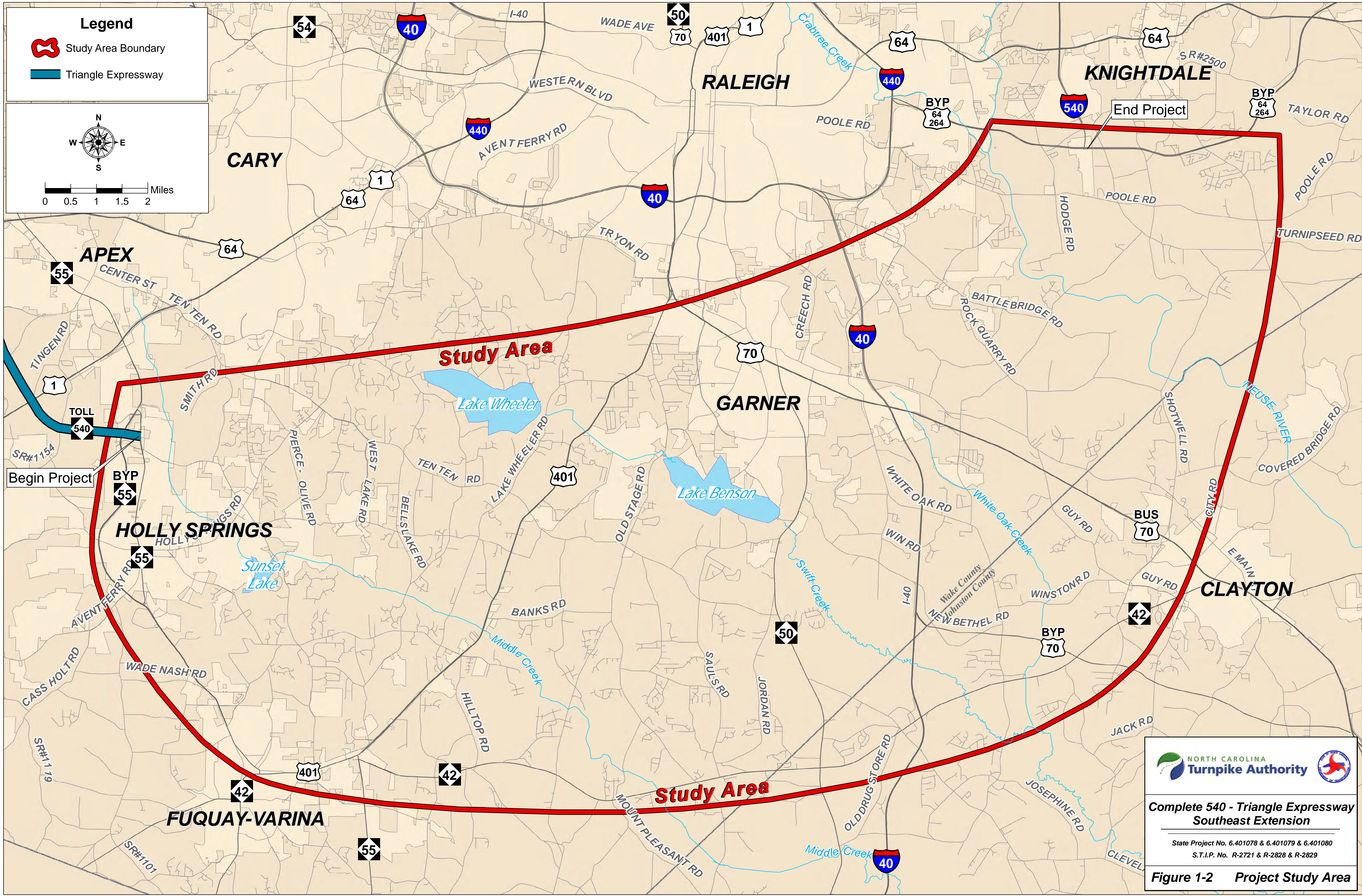

Complete 540 - Triangle Expressway Southeast Extension

State Project No. 6.401078 & 6.401079 & 6.401080
 S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 1-1 Project Setting

Legend

-  Study Area Boundary
-  Triangle Expressway

**Complete 540 - Triangle Expressway
Southeast Extension**

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S.T.I.P. No. R-2721 & R-2828 & R-2829

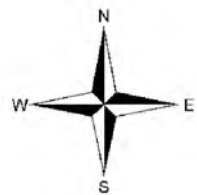
Figure 1-2 Project Study Area




**Complete 540 - Triangle Expressway
Southeast Extension**




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S.T.I.P. No. R-2721 & R-2828 & R-2829

**Figure 1-3 Existing Traffic Levels
of Service (2008)**

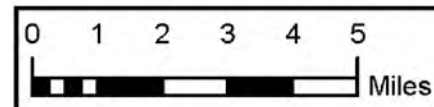
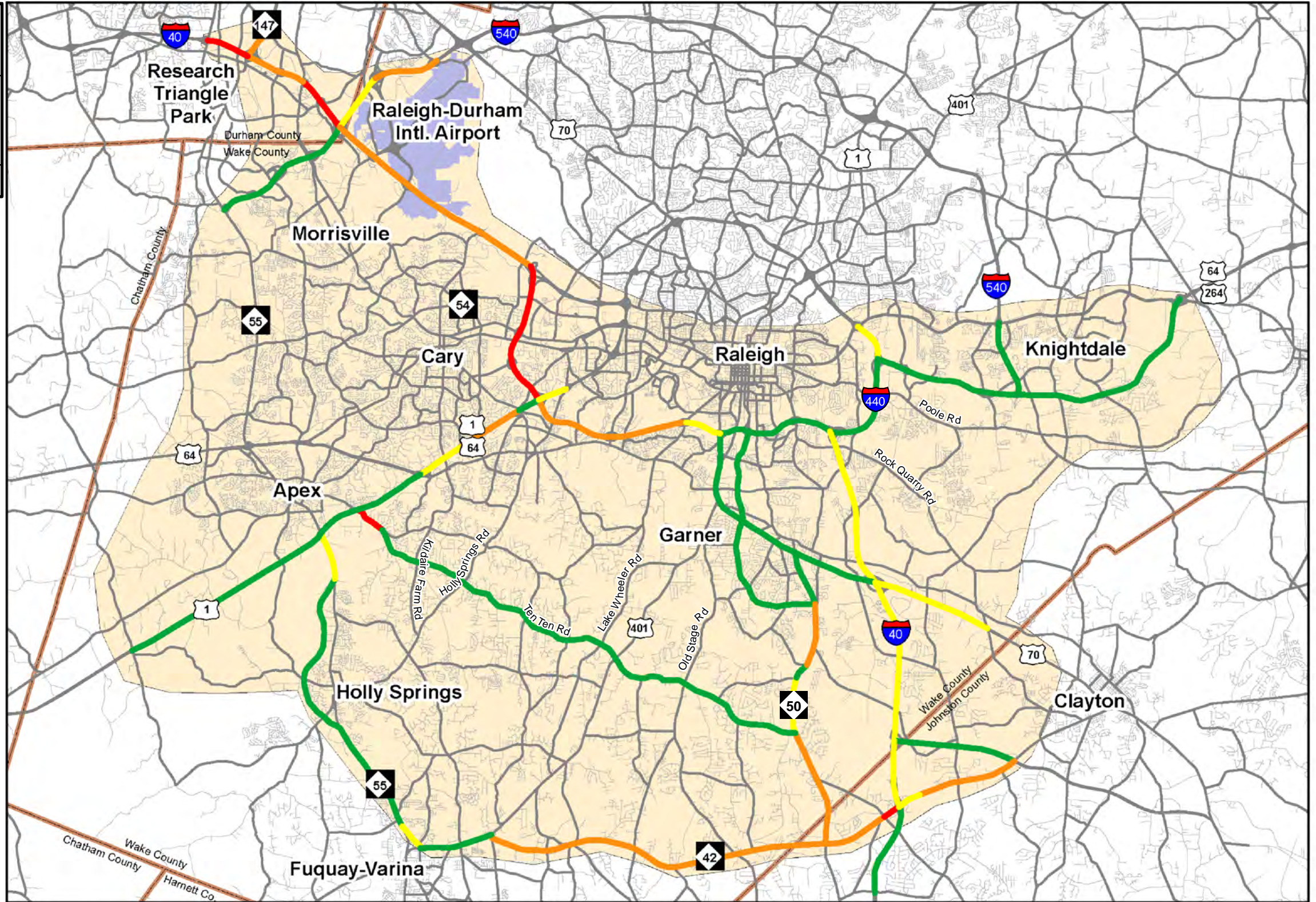


-  LOS A-C
-  LOS D
-  LOS E
-  LOS F

Legend

-  2008 Highway Network
-  Counties
-  Study Area

LOS = Level of Service

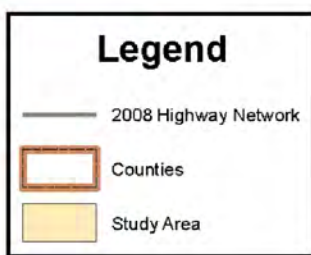
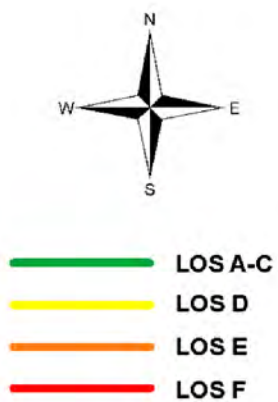




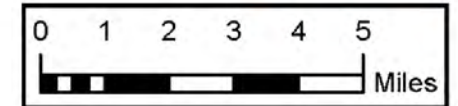
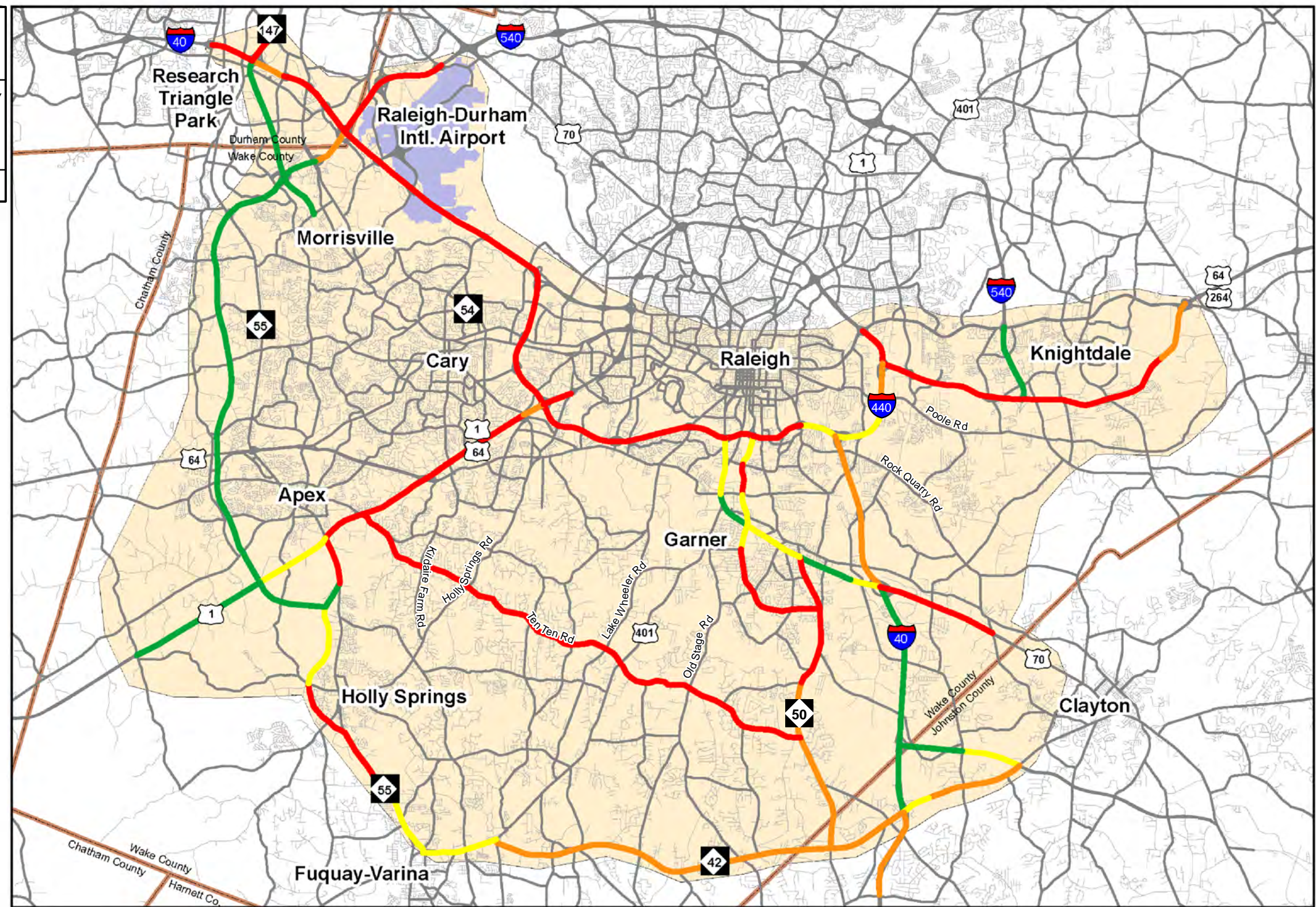
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S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 1-4 2035 No-Build Traffic
Levels of Service



LOS = Level of Service





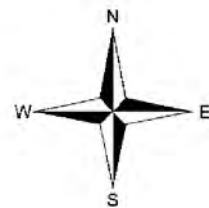
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Southeast Extension**

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S.T.I.P. No. R-2721 & R-2828 & R-2829

**Figure 2-1 Improve Existing
Roadways Alternative #1**

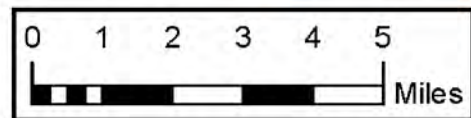
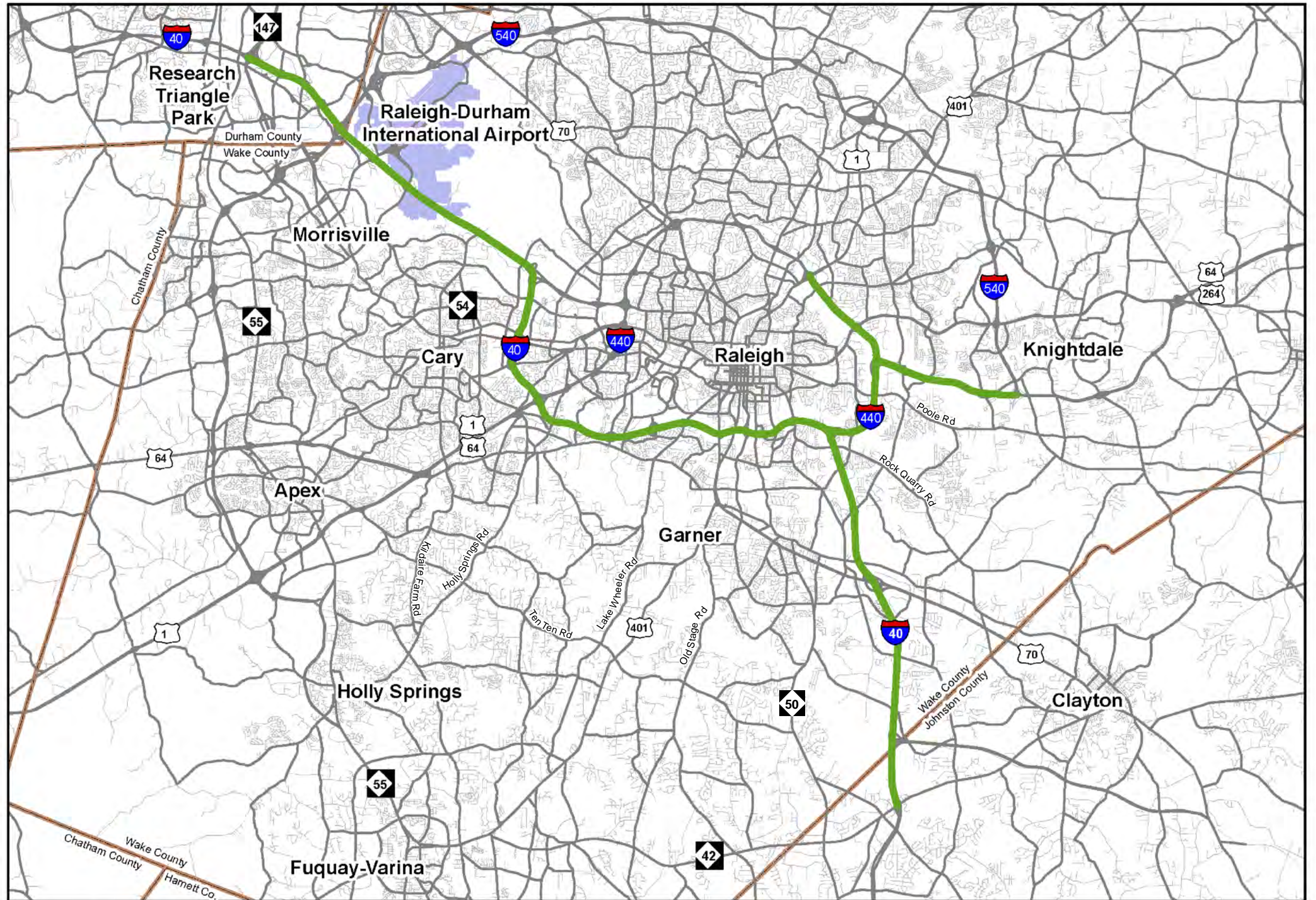
Upgraded Facilities:

- I-40
- I-440
- US 64/264



Legend

- Upgraded Facilities
- 2035 No-Build Highway Network
- Counties





Complete 540 - Triangle Expressway Southeast Extension

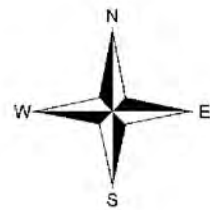
State Project No. 6.401078 & 6.401079 & 6.401080

S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 2-2 Improve Existing Roadways Alternative #2

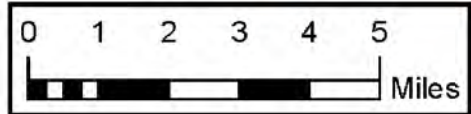
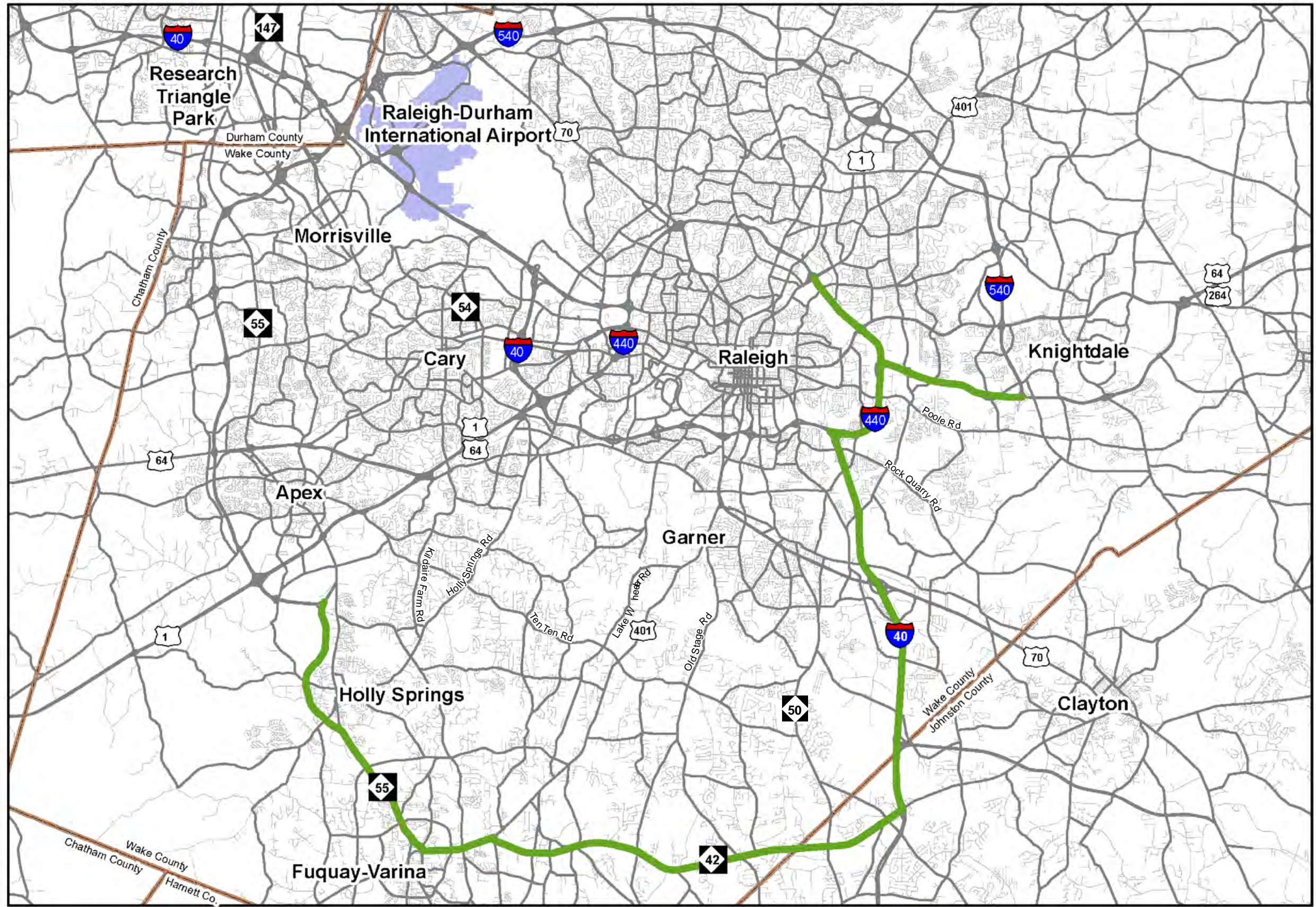
Upgraded Facilities:

- I-40
- I-440
- US 64/264
- NC 55
- US 401
- NC 42



Legend

- Upgraded Facilities
- 2035 No-Build Highway Network
- Counties





**Complete 540 - Triangle Expressway
Southeast Extension**

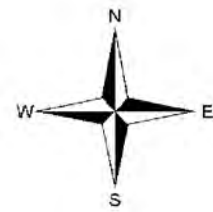
State Project No. 6.401078 & 6.401079 & 6.401080

S.T.I.P. No. R-2721 & R-2828 & R-2829

**Figure 2-3 Improve Existing
Roadways Alternative #3**

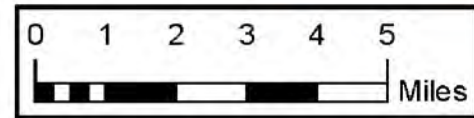
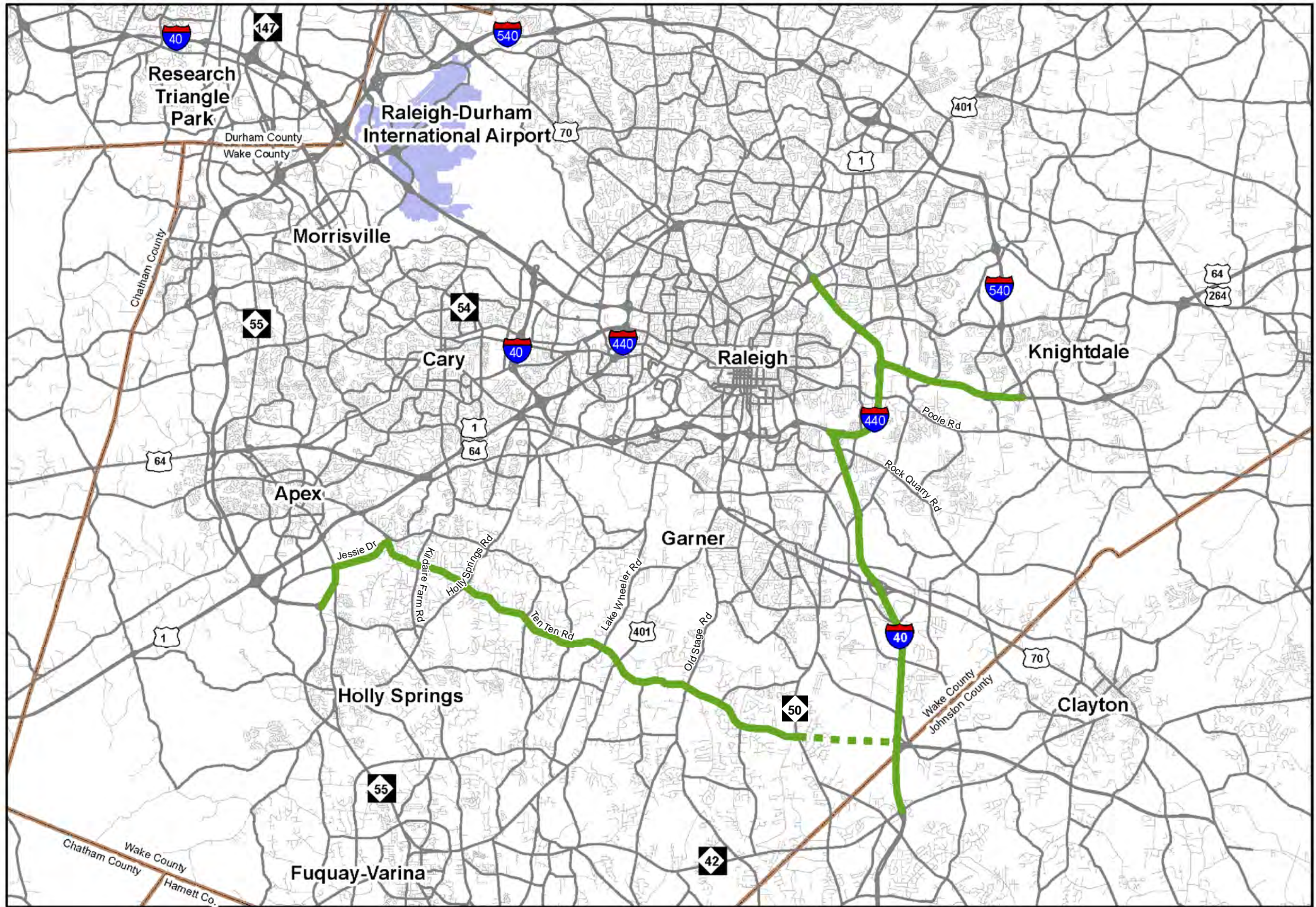
Upgraded Facilities:

- I-40
- I-440
- US 64/264
- NC 55
- Jessie Dr.
- Ten Ten Rd.



Legend

- Upgraded Facilities
- Construct New Facility
- 2035 No-Build Highway Network
- Counties





Complete 540 - Triangle Expressway Southeast Extension

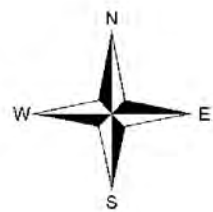
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S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 2-4 Hybrid Alternative #1

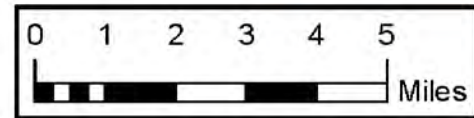
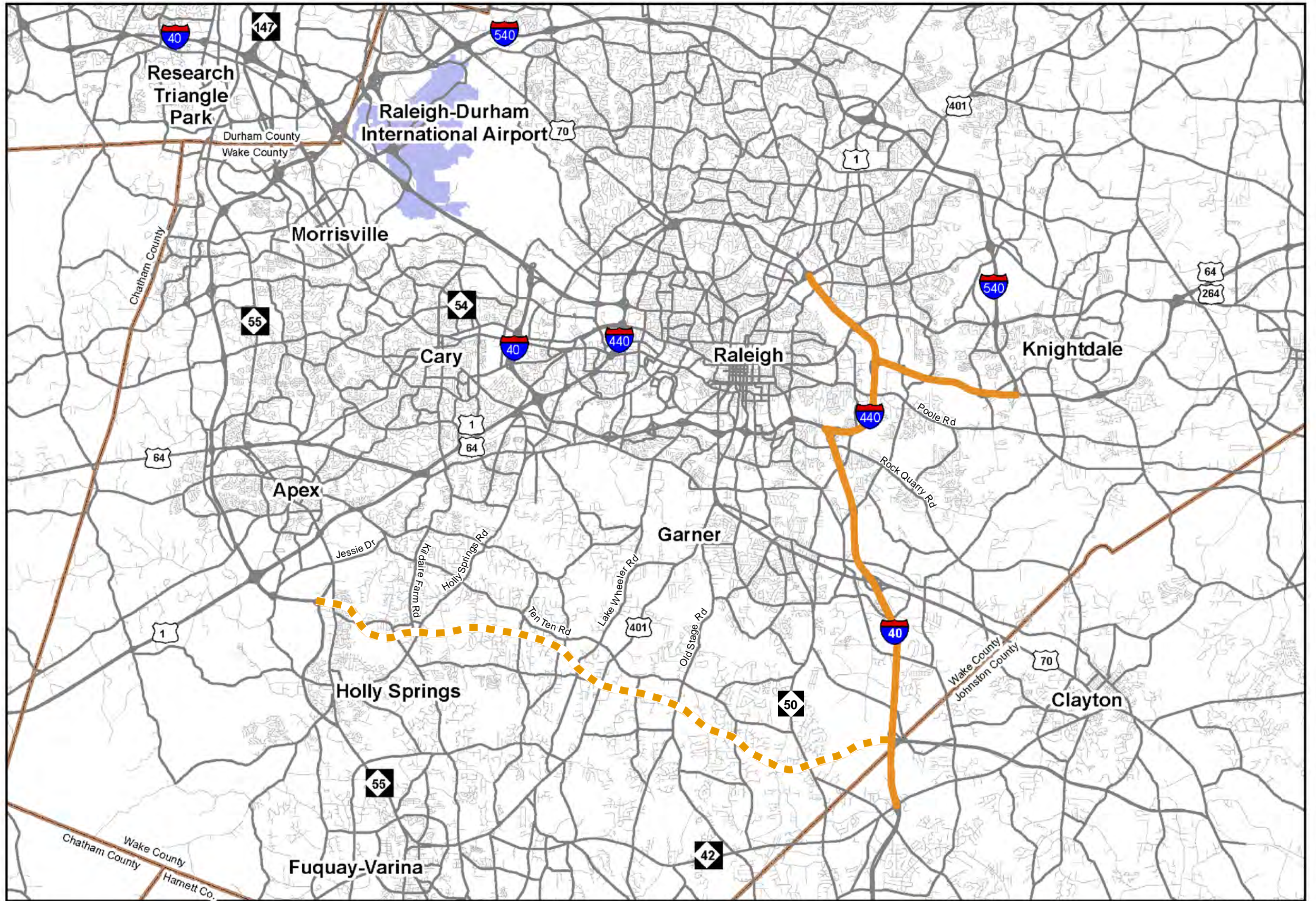
Upgraded Facilities:

- I-40
- I-440
- US 64/264



Legend

- Upgraded Facilities
- Construct New Facility
- 2035 No-Build Highway Network
- Counties





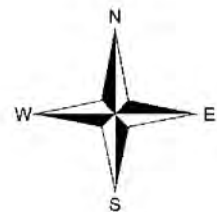
Complete 540 - Triangle Expressway Southeast Extension

State Project No. 6.401078 & 6.401079 & 6.401080
S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 2-5 Hybrid Alternative #2

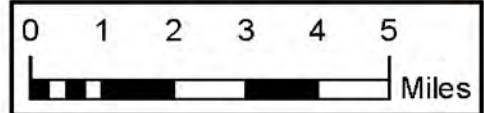
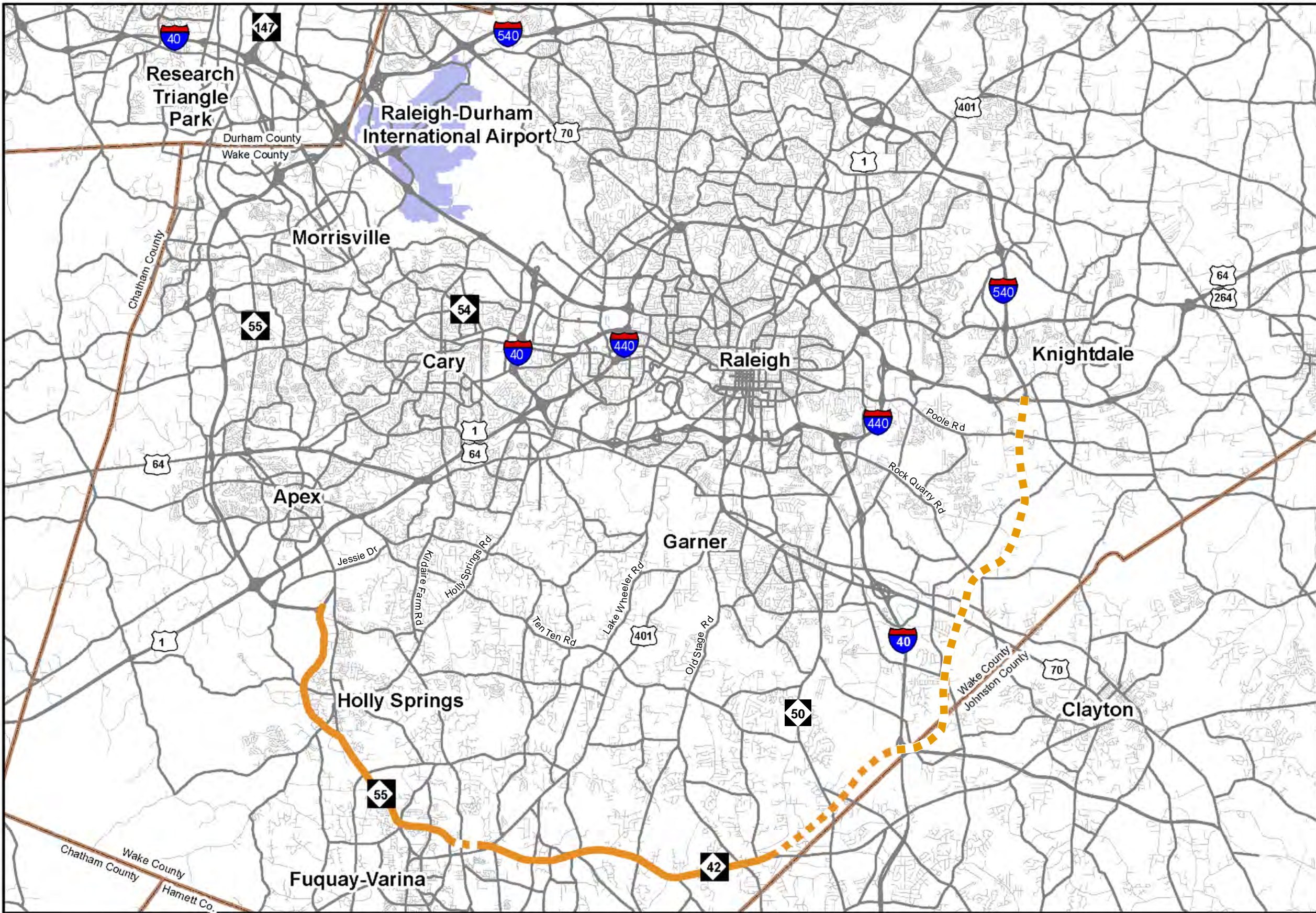
Upgraded Facilities:

- NC 42
- Judd Parkway
- NC 55



Legend

- Upgraded Facilities
- Construct New Facility
- 2035 No-Build Highway Network
- Counties





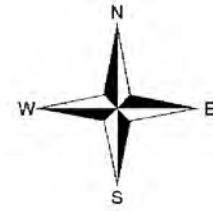
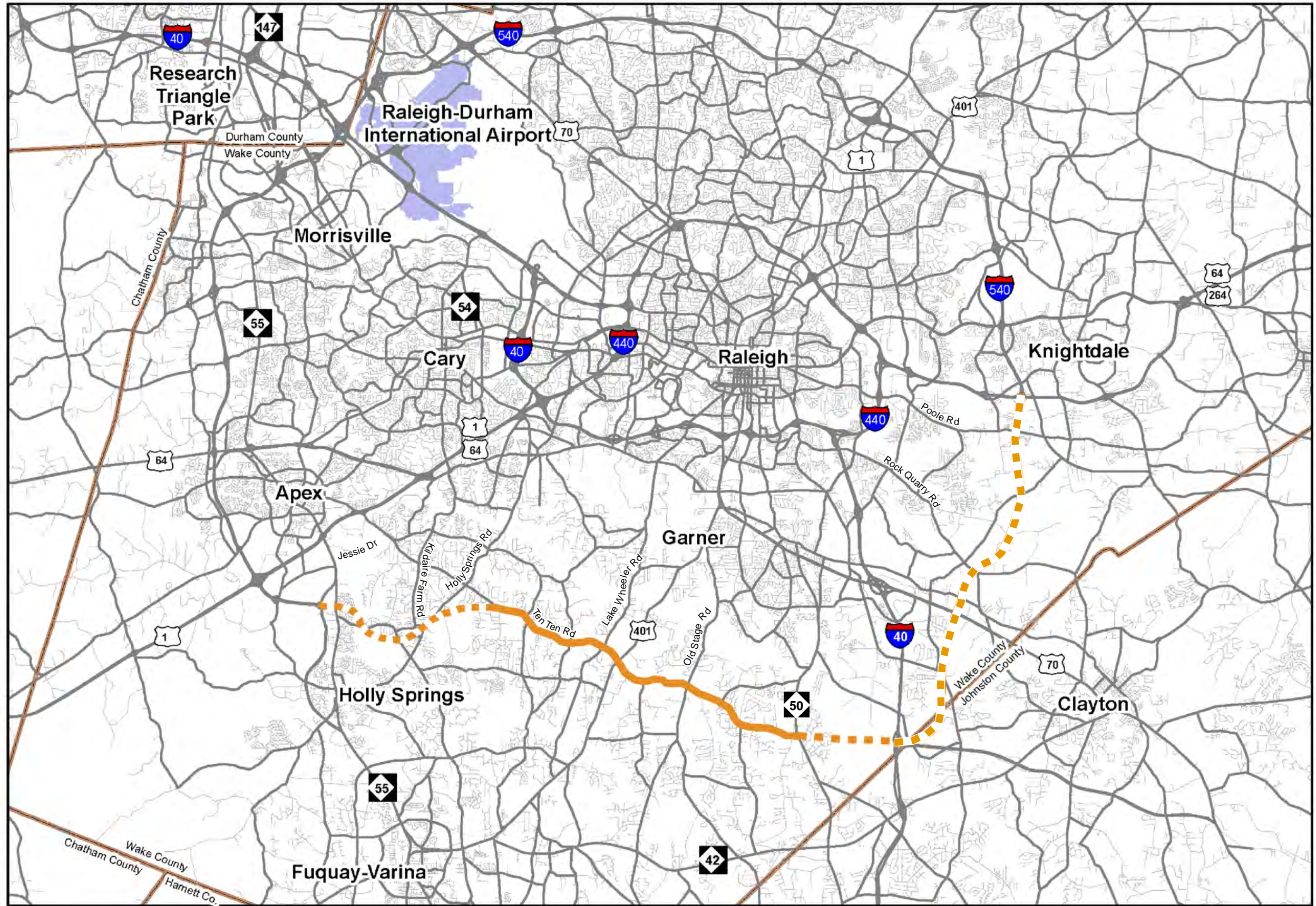
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Figure 2-6 Hybrid Alternative #3

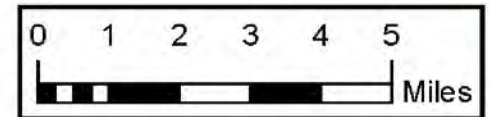
Upgraded Facilities:

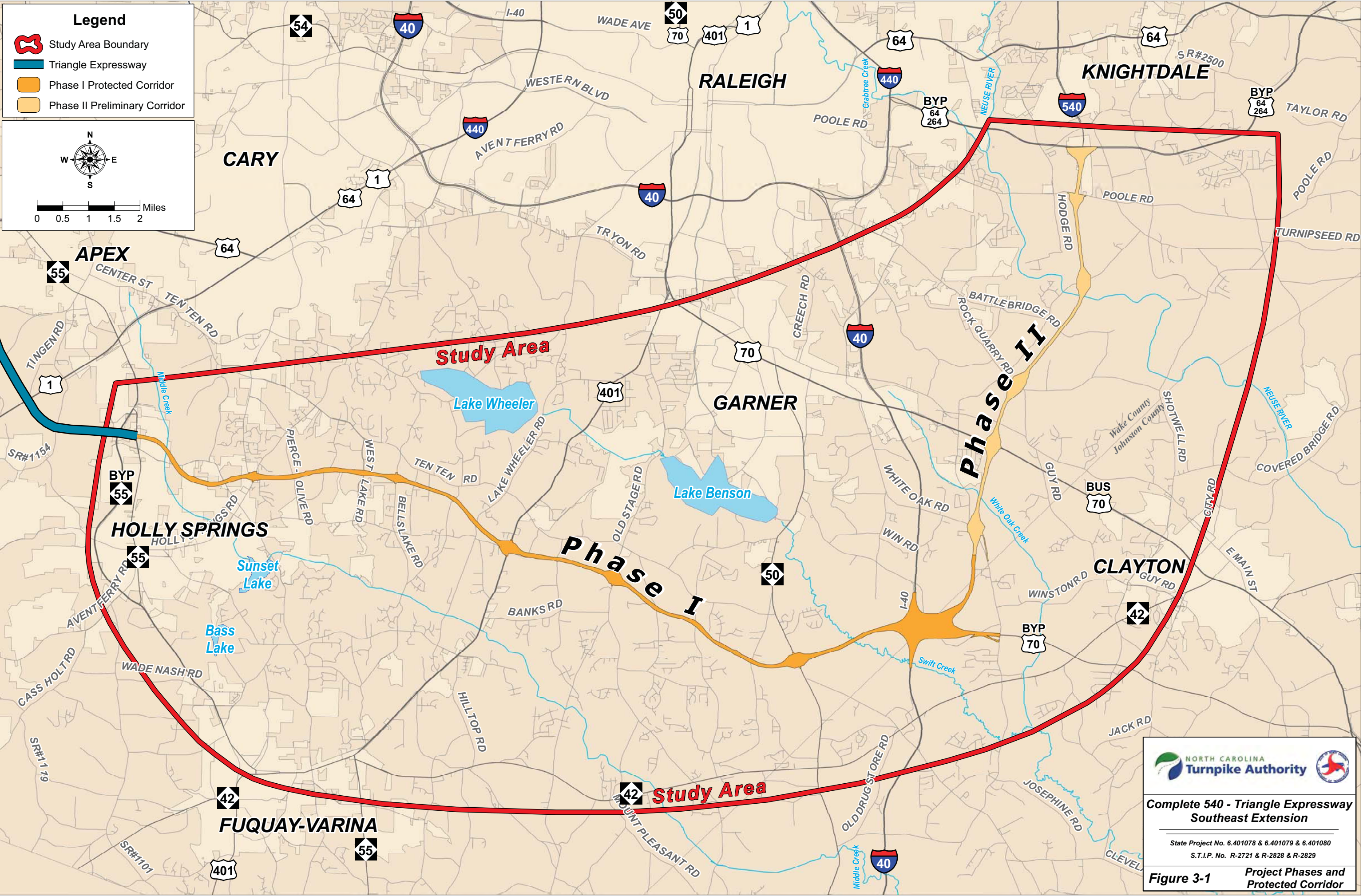
- Ten Ten Road







Legend

- Upgraded Facilities (Solid orange line)
- Construct New Facility (Dashed orange line)
- 2035 No-Build Highway Network (Thin grey line)
- Counties (Thick brown outline)





Legend

-  Study Area Boundary
-  Triangle Expressway
-  Phase I Protected Corridor
-  Phase II Preliminary Corridor

North arrow and scale bar (0 to 2 Miles).

NORTH CAROLINA Turnpike Authority

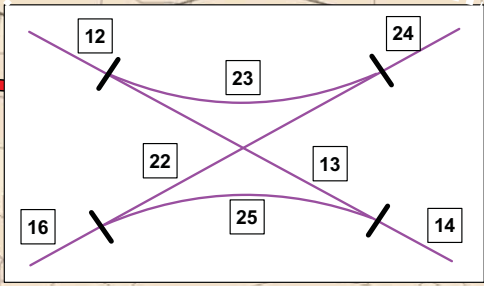
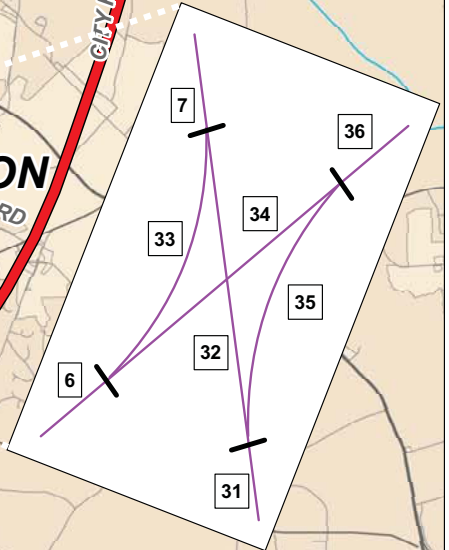
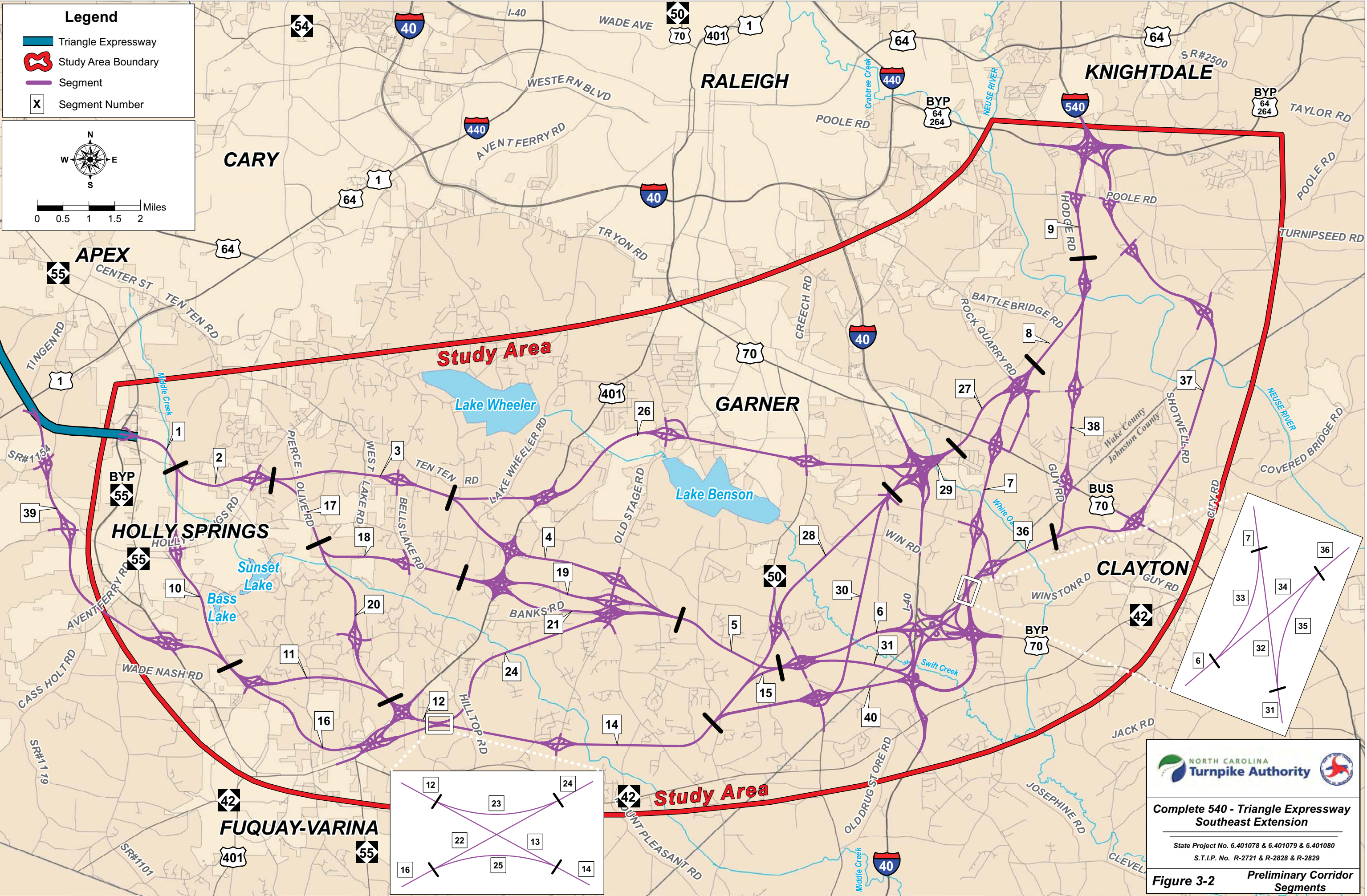
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Figure 3-1 Project Phases and Protected Corridor

Legend

- Triangle Expressway
- Study Area Boundary
- Segment
- Segment Number

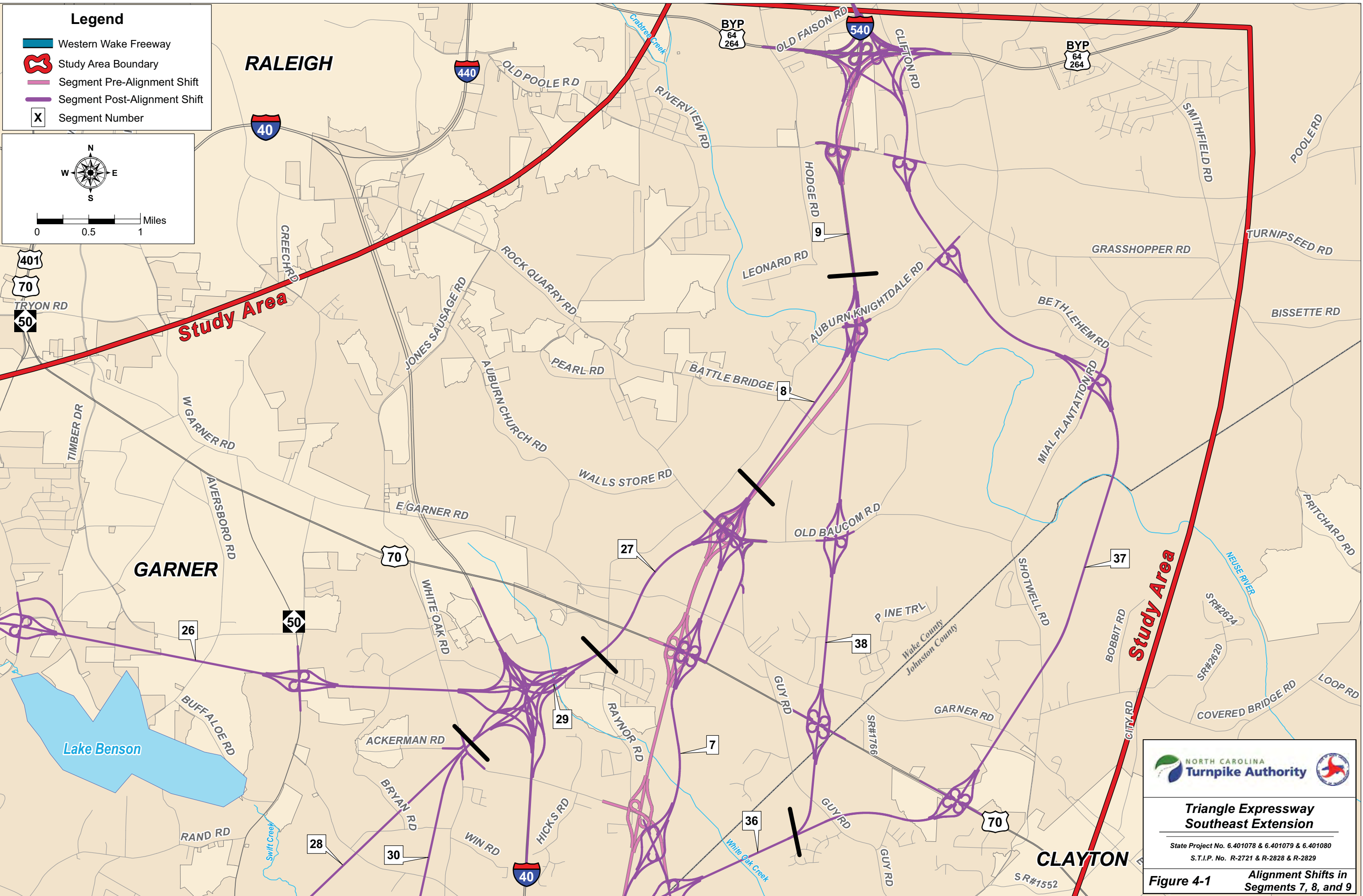


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Figure 3-2 Preliminary Corridor Segments



**Triangle Expressway
Southeast Extension**

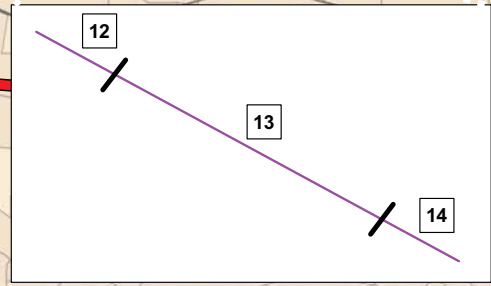
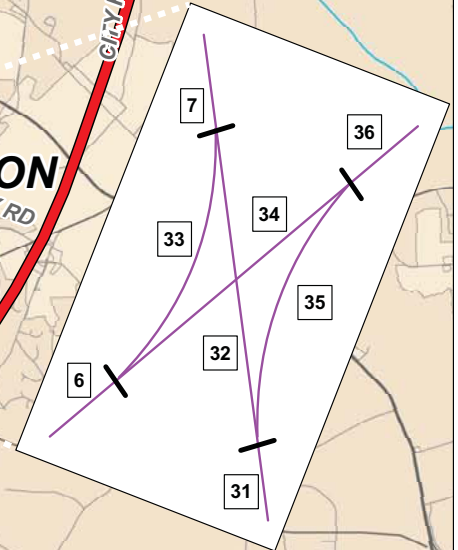
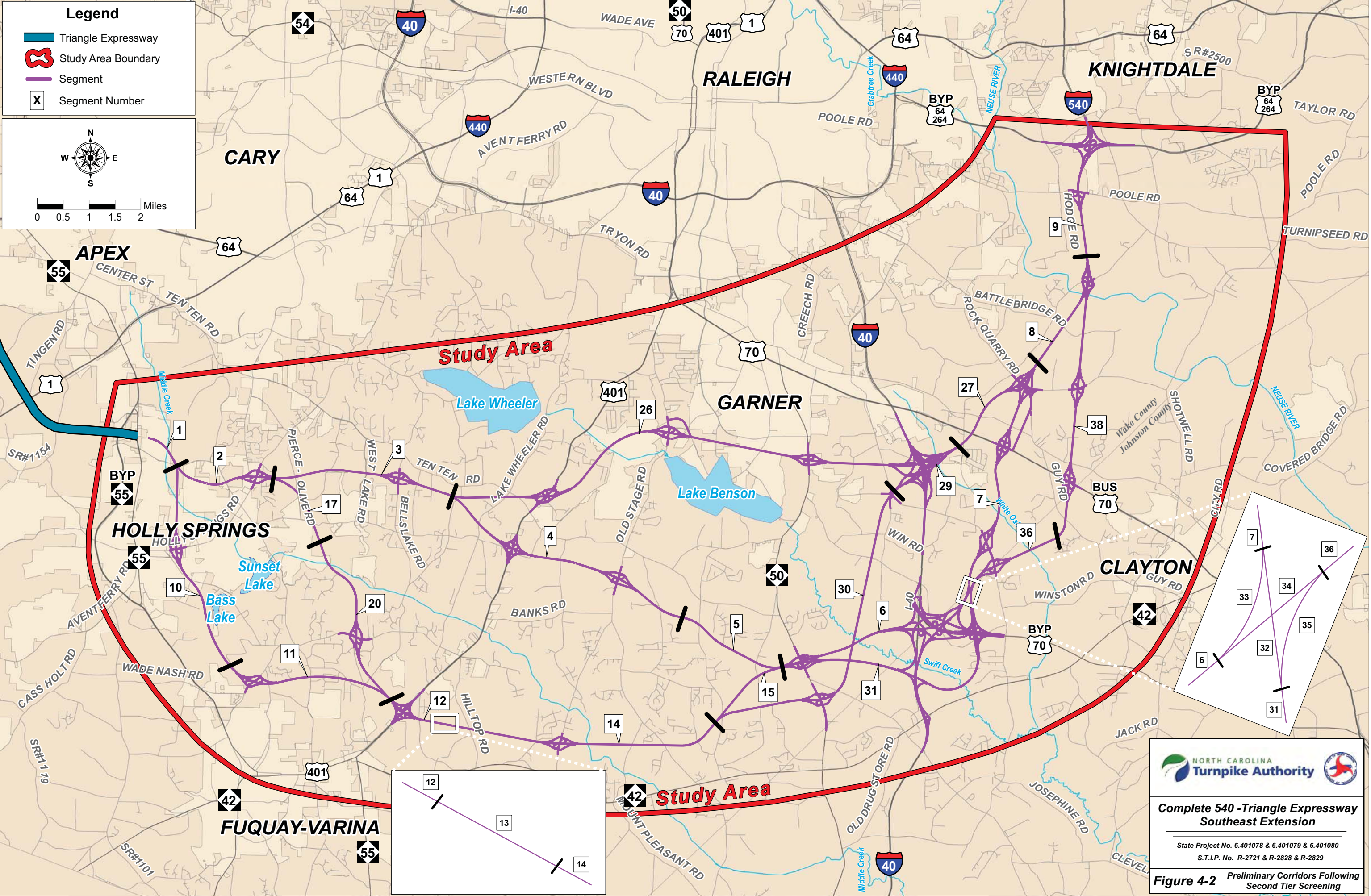
State Project No. 6.401078 & 6.401079 & 6.401080
S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 4-1 Alignment Shifts in Segments 7, 8, and 9

Legend

- Triangle Expressway
- Study Area Boundary
- Segment
- X Segment Number

0 0.5 1 1.5 2 Miles

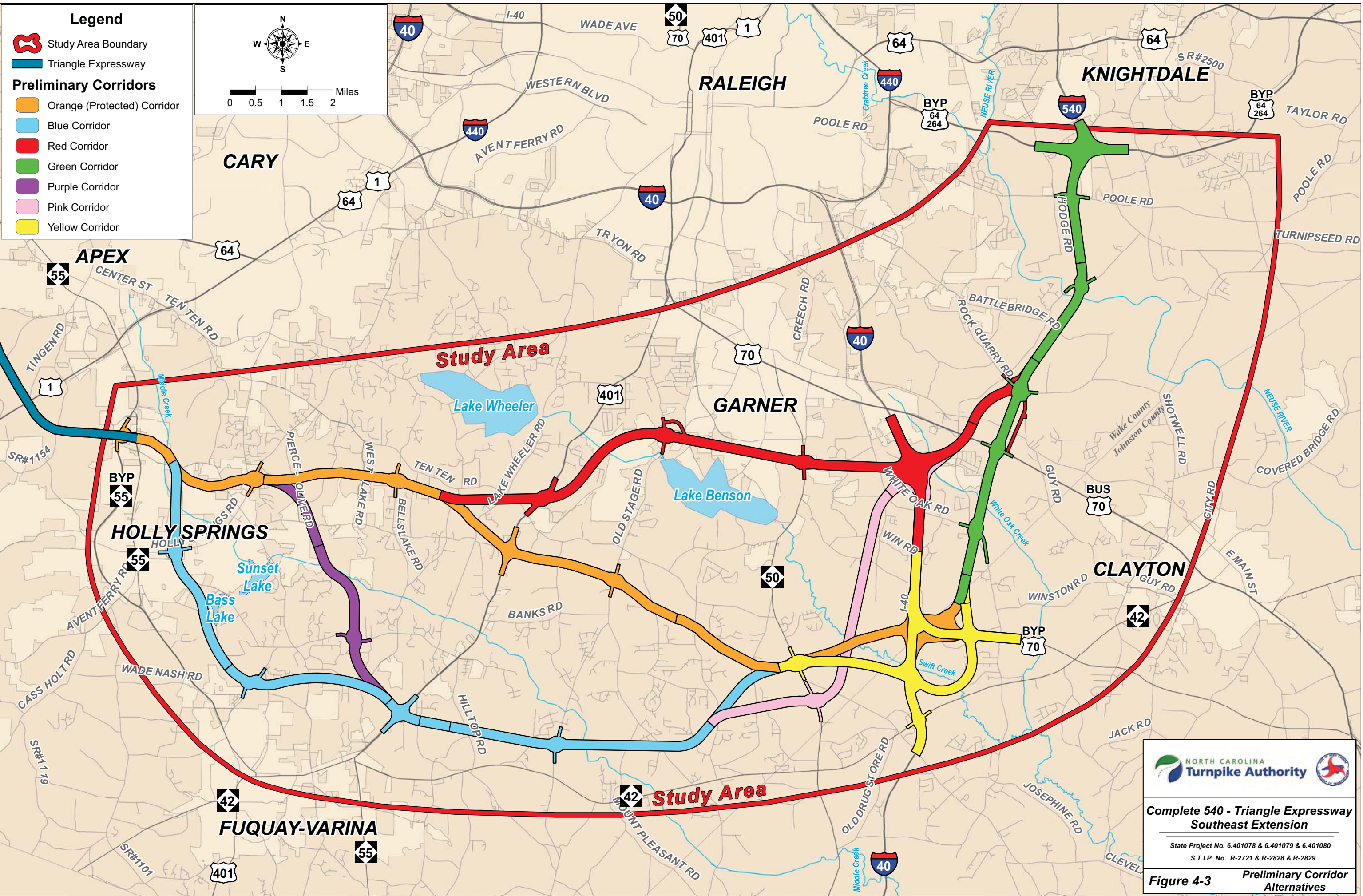


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Figure 4-2 Preliminary Corridors Following Second Tier Screening



Legend

- Study Area Boundary
- Triangle Expressway

Preliminary Corridors

- Orange (Protected) Corridor
- Blue Corridor
- Red Corridor
- Green Corridor
- Purple Corridor
- Pink Corridor
- Yellow Corridor

North Arrow

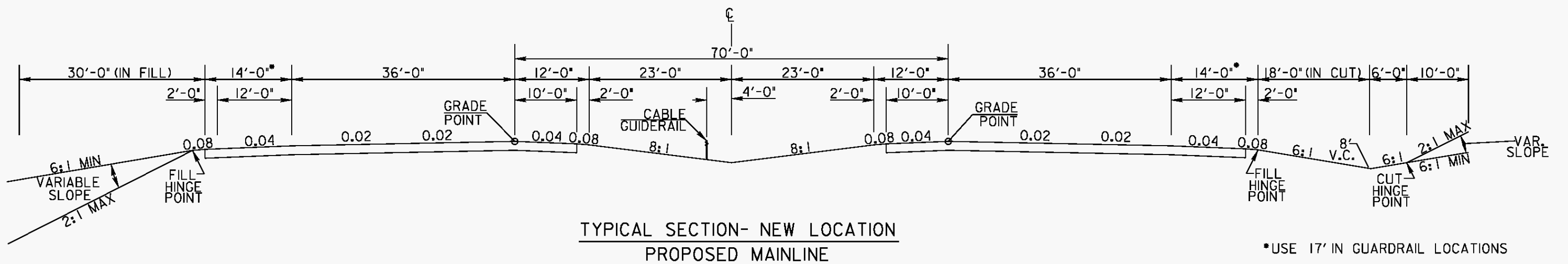
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Figure 4-3 Preliminary Corridor Alternatives

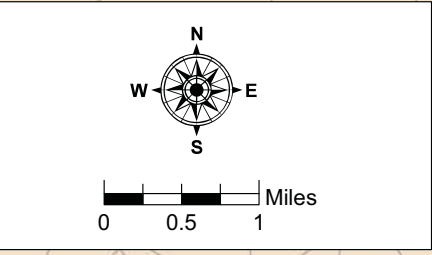
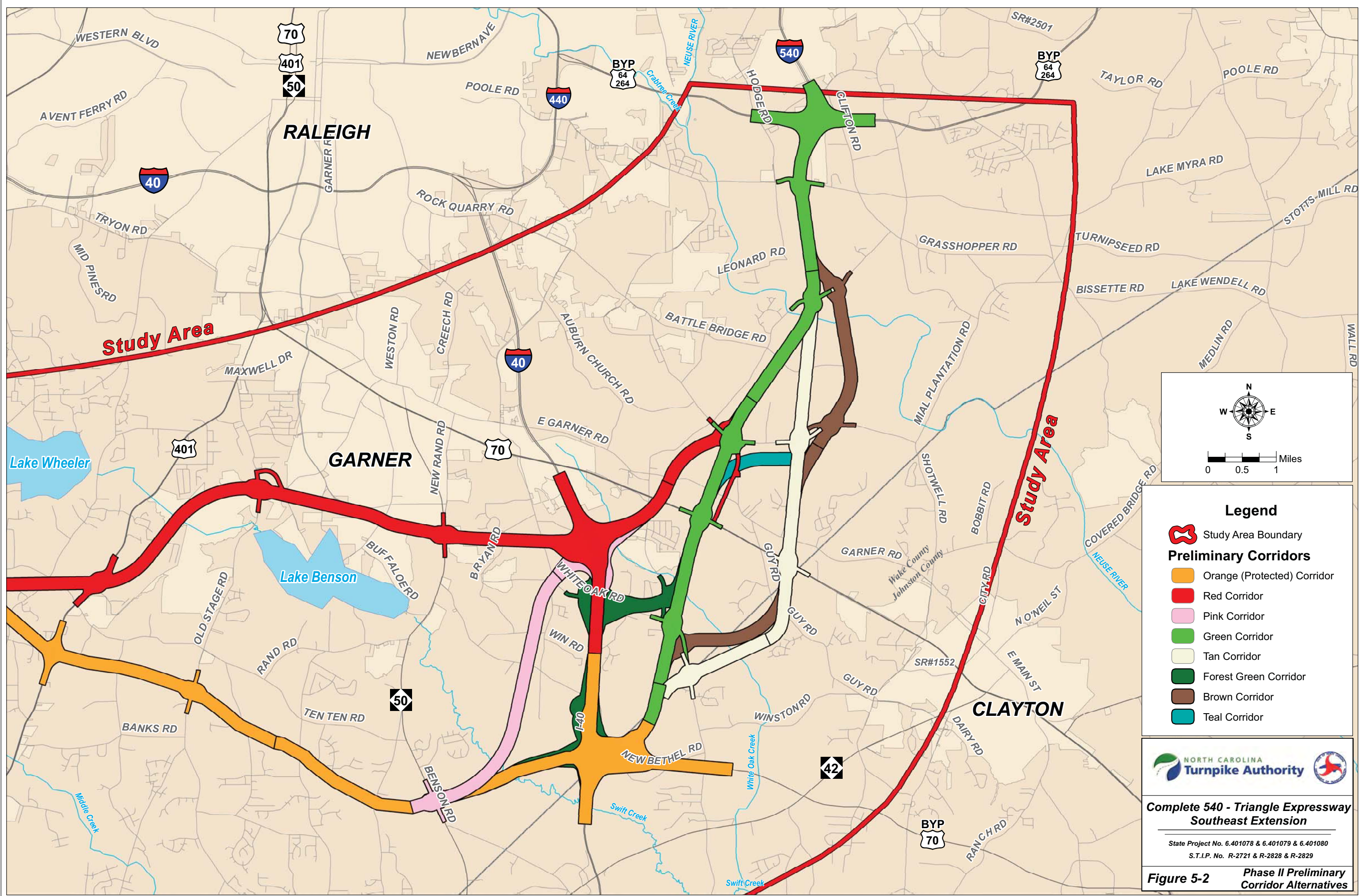




**Triangle Expressway
Southeast Extension**

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Figure 5-1 Typical Roadway
Cross Section



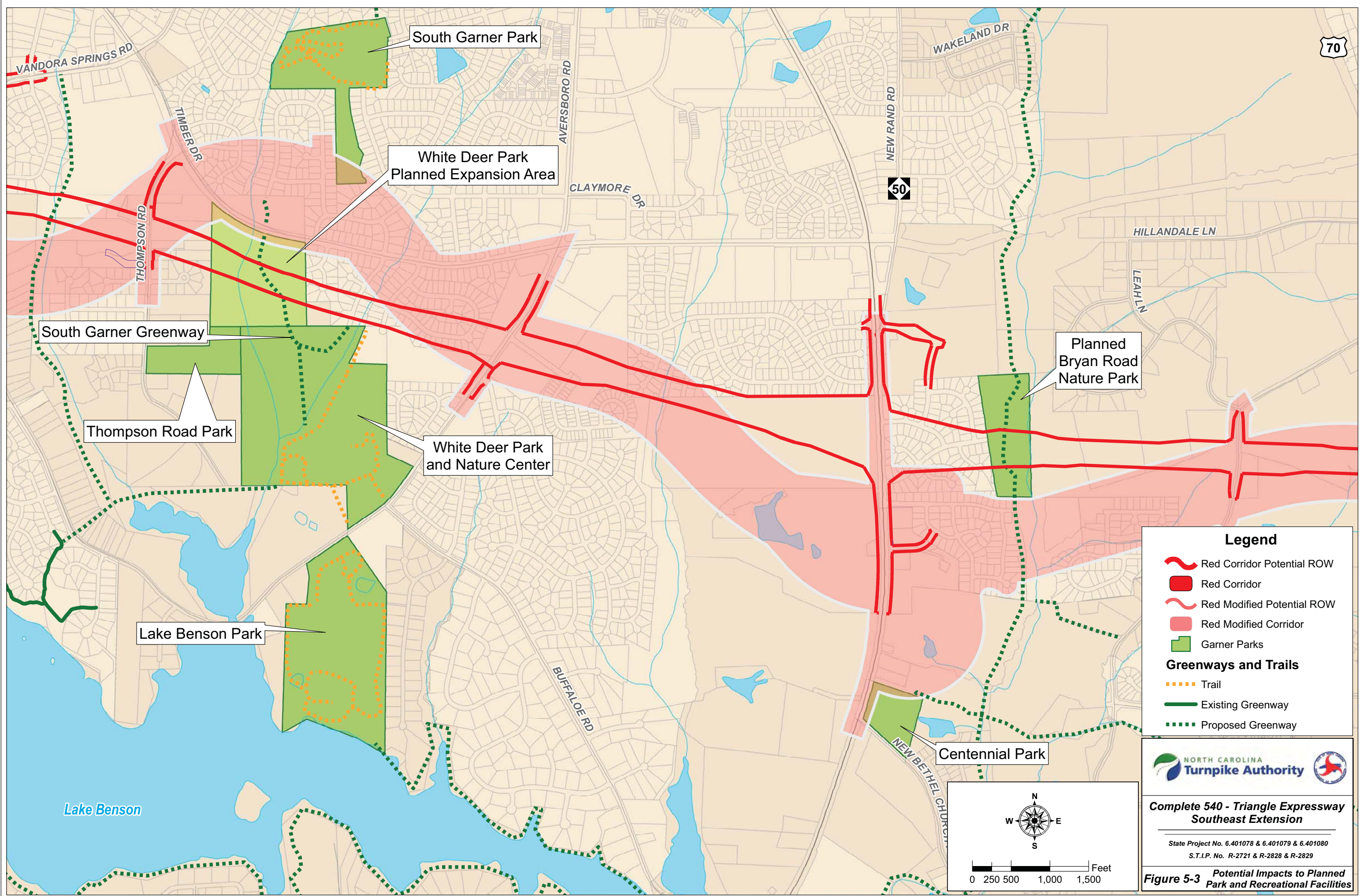
- Legend**
- Study Area Boundary
 - Preliminary Corridors**
 - Orange (Protected) Corridor
 - Red Corridor
 - Pink Corridor
 - Green Corridor
 - Tan Corridor
 - Forest Green Corridor
 - Brown Corridor
 - Teal Corridor



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Figure 5-2 Phase II Preliminary Corridor Alternatives



South Garner Park

White Deer Park
Planned Expansion Area

South Garner Greenway

Thompson Road Park

White Deer Park
and Nature Center

Lake Benson Park

Centennial Park

Planned
Bryan Road
Nature Park

Legend

- Red Corridor Potential ROW
- Red Corridor
- Red Modified Potential ROW
- Red Modified Corridor
- Garner Parks

Greenways and Trails

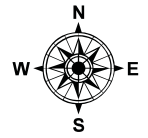
- Trail
- Existing Greenway
- Proposed Greenway



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**Figure 5-3 Potential Impacts to Planned
Park and Recreational Facilities**



0 250 500 1,000 1,500 Feet

70

50

VANDORA SPRINGS RD

TIMBER DR

THOMPSON RD

AVERSBORO RD

CLAYMORE DR

NEW RAND RD

WAKELAND DR

HILLANDALE LN

LEAH LN

BUFFALO RD

NEW BETHEL CHURCH

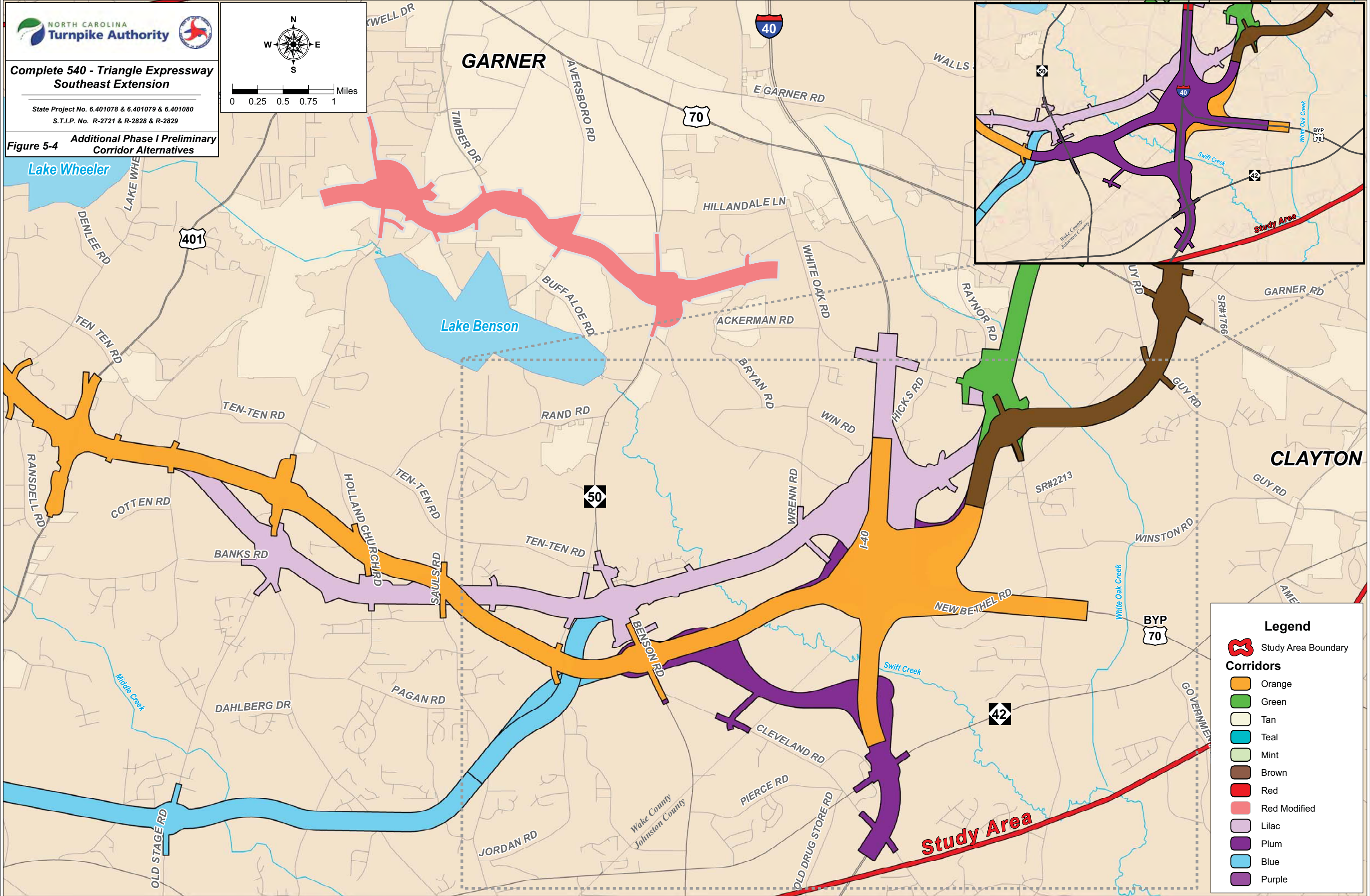
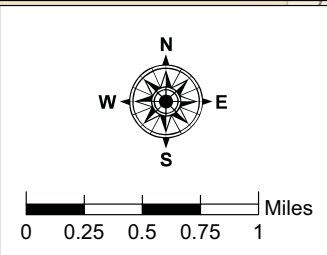
Lake Benson

NORTH CAROLINA Turnpike Authority

Complete 540 - Triangle Expressway Southeast Extension

State Project No. 6.401078 & 6.401079 & 6.401080
S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 5-4 Additional Phase I Preliminary Corridor Alternatives

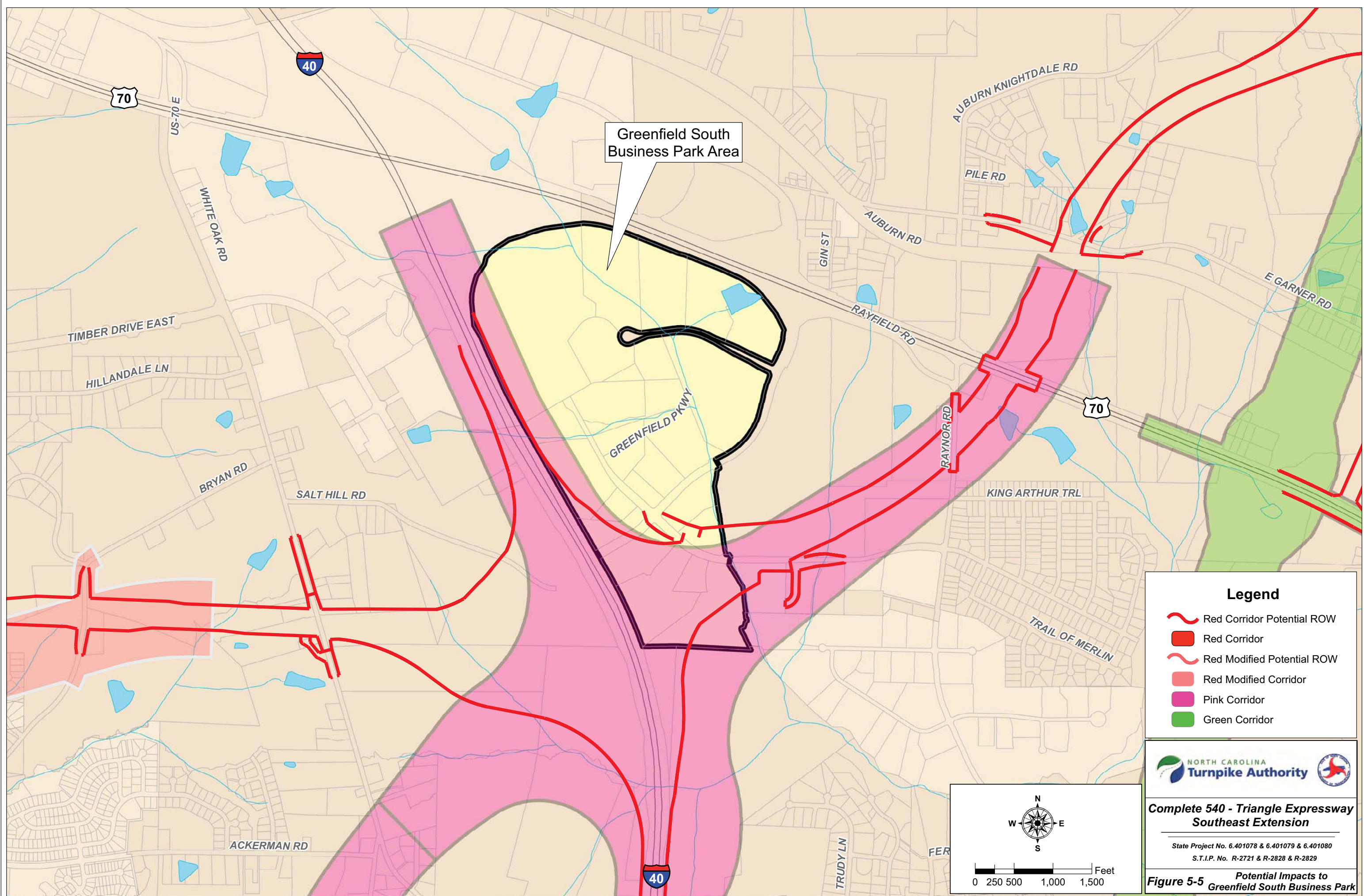


Legend

Study Area Boundary

Corridors

- Orange
- Green
- Tan
- Teal
- Mint
- Brown
- Red
- Red Modified
- Lilac
- Plum
- Blue
- Purple



Greenfield South Business Park Area

Legend

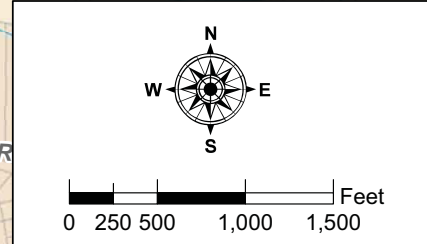
- Red Corridor Potential ROW
- Red Corridor
- Red Modified Potential ROW
- Red Modified Corridor
- Pink Corridor
- Green Corridor

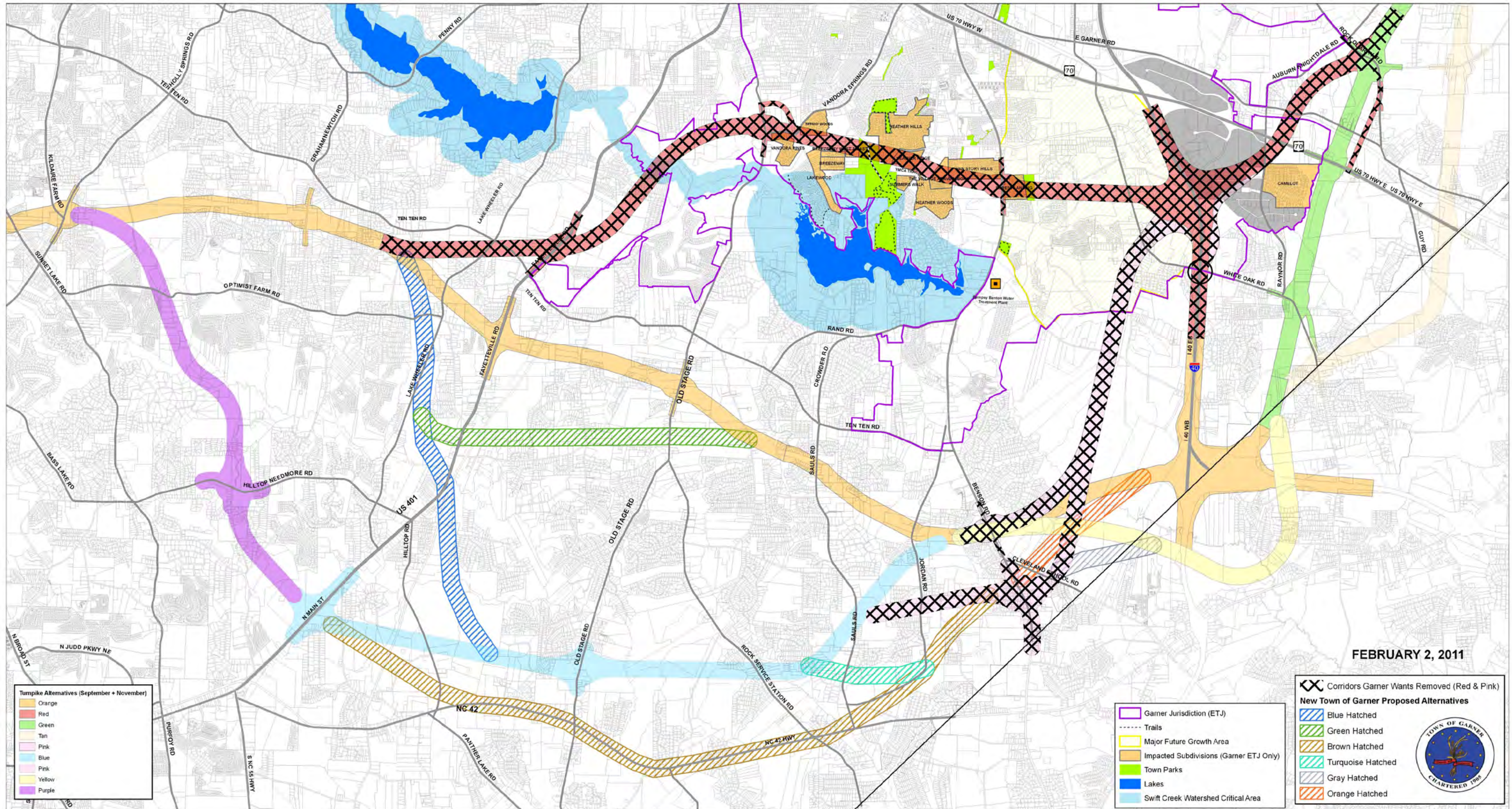


Complete 540 - Triangle Expressway Southeast Extension

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 S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 5-5 Potential Impacts to Greenfield South Business Park





FEBRUARY 2, 2011

- Turnpike Alternatives (September + November)**
- Orange
 - Red
 - Green
 - Tan
 - Pink
 - Blue
 - Purple

- Garner Jurisdiction (ETJ)
- Trails
- Major Future Growth Area
- Impacted Subdivisions (Garner ETJ Only)
- Town Parks
- Lakes
- Swift Creek Watershed Critical Area

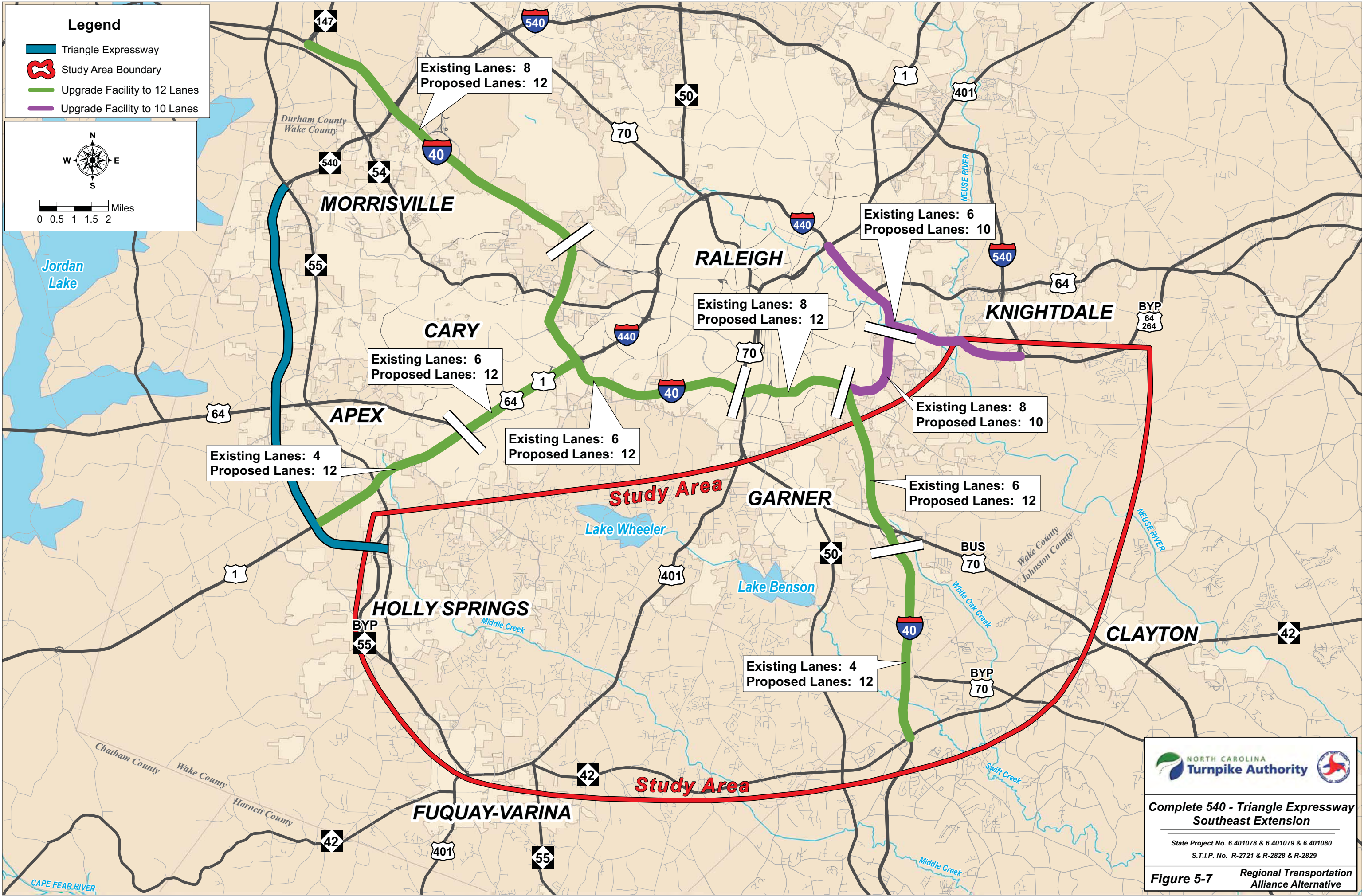
- Corridors Garner Wants Removed (Red & Pink)**
- New Town of Garner Proposed Alternatives**
- Blue Hatched
 - Green Hatched
 - Brown Hatched
 - Turquoise Hatched
 - Gray Hatched
 - Orange Hatched



**Complete 540 - Triangle Expressway
Southeast Extension**

State Project No. 6.401078 & 6.401079 & 6.401080
S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 5-6 Town of Garner
Proposed Alternatives



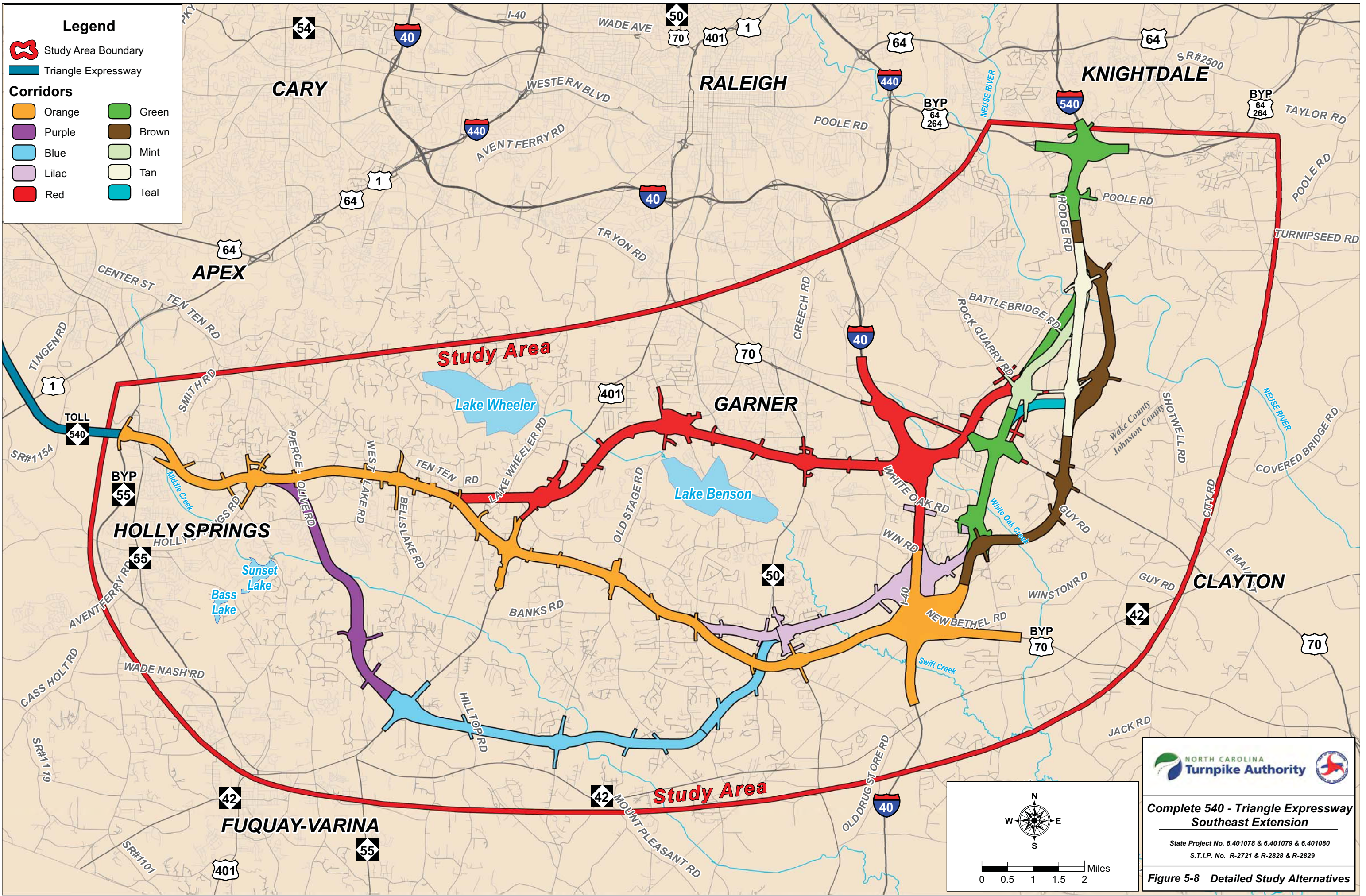


Complete 540 - Triangle Expressway Southeast Extension

State Project No. 6.401078 & 6.401079 & 6.401080

S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 5-7 *Regional Transportation Alliance Alternative*



Legend

- Study Area Boundary
- Triangle Expressway

Corridors

Orange	Green
Purple	Brown
Blue	Mint
Lilac	Tan
Red	Teal

NORTH CAROLINA Turnpike Authority

Complete 540 - Triangle Expressway Southeast Extension

State Project No. 6.401078 & 6.401079 & 6.401080
S.T.I.P. No. R-2721 & R-2828 & R-2829

Figure 5-8 Detailed Study Alternatives

North Arrow

Scale: 0 0.5 1 1.5 2 Miles

APPENDICES

APPENDIX A
Complete 540 – Triangle Expressway Southeast Extension
First Tier Screening Traffic Memorandum

To: Jennifer Harris, P.E.

Date: June 8, 2011

From: John Burris, PTP

STIP Project: R-2721,
R-2828, R-2829Subject: Southeast Extension - First Tier Screening Traffic
Memorandum

1.0 INTRODUCTION

The North Carolina Turnpike Authority (NCTA) contracted HNTB North Carolina, P.C. (HNTB) to provide future traffic data to be used in the first tier screening of alternative concepts in the *Alternatives Development and Analysis Report* for the Triangle Expressway Southeast Extension project. The two primary purposes of the project are improving mobility and reducing congestion on the road network in the project study area. Data analyzed as quantitative Measures of Effectiveness (MOE) for meeting these purposes include vehicle miles traveled (VMT), vehicle hours traveled (VHT), congested VMT, congested VHT, congested miles of roadway, average speed, and travel times between representative origins and destinations. The data were examined at a region-wide level and within the project traffic study area for 13 different preliminary alternative concepts. The traffic study area is shown in **Figure 1**.

2.0 ALTERNATIVE CONCEPTS EVALUATION

The Triangle Regional Model, Version 4-2008 (TRM), the Triangle Region's officially approved travel demand model, was the main source of information used to compare the alternative concepts. The TRM was adopted in 2008 after being developed by the Triangle Regional Model Service Bureau, which is housed at the Institute of Transportation Research and Education. The TRM was calibrated to exceed Federal Highway Administration (FHWA) model calibration standards using observed base-year data, before being adopted by the North Carolina Department of Transportation (NCDOT), local Metropolitan Planning Organizations (MPOs), and Triangle Transit. The aforementioned MOE data were only produced for 2035 project design year. For the purposes of this technical memorandum, the following alternative concepts were analyzed:

- **No-Build:** This alternative concept includes all projects in the fiscally-constrained Capital Area MPO Long Range Transportation Plan (LRTP) highway and transit networks, except the Southeast Extension.
- **Build:** This alternative concept is the official fiscally-constrained LRTP highway and transit networks with the Southeast Extension as a toll facility.
- **Hybrid #1:** This alternative concept includes all projects in the fiscally-constrained LRTP highway and transit networks except the eastern section (I-40 to US 64/264) of the

Southeast Extension. In place of the eastern section, I-440 (I-40 to US 1) and US 64/264 (I-440 to I-540) would be widened to 10 lanes.

- **Hybrid #2:** This alternative concept includes all projects in the fiscally-constrained LRTP highway and transit networks except the southern section (NC 55 to I-40) of the Southeast Extension. In place of the southern section, NC 55 (NC 540 to NC 42) and NC 42 (NC 55 to I-40) would be upgraded to six-lane controlled access facilities with service roads.
- **Hybrid #3:** This alternative concept includes all projects in the fiscally-constrained LRTP highway and transit networks except the southern section of the Southeast Extension. In place of the southern section, Jessie Drive (NC 540 to Ten Ten Road) and Ten Ten Road (Jessie Drive to I-40, including a new location facility east of NC 50) would be upgraded to six-lane controlled access facilities with service roads.
- **Upgrade Existing #1:** This alternative concept includes all projects in the fiscally-constrained LRTP highway and transit networks except the Southeast Extension. In place of the Southeast Extension, I-40 (US 70 to US 1/64), I-440 (I-40 to US 1), and US 64/264 (I-440 to I-540) would be all widened to 12 lanes.
- **Upgrade Existing #2 – Freeway:** This alternative concept includes all projects in the fiscally-constrained LRTP highway and transit networks except the Southeast Extension. In place of the Southeast Extension, NC 55 (NC 540 to NC 42) and NC 42 (NC 55 to I-40) would be upgraded to six-lane controlled access facilities with service roads. I-440 (I-40 to US 1) and US 64/264 (I-440 to I-540) are widened to 12 lanes.
- **Upgrade Existing #2 – Arterial:** This alternative concept includes all projects in the fiscally-constrained LRTP highway and transit networks except the Southeast Extension. In place of the Southeast Extension, NC 55 (NC 540 to NC 42) and NC 42 (NC 55 to I-40) would be widened to six-lane arterials. I-440 (I-40 to US 1) and US 64/264 (I-440 to I-540) are widened to 12 lanes.
- **Upgrade Existing #3 – Freeway:** This alternative concept includes all projects in the fiscally-constrained LRTP highway and transit networks except the Southeast Extension. In place of the Southeast Extension, Jessie Drive (NC 540 to Ten Ten Road) and Ten Ten Road (Jessie Drive to I-40, including a new location facility east of NC 50) would be upgraded to six-lane controlled access facilities with service roads. I-440 (I-40 to US 1) and US 64/264 (I-440 to I-540) are widened to 12 lanes.
- **Upgrade Existing #3 – Arterial:** This alternative concept includes all projects in the fiscally-constrained LRTP highway and transit networks except the Southeast Extension. In place of the Southeast Extension, Jessie Drive (NC 540 to Ten Ten Road) and Ten Ten Road (Jessie Drive to I-40, including a new location facility east of NC 50) would be upgraded to six-lane arterials. I-440 (I-40 to US 1) and US 64/264 (I-440 to I-540) are widened to 12 lanes.

- **Mass Transit:** This alternative concept includes the expansion of existing bus service and the addition of light rail service within the traffic study area, as well as all roadway projects from the fiscally constrained LRTP except the Southeast Extension.
- **Travel Demand Management (TDM):** This alternative concept can include a number of methods that aim at reducing congestion during the peak time periods. Some options, such as ridesharing or telecommuting, take vehicles off the road completely during the peak work commute periods. Other options, such as staggered work hours, do not take vehicles off the road but attempt to decrease the number of vehicles during the peak periods.
- **Transportation System Management (TSM):** This alternative concept involves minor improvements (signal timing, ramp meters, variable message signs, etc.) meant to maximize the efficiency of traffic flow on an existing facility. TSM improvements are typically limited to freeway/expressway and major arterial facilities.

Additional descriptions of the alternative concepts can be found in the *Alternatives Development and Analysis Report* for the project.

All new-location facilities included in the alternative concepts were modeled as toll facilities. In addition, the portions of existing roadways that were upgraded to controlled-access facilities were also modeled as toll facilities. Because current law requires a free alternative route, “non-toll” service roads were added to the model network to provide a parallel free alternative and address businesses and communities whose access points onto the roadway network were altered. All facilities without control of access were modeled as “non-toll” due to the inability to toll a facility without controlled-access. Improvements to existing controlled-access facilities, e.g. I-40/I-440, were not considered to be tolled in the future for this analysis.

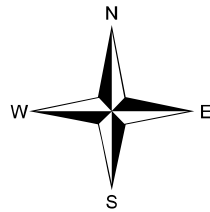
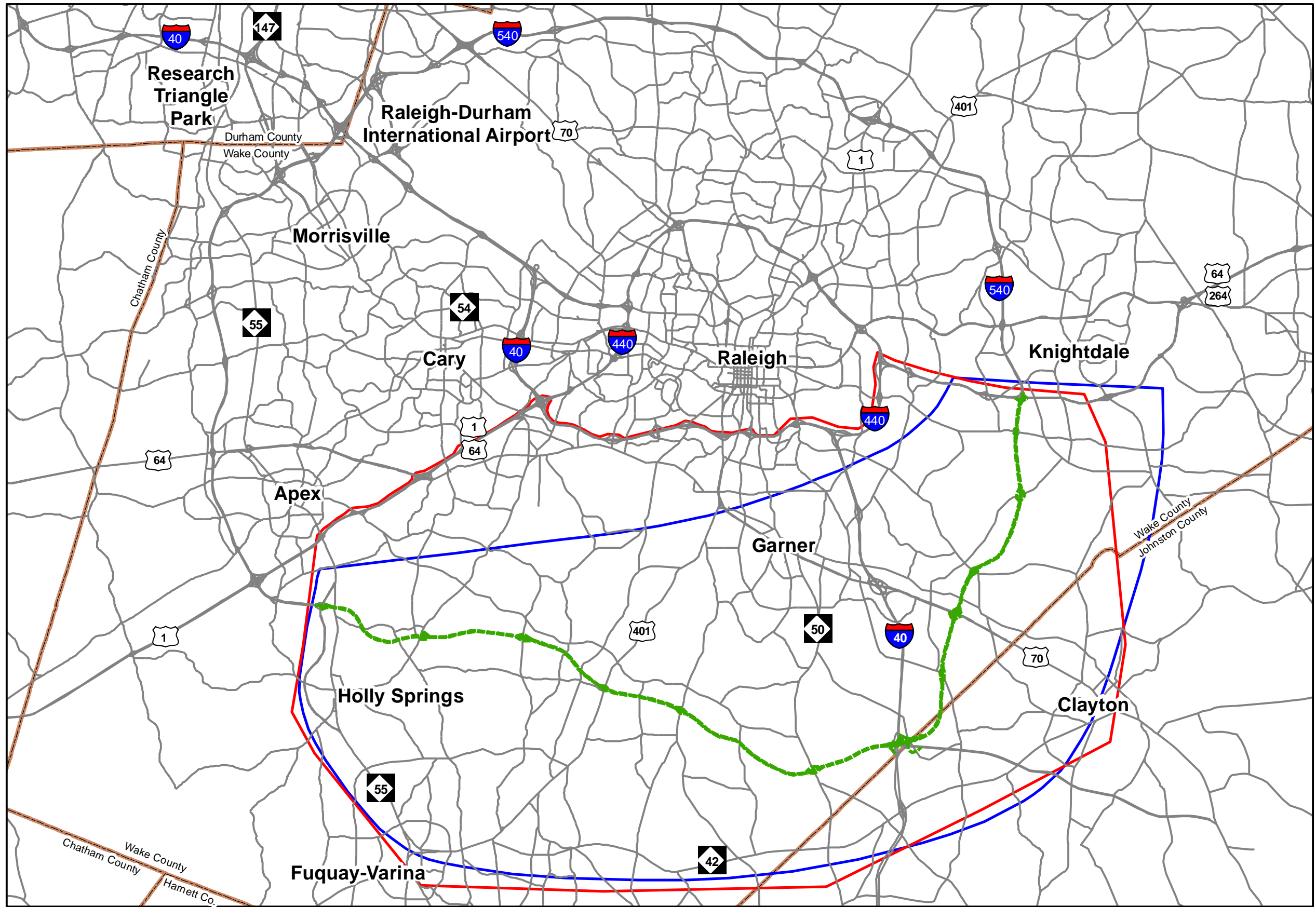
A traffic study area that differs from the original project study area was created for this memorandum. Both study areas are shown in **Figure 1**. The traffic study area generally coincides with the project study area except the traffic study area was expanded to include I-40/I-440 to the north and US 1/64 to the west. This was done to better capture the effects that the various alternative concepts would have on more of the Triangle area’s roadway network.

Specific travel origins and destinations for typical commuters in the traffic study area were selected based on employment center locations and more densely populated residential land uses within the traffic study area. The travel times analyzed in this study were calculated using the travel time forecast by TRM for trips between Traffic Analysis Zones (TAZs) for each selected location best representing the center of its activity.

3.0 VEHICLE MILES TRAVELED & VEHICLE HOURS TRAVELED ANALYSIS

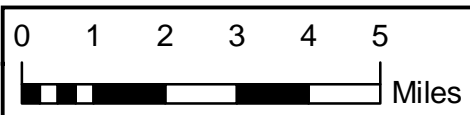
As previously mentioned, the TRM was the main tool used to generate, analyze, and calculate the 2035 traffic data used to evaluate MOEs for improving mobility and reducing congestion. Complete TRM model runs were conducted for each alternative concept, except mass transit, TDM, and TSM. These alternative concepts were not modeled due to the complexity and uncertainty of their implementation when compared to the construction of a roadway project.

Southeast Extension
Figure 1
Traffic Study Area
HNTB Project # 46816
Date: May 2011



Legend

- Southeast Extension
- 2035 Highway Network
- Traffic Study Area
- Project Study Area
- Counties



HNTB, North Carolina, PC
 343 East Six Forks Road, Suite 200
 Raleigh, NC 27609

Other approaches were used to estimate the traffic effects of these alternative concepts. Published studies of the relative effectiveness of mass transit, TDM, and TSM on improving network operations were also reviewed to estimate the effects of these alternative concepts.

The following sections explain the methodology used to calculate each MOE data set and the results of the calculations.

3.1 Daily Vehicle Miles Traveled (VMT) & Vehicle Hours Traveled (VHT)

The VMT and VHT for each modeled alternative concept were extracted from the loaded TRM highway networks. VMT & VHT were calculated for both region-wide model traffic assignment and within the project traffic study area, for comparison purposes, for daily traffic flows. The region-wide totals account for every roadway modeled in the TRM, while the traffic study area only incorporates roadways from the TRM that fall within the traffic study area boundary. VHT provides an MOE for comparing the alternative concepts' ability to meet the project purpose of reducing traffic congestion. The results are shown in **Table 1**.

Both regionally, and within the traffic study area, the Build, Hybrid 1, Hybrid 3, and Upgrade Existing 3-Freeway alternatives provide the largest VHT reduction compared to the No-Build Alternative. The other Upgrade Existing alternatives, particularly the arterial options, reduce VHT the least. None of the roadway improvement options decrease VMT within the traffic study area. This is due to the model traffic assignment methodology whereby drivers will select new routes that are longer in distance but faster in terms of travel time to reach their destinations.

Table 1: 2035 Average Daily VMT & VHT Comparisons from TRM Output

Alternative Concept	Region Wide				Traffic Study Area			
	VMT (miles)	VHT (hours)	VMT Change	VHT Change	VMT (miles)	VHT (hours)	VMT Change	VHT Change
No-Build	81,871,630	1,612,707	-	-	16,497,477	322,833	-	-
Build	81,897,341	1,590,573	0.03%	-1.37%	16,858,401	311,621	2.19%	-3.47%
Hybrid 1	81,827,565	1,598,014	-0.05%	-0.91%	16,702,564	315,093	1.24%	-2.40%
Hybrid 2	82,096,600	1,602,195	0.27%	-0.65%	16,916,388	319,482	2.54%	-1.04%
Hybrid 3	81,949,291	1,593,091	0.09%	-1.22%	16,895,096	313,038	2.41%	-3.03%
Upgrade 1	81,930,906	1,604,549	0.07%	-0.51%	16,784,053	321,977	1.74%	-0.27%
Upgrade 2 - Arterial	81,810,146	1,605,793	-0.08%	-0.43%	16,597,197	320,563	0.60%	-0.70%
Upgrade 2 - Freeway	82,085,077	1,606,168	0.26%	-0.41%	16,825,414	320,235	1.99%	-0.80%
Upgrade 3 - Arterial	81,812,605	1,601,620	-0.07%	-0.69%	16,634,272	317,757	0.83%	-1.57%
Upgrade 3 - Freeway	81,896,763	1,598,745	0.03%	-0.87%	16,778,930	316,609	1.71%	-1.93%

Mass Transit Alternative Methodology

Model runs were not done for the mass transit alternative. A detailed transit study would be needed in order to assess transit routes and service characteristics required by the TRM. Instead, requirements to improve the existing transit system in the Triangle needed to meet the Build alternative VHT reduction (compared to the No-Build alternative) were estimated using the following assumptions.

- The average work trip in 2035 is projected to be 12 miles in length and take 23 minutes. The TRM only calculates these values on a region-wide basis.
- The average bus can accommodate 50 passengers¹.
- The average light rail train can accommodate 150 passengers².
- A vehicle occupancy rate of one (1.0) persons per vehicle was used to conservatively calculate the maximum equivalent transit capacity needed (total daily number of buses and light rail trains).

Taking these assumptions into account, for the region-wide VHT reductions to equal that of the Build alternative, nearly 1,200 additional buses (at maximum capacity) or nearly 400 additional full light rail trains (at maximum capacity) would be needed on a daily basis. In the same manner, the traffic study area alone would require an additional 600 full buses or nearly 200 additional light rail trains daily to achieve the VHT reduction provided by the Build Alternative. These basic analyses also imply that the transit capacity provided is at full loading – in reality, additional bus/train capacity would be required to provide adequate service for these demand estimates.

Triangle Transit, the Triangle’s regional transit provider, currently has 16 transit routes region-wide that run slightly more than 400 buses daily. Only four of those routes (40 buses daily) enter the traffic study area. The buses rarely are used at full-capacity. Assuming the existing 40 buses are nearly empty, approximately 1,160 additional buses would be needed region-wide. This equates to an increase of nearly 200 percent in buses run. The traffic study area would require a minimum increase of over 1,300 percent in buses run compared to the current service. Triangle Transit currently has no light rail service.

The data presented above shows that although transit can complement other transportation improvements, the travel demand in the traffic study area exceeds the ability for transit alone to provide service levels that would match the VHT benefits provided by the Build alternative.

Travel Demand Management (TDM) Methodology

TDM was also not specifically modeled in the TRM. TDM improvements include options such as telecommuting or ridesharing. The TRM is designed to address roadway and transit projects, while TDM improvements are primarily policy-based programs that cannot explicitly be captured as inputs to be calibrated by the TRM. Similar to the mass transit alternative methodology outlined above, the 2035 work trip attributes, along with projected employment totals in each TAZ, were used to calculate the threshold needed to meet the Build alternative VHT reduction compared to the No-Build alternative. The regional 2035 employment projection is approximately 1.3 million³. The 2035 traffic study area employment projection is 200,000⁴. Nearly 58,000 people throughout the region and 30,000 in the traffic study area would need to use a form of TDM on a daily basis to equal the VHT reductions achieved by the Build alternative. These employment estimates were calculated by converting the Build

¹ Triangle Transit

² Triangle Transit

³ Triangle Regional Model 2035 Socio-Economic Data

⁴ Triangle Regional Model 2035 Socio-Economic Data

alternative concept VHT reductions to total travel minutes and then dividing them by 23, the average time for a 2035 work trip.

There are several barriers to achieve such large telecommuting or ridesharing projections. For example, many types of jobs, such as industrial or medical, could not be performed via telecommuting. Studies also show that those who telecommute often make many trips throughout the day that would not normally be made if they worked in an office⁵. Ridesharing can serve to compliment transportation improvements; however, ridesharing alone cannot be implemented on a scale necessary to match the VHT benefits provided by the Build alternative.

Transportation System Management (TSM) Methodology

TSM was also estimated without a specific TRM model run. TSM involves minor improvements (signal timing, ramp meters, variable message signs, incident management) meant to maximize the efficiency of traffic flow on highway or larger arterial facilities. Because these improvements are localized and can be very specific to changing traffic conditions, they cannot be modeled at a “macro” level in a regional travel demand model. TSM improvements are better measured for specific locations in microscopic traffic simulation programs or through deterministic Highway Capacity Manual (HCM) techniques. .

Specific TSM studies conducted in similar areas to that of the SE Extension study area show that TSM improvements, on average, can increase the speeds on the improved facilities by 2 to 3 percent⁶ in areas similar in size to the Research Triangle. Roughly 45 percent of regional VHT and 53 percent of traffic study area VHT occur on TSM-eligible facilities. If all regional TSM-eligible facilities were improved, resulting in a 2.5 percent decrease in VHT on those facilities, the VHT reduction would still be less than that achieved by the Build alternative by approximately 3,700 VHT (a 1.1 percent reduction compared to the No-Build). The same occurs at the traffic study area level as well with 7,000 less VHTs (1.3 percent) reduced than in the Build alternative.

3.2 Daily Congested Vehicle Miles Traveled & Vehicle Hours Traveled

Daily congested VMT and VHT were identified as a MOE for comparing each alternative concept’s ability to meet the project purpose of reducing congestion. The congested VMT and VHT data were extracted from the loaded TRM highway networks. Links with daily volume over capacity (VOC) ratios of greater than 0.80 were considered to be “congested” and were included in the data set developed for each alternative concept. A VOC ratio of 0.80 or greater was chosen as the threshold because it typically equals a Highway Capacity Manual Level of Service (LOS) of D or worse. Average daily congested VMT & VHT were calculated region-wide and within the project traffic study area, for comparison purposes. The results are shown in **Table 2**.

⁵ Travel Demand Management: An Analysis of the Effectiveness of TDM Plans in Reducing Traffic and Parking in the Minneapolis-St. Paul Region (2010); Spack Consulting

⁶ New Mississippi River Bridge Traffic Analysis Report (2004); HNTB
Southeast Extension - First Tier Screening Traffic Memorandum

Table 2: 2035 Average Daily Congested VMT & VHT Comparisons from TRM Output

Alternative Concept	Region Wide				Traffic Study Area			
	VMT	VHT	VMT Change	VHT Change	VMT	VHT	VMT Change	VHT Change
No-Build	7,396,726	220,806	-	-	2,093,486	54,421	-	-
Build	6,432,240	193,662	-13.04%	-12.29%	1,166,255	31,288	-44.29%	-42.51%
Hybrid 1	6,957,677	209,203	-5.94%	-5.25%	1,496,439	40,048	-28.52%	-26.41%
Hybrid 2	7,538,311	219,580	1.91%	-0.56%	1,993,777	50,329	-4.76%	-7.52%
Hybrid 3	6,511,622	197,106	-11.97%	-10.73%	1,194,324	32,699	-42.95%	-39.92%
Upgrade 1	6,991,211	212,520	-5.48%	-3.75%	1,572,228	45,741	-24.90%	-15.95%
Upgrade 2 - Arterial	7,218,348	214,413	-2.41%	-2.90%	1,875,676	47,939	-10.40%	-11.91%
Upgrade 2 - Freeway	7,366,120	220,417	-0.41%	-0.18%	1,850,911	49,394	-11.59%	-9.24%
Upgrade 3 - Arterial	7,252,950	214,017	-1.94%	-3.07%	1,689,758	43,935	-19.28%	-19.27%
Upgrade 3 - Freeway	7,104,094	211,570	-3.96%	-4.18%	1,673,174	43,629	-20.08%	-19.83%

Regionally, and within the traffic study area, the Build, Hybrid 1, and Hybrid 3 alternatives reduce average daily congested VHT the most, in comparison to the No-Build Alternative. The Hybrid 2 and Upgrade Existing 2-Freeway alternatives have the smallest effect on VHT. VMT reductions followed the same pattern as the VHT reduction, when comparing results between alternative concepts.

The mass transit, TDM, and TSM alternative concepts were not modeled in the TRM for congested network sections for the same reasons as described in the previous section. Region-wide congested VHT reduction totals equaling improvements between the Build and No-Build alternatives would require an additional 1,400 buses at maximum capacity or 500 light rail trains at maximum capacity on a daily basis, using the previously described methodologies for converting VHT reduction in terms of bus/rail capacity. The traffic study area would need 1,200 buses or 400 light rail trains on a daily basis.

The TDM alternative would require nearly 71,000 people (over 10 percent of maximum TDM-eligible) region-wide to use a form of TDM for their work trip to equal the congested VHT reductions of the Build alternative. The traffic study area would require the use of TDM by over 60,000 (nearly 60 percent of maximum TDM-eligible) employees.

TSM alternative concepts would also not feasibly be able to reduce congested VHT impacts on a similar scale as the Build alternative. The differences in VHT reduction increased from the daily VMT & VHT totals, causing TSM effectiveness to be even less.

3.3 PM Peak Congested Vehicle Miles Traveled & Vehicle Hours Traveled

While daily congested VMT and VHT statistics provide useful MOE for comparison between alternative concepts, HNTB also examined these conditions during the PM peak period to further evaluate impacts on reducing congestion. The PM peak period in the TRM assigns traffic on network links from 3:00 PM to 7:00 PM. The 2035 PM peak highway assignments from the TRM for each alternative were used to calculate totals for both region-wide and within the traffic study area. The congested VMT and VHT totals are much greater for the PM peak

than the daily totals, due to the requirement of a highway link needing only a PM Peak VOC of 0.80 or higher compared to that of a daily VOC above 0.80. The results are shown in **Table 3**.

Table 3: 2035 Average PM Peak Congested VMT & VHT Comparisons

Alternative Concept	Region Wide				Traffic Study Area			
	VMT	VHT	VMT Change	VHT Change	VMT	VHT	VMT Change	VHT Change
No-Build	25,557,947	605,006	-	-	6,549,416	146,271	-	-
Build	23,189,092	542,852	-9.27%	-10.27%	4,844,007	102,325	-26.04%	-30.04%
Hybrid 1	23,458,239	555,970	-8.22%	-8.11%	4,960,427	110,969	-24.26%	-24.13%
Hybrid 2	24,226,857	570,018	-5.21%	-5.78%	5,682,614	123,170	-13.23%	-15.79%
Hybrid 3	23,205,479	545,635	-9.20%	-9.81%	4,750,561	102,547	-27.47%	-29.89%
Upgrade 1	23,692,350	565,743	-7.30%	-6.49%	5,592,004	128,035	-14.62%	-12.47%
Upgrade 2 - Arterial	24,304,812	575,241	-4.90%	-4.92%	5,897,955	129,384	-9.95%	-11.54%
Upgrade 2 - Freeway	23,966,905	572,246	-6.23%	-5.41%	5,388,014	122,479	-17.73%	-16.27%
Upgrade 3 - Arterial	23,231,067	554,800	-9.10%	-8.30%	4,947,718	112,219	-24.46%	-23.28%
Upgrade 3 - Freeway	23,368,727	556,822	-8.57%	-7.96%	5,032,733	113,805	-23.16%	-22.20%

Regionally, and within the traffic study area, the Build, Hybrid 1, and Hybrid 3 alternatives reduce congested VHT the most in the PM peak period. The Upgrade Existing 1 and Upgrade Existing 2-Arterial alternatives have the smallest effect on PM peak congested VHT. PM peak congested VMT reductions followed the same pattern as PM peak congested VHT reductions when comparing results between alternative concepts.

Mass transit was not modeled but was calculated for demand and capacity required via the methodologies previously defined. Over 3,200 buses or nearly 1,100 light rail trains would be needed regionally to equalize the offset of congested PM peak VHT experienced in the Build alternative. The traffic study area would require 2,300 additional buses and 800 light rail trains.

TDM and TSM alternative concepts were also not modeled. Approximately 162,000 employees regionally would need to utilize some form of TDM that involves taking a vehicle off the road during the PM peak period. The traffic study area would require nearly 115,000 employees to use TDM during the PM peak.

TSM alternative concepts would also not feasibly reduce congested PM peak VHT impacts on a similar scale as the Build alternative. The differences in VHT reduction increased from the PM Peak VMT & VHT totals, causing TSM effectiveness to be even less.

4.0 AVERAGE SPEED ANALYSIS

Average network speed is a useful MOE in evaluating and comparing the ability of alternative concepts to meet the project purpose of improving mobility. The TRM was used to calculate the average 2035 speeds for each alternative concept. The average daily and average PM peak speeds account for all links in the 2035 TRM highway network, except the centroid connectors used by the TAZs to load traffic onto the network. The centroid connectors were omitted because they are representative for the TAZ loading patterns and often do not correspond with a particular roadway facility.

4.1 Average Daily Speed

2035 average daily speeds were calculated using the TRM. The results for all model alternative concepts are shown in **Table 4**.

Table 4: 2035 Average Daily Speed Comparisons

Alternative Concept	Region Wide		Traffic Study Area	
	Speed (MPH)	Speed Change	Speed (MPH)	Speed Change
No-Build	50.8	-	51.1	-
Build	51.5	1.4%	54.1	5.9%
Hybrid 1	51.2	0.9%	53.0	3.7%
Hybrid 2	51.2	0.9%	52.9	3.6%
Hybrid 3	51.4	1.3%	54.0	5.6%
Upgrade 1	51.1	0.6%	52.1	2.0%
Upgrade 2 - Arterial	50.9	0.4%	51.8	1.3%
Upgrade 2 - Freeway	51.1	0.7%	52.5	2.8%
Upgrade 3 - Arterial	51.1	0.6%	52.3	2.4%
Upgrade 3 - Freeway	51.2	0.9%	53.0	3.7%

The alternative concepts involving new alignment toll road improvements experienced the largest increases in average speeds over the No-Build Alternative, with the Build and Hybrid 3 alternatives having the greatest positive impacts versus the No-Build. The alternative concepts involving upgrading existing arterials had the least positive impacts on average network speeds.

The mass transit, TDM, and TSM alternative concepts were not modeled with respect to speed. While additional mass transit could potentially improve average daily speeds in the region and study area, a substantially higher percentage of buses could potentially decrease speeds on the major arterial facilities in the highway network, due to their slower acceleration/deceleration characteristics and increased amount of stops along arterial facilities. TDM would require an unreasonable amount of usage by regional and traffic study area workers to be as effective as the Build alternative. While TSM could improve speeds on freeways/expressways and major arterials by 2-3 percent, these facilities only account for 20 percent of the regional highway network (nearly 6,000 miles) and 30 percent of traffic study area roadway facilities (nearly 900 miles) in the 2035 TRM.

4.2 Average PM Peak Speed

2035 PM peak average speeds were calculated using the TRM. The PM peak average speeds are an output of the model runs. The results for all alternative concepts are shown in **Table 5**.

The alternative concepts had varying effects on the average PM peak speeds. The Build, Hybrid 2, Hybrid 3, and Upgrade Existing 2-Arterial alternatives all saw increases in speed. All other alternative concepts saw some type of decrease in the average PM peak speeds.

The mass transit, TDM, and TSM alternative concepts were not modeled. For the same reasons identified in **Section 4.1**, these alternative concepts would not improve average PM peak speeds within the region or traffic study area.

Table 5: Southeast Extension 2035 Average PM Peak Speed Comparisons

Alternative Concept	Region Wide		Traffic Study Area	
	Speed	Speed Change	Speed	Speed Change
No-Build	42.2	-	44.8	-
Build	42.7	1.1%	47.3	5.7%
Hybrid 1	42.2	-0.1%	44.7	-0.2%
Hybrid 2	42.5	0.6%	46.1	3.0%
Hybrid 3	42.5	0.7%	46.3	3.5%
Upgrade 1	41.9	-0.9%	43.7	-2.5%
Upgrade 2 - Arterial	42.3	0.0%	45.6	1.8%
Upgrade 2 - Freeway	41.9	-0.9%	44.0	-1.8%
Upgrade 3 - Arterial	41.9	-0.9%	44.1	-1.5%
Upgrade 3 - Freeway	42.0	-0.7%	44.2	-1.2%

5.0 CONGESTED ROADWAY MILEAGE

5.1 Daily Congested Roadway Mileage

The total daily congested roadway lane mileage, another MOE for evaluating reduction in congestion, was determined using the TRM. Model runs were used to calculate links in the highway network with a daily VOC above 0.80. The lengths of the links were multiplied by their number of lanes and then totaled to determine the regional and traffic study area congested lane mileage. The results are shown below in **Table 6**.

Table 6: Southeast Extension 2035 Daily Congested Roadway Lane Mileage

Alternative Concept	Region Wide		Study Area	
	Lane Mileage	Change	Lane Mileage	Change
No-Build	483.1	-	119.3	-
Build	423.6	-12.3%	68.1	-42.9%
Hybrid 1	458.7	-5.0%	85.2	-28.6%
Hybrid 2	484.4	0.3%	110.6	-7.3%
Hybrid 3	432.0	-10.6%	72.2	-39.5%
Upgrade 1	463.3	-4.1%	96.7	-18.9%
Upgrade 2 - Arterial	466.6	-3.4%	104.2	-12.6%
Upgrade 2 - Freeway	481.1	-0.4%	103.7	-13.1%
Upgrade 3 - Arterial	470.1	-2.7%	94.6	-20.7%
Upgrade 3 - Freeway	464.4	-3.9%	94.2	-21.0%

Mass transit, TDM, and TSM could provide improvements to the congested roadway network. However, these improvements would likely be very minor when compared to the roadway construction alternatives.

The Build and Hybrid 3 alternatives reduce the region-wide congested lane mileage more than any other roadway improvement alternative. These two alternative concepts, along with the Hybrid 1 alternative, have the largest impact on congested roadway mileage in the traffic study area.

5.2 PM Peak Congested Roadway Lane Mileage

The total PM peak congested roadway lane mileage was determined using the TRM. Model runs were used to calculate links in the highway network with a PM peak VOC above 0.80. The lengths of the links were then multiplied by their number of lanes and totaled to determine the regional and traffic study area congested mileage. The PM peak totals were much higher than the daily totals. The results are show below in **Table 7**.

Table 7: Southeast Extension 2035 PM Peak Congested Roadway Lane Mileage

Alternative Concept	Region Wide		Study Area	
	Lane Mileage	% Change	Lane Mileage	% Change
No-Build	1,919.6	-	450.8	-
Build	1,733.6	-9.7%	330.2	-26.8%
Hybrid 1	1,757.0	-8.5%	342.9	-23.9%
Hybrid 2	1,795.3	-6.5%	374.1	-17.0%
Hybrid 3	1,732.3	-9.8%	323.5	-28.2%
Upgrade 1	1,796.3	-6.4%	405.4	-10.1%
Upgrade 2 - Arterial	1,823.5	-5.0%	405.9	-9.9%
Upgrade 2 - Freeway	1,797.1	-6.4%	371.1	-17.7%
Upgrade 3 - Arterial	1,752.1	-8.7%	345.2	-23.4%
Upgrade 3 - Freeway	1,763.4	-8.1%	353.1	-21.7%

Mass transit, TDM, and TSM could provide improvements to the congested roadway network in the PM peak. However, these improvements would be very minor when compared to the roadway construction alternatives.

The PM peak congested roadway lane mileage reductions had less variation than the daily totals. The Build, Hybrid 1, and Hybrid 3 alternatives had the greatest impact region-wide. The same general pattern is experienced within the traffic study area.

6.0 TRAVEL TIME ANALYSIS

Travel time between representative origins and destinations is a useful MOE for evaluating how alternative concepts meet the project purpose of improving mobility in the region and in the traffic study area. The TRM was used to calculate 2035 travel times for the AM and PM peak periods between the origins and destinations listed below. These origins and destinations include employment centers and the more densely populated residential land uses within the traffic study area and as such were selected because they have the highest number of trip attractors. The following origins and destinations were studied and are shown in **Figure 2**:

- Holly Springs (Main Street & Holly Springs Road)
- Fuquay-Varina (US 401 & Ennis Street)
- Garner (Garner Road & Vandora Springs Road)
- Clayton (US 70 Business & NC 42)
- Knightdale (US 64 Business & Smithfield Road)
- Eastern Wake County (Smithfield Road & Grasshopper Road)
- Northwestern Johnston County (NC 50 & NC 42)

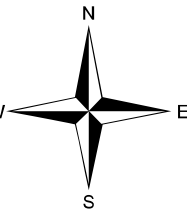
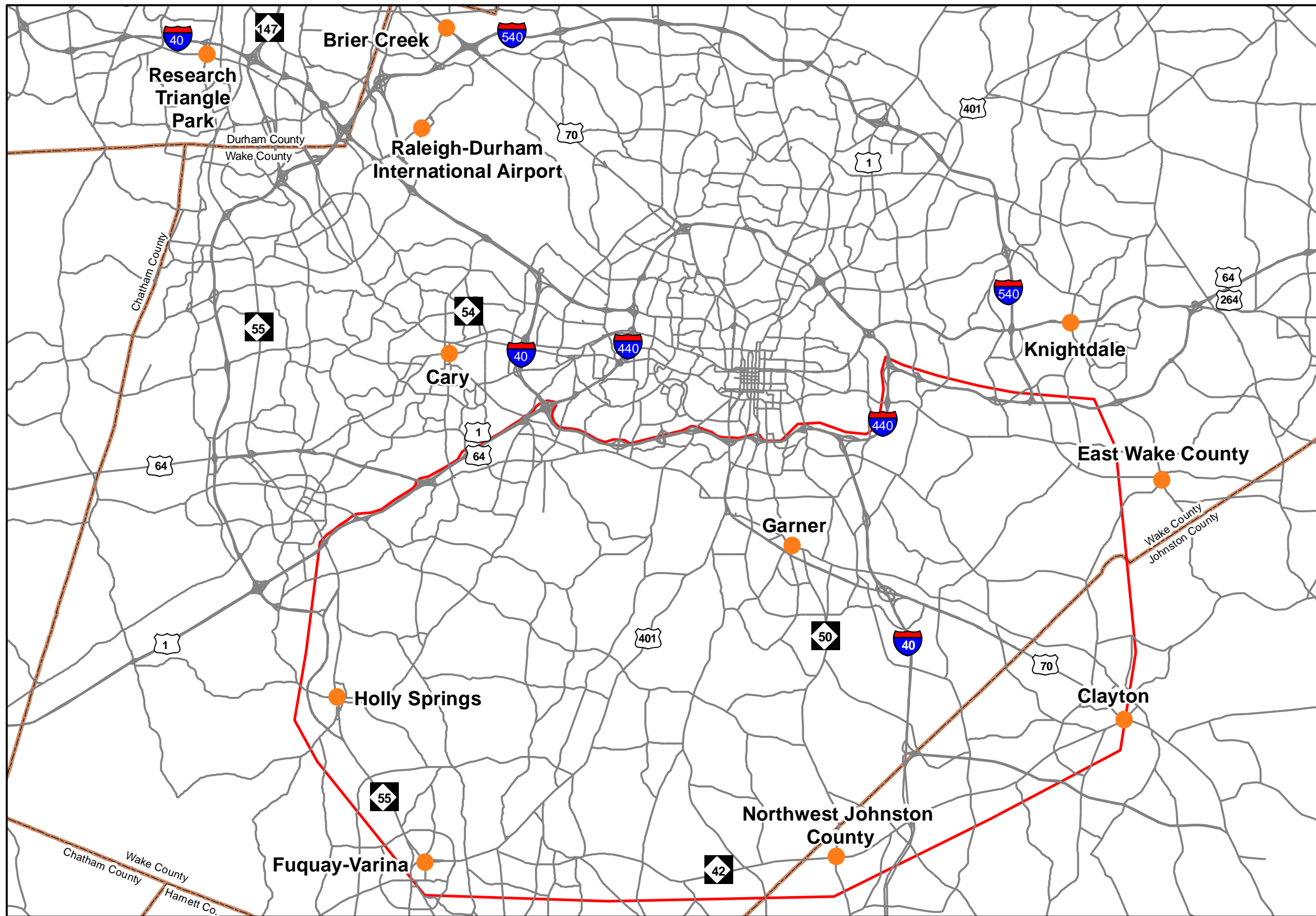
Southeast Extension

Figure 2





Travel Time Origins & Destinations

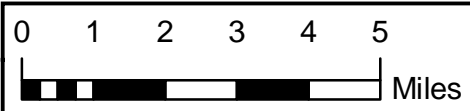
HNTB Project # 46816

Date: May 2011



Legend

-  SE Extension O-D Locations
-  2035 Highway Network
-  Traffic Study Area
-  Counties



HNTB, North Carolina, PC
343 East Six Forks Road, Suite 200
Raleigh, NC 27609

- Research Triangle Park (NC 55 & NC 54)
- RDU Airport (Airport Boulevard & International Drive)
- Brier Creek (US 70 & Brier Creek Parkway)
- Durham (Chapel Hill Street & Mangum Street)
- Cary (Academy Street & Chatham Street)

The complete results of the travel time calculations can be found in **Appendix A**. The alternative concepts each had some degree of positive impact on the travel times when compared to those of the No-Build alternative. Long-distance trips that traverse the traffic study area experienced the greatest reductions. For instance, the PM peak travel time from Research Triangle Park (RTP) to Clayton is reduced by over 17 minutes in the Build alternative compared to the No-Build. Another example is that the PM peak travel time from RDU Airport to northwestern Johnston County drops by over 21 minutes with the Build alternative in place. However, some travel times experienced little change, particularly a trip with both an origin and a destination in the western part of the traffic study area.

7.0 CONCLUSION

The various MOE described in **Section 3.0** through **6.0** demonstrate that all alternative concepts, with the exception of mass transit, TDM, and TSM, provide some benefit to the region and traffic study area in improving mobility and reducing congestion, the two purposes of the Triangle Expressway Southeast Extension, when compared to the No-Build alternative. Mass transit, TDM, and TSM, if analyzed as “stand alone” alternatives are needed at an unreasonable scale to provide the same benefits to the region as the Build alternative concept. All three of these alternatives will be needed in some complementary fashion to further enhance the amount of congestion reduction expected by the Build alternatives. Nearly all MOE results indicate that the Build, Hybrid 1, and Hybrid 3 alternatives are the most effective in improving mobility and reducing congestion in the regional and traffic study area highway network.

APPENDIX A

Travel Time Calculations

2035 Alternatives Analysis AM Travel Times

Origin: Fuquay-Varina (US 401 & Ennis St.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	11	11	11	9	11	11	9	10	11	11
Garner	21	21	21	20	21	22	20	21	21	21
Clayton	32	26	27	23	27	32	23	28	28	29
Knightdale	36	33	36	29	33	36	35	36	36	36
E Wake County	37	31	36	28	32	37	33	37	37	37
NW John. Co.	19	18	18	15	18	19	15	18	18	19
RTP	31	30	30	28	30	31	28	30	30	30
RDU	34	33	33	31	33	34	31	33	33	33
Brier Creek	35	34	34	31	34	35	31	33	34	34
Durham	40	39	38	37	39	40	36	38	39	39
Cary	29	29	28	27	29	28	27	28	28	28

2035 Alternatives Analysis PM Travel Times

Origin: Fuquay-Varina (US 401 & Ennis St.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	10	9	10	9	10	10	9	9	10	10
Garner	26	22	23	22	22	24	22	23	22	23
Clayton	46	35	37	31	36	45	31	36	38	41
Knightdale	59	39	52	34	40	52	49	53	53	54
E Wake County	57	38	50	33	39	52	46	52	51	52
NW John. Co.	29	22	22	19	23	27	19	20	23	25
RTP	28	28	28	25	28	28	25	27	28	28
RDU	31	31	31	29	31	31	29	30	31	31
Brier Creek	33	32	32	30	32	33	30	32	32	32
Durham	36	36	35	34	36	36	34	35	36	36
Cary	26	26	26	24	26	26	24	25	26	26

2035 Alternatives Analysis AM Travel Times

Origin: Garner (Garner Rd. & Vandora Springs Rd.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	25	21	21	24	20	25	24	25	20	22
Fuquay-Varina	20	20	20	19	20	20	19	20	20	20
Clayton	15	15	15	15	15	15	15	15	13	15
Knightdale	20	19	20	19	19	20	20	20	20	20
E Wake County	18	17	18	17	17	18	18	18	18	18
NW John. Co.	13	13	13	13	13	13	13	13	13	13
RTP	32	30	30	31	30	30	31	31	30	31
RDU	31	30	30	30	30	29	30	31	30	30
Brier Creek	34	32	32	33	32	32	33	33	32	33
Durham	40	39	39	40	39	38	39	40	39	39
Cary	23	21	22	22	21	21	22	23	21	22

2035 Alternatives Analysis PM Travel Times

Origin: Garner (Garner Rd. & Vandora Springs Rd.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	30	24	24	28	23	30	28	29	28	25
Fuquay-Varina	27	25	25	24	25	27	24	25	26	26
Clayton	26	25	26	27	25	25	26	25	25	26
Knightdale	37	28	33	30	29	33	34	33	33	34
E Wake County	34	27	31	29	28	31	31	31	31	31
NW John. Co.	25	21	22	23	25	25	23	22	25	23
RTP	26	25	25	26	25	25	26	26	25	26
RDU	25	25	25	25	25	29	25	25	25	25
Brier Creek	29	28	29	29	29	28	29	29	29	29
Durham	34	34	34	34	34	34	34	34	34	34
Cary	20	19	19	19	19	19	20	20	19	19

2035 Alternatives Analysis AM Travel Times

Origin: Clayton (US 70 Business & NC 42)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	43	30	30	31	30	42	32	39	30	34
Fuquay-Varina	34	28	28	29	29	33	25	30	30	31
Garner	19	18	19	19	18	19	19	19	18	18
Knightdale	23	21	22	21	21	23	23	23	23	23
E Wake County	15	15	15	15	15	15	15	15	15	15
NW John. Co.	16	14	15	14	14	16	14	15	15	15
RTP	47	43	43	47	44	45	48	48	45	46
RDU	47	45	45	47	46	45	47	47	45	45
Brier Creek	49	45	47	46	45	47	49	49	48	48
Durham	56	53	52	56	52	54	56	56	53	54
Cary	39	37	37	39	38	36	39	39	37	37

2035 Alternatives Analysis PM Travel Times

Origin: Clayton (US 70 Business & NC 42)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	43	29	29	31	29	43	31	41	29	33
Fuquay-Varina	39	30	30	25	32	39	25	33	32	33
Garner	16	16	16	16	16	16	16	16	16	16
Knightdale	27	24	26	24	24	26	26	26	26	26
E Wake County	20	17	19	17	17	19	18	18	18	19
NW John. Co.	21	18	19	17	19	22	18	18	20	19
RTP	37	36	37	37	36	36	37	37	36	36
RDU	36	36	36	37	36	35	37	36	36	36
Brier Creek	40	37	40	37	37	39	40	40	40	40
Durham	45	45	45	46	45	44	46	45	45	45
Cary	31	30	31	31	30	30	31	31	30	30

2035 Alternatives Analysis AM Travel Times

Origin: Knightdale (US 64 Business & Smithfield Rd.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	44	35	41	38	35	40	42	42	40	41
Fuquay-Varina	41	34	39	31	35	39	38	40	40	40
Garner	25	22	24	22	22	24	24	24	24	24
Clayton	21	21	21	21	21	21	21	21	21	21
E Wake County	9	9	9	9	9	10	9	9	9	9
NW John. Co.	30	22	29	22	22	29	29	29	29	29
RTP	40	39	40	40	39	38	39	39	38	39
RDU	39	38	39	39	38	38	38	38	38	38
Brier Creek	34	33	34	35	34	33	33	33	33	33
Durham	45	45	45	46	44	44	45	44	44	44
Cary	37	35	35	35	34	33	35	36	35	35

2035 Alternatives Analysis PM Travel Times

Origin: Knightdale (US 64 Business & Smithfield Rd.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	44	35	44	37	35	43	44	44	43	44
Fuquay-Varina	48	36	45	31	38	47	43	46	46	45
Garner	25	21	24	21	21	24	24	25	24	24
Clayton	26	25	26	25	25	27	27	27	26	27
E Wake County	11	10	11	11	10	11	11	11	11	11
NW John. Co.	42	28	38	29	31	41	39	38	38	39
RTP	29	29	29	29	29	29	29	29	29	29
RDU	29	30	30	30	30	30	30	30	30	30
Brier Creek	25	25	25	25	25	25	25	25	25	25
Durham	35	35	35	35	35	35	35	35	35	35
Cary	29	28	28	28	28	28	29	28	28	28

2035 Alternatives Analysis AM Travel Times

Origin: Eastern Wake County (Smithfield Rd. & Grasshopper Rd.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	45	34	41	36	34	42	43	43	40	42
Fuquay-Varina	41	32	40	29	33	40	37	40	40	40
Garner	23	20	22	21	20	22	22	22	22	22
Clayton	15	14	15	14	14	14	14	14	15	15
Knightdale	10	10	10	10	10	10	10	10	10	10
NW John. Co.	28	21	27	21	21	28	26	27	27	27
RTP	45	44	45	45	44	44	45	45	45	45
RDU	44	43	44	44	43	43	44	44	44	44
Brier Creek	39	38	40	39	38	39	40	39	39	39
Durham	51	49	51	50	49	50	51	51	50	50
Cary	38	36	36	37	36	35	37	37	36	36

2035 Alternatives Analysis PM Travel Times

Origin: Eastern Wake County (Smithfield Rd. & Grasshopper Rd.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	45	33	43	35	33	43	44	44	43	44
Fuquay-Varina	47	34	45	29	36	47	40	45	45	45
Garner	22	19	21	19	19	21	22	22	21	21
Clayton	17	17	17	17	17	18	17	18	17	17
Knightdale	10	10	10	10	10	10	10	10	10	10
NW John. Co.	37	26	34	27	29	37	34	34	36	35
RTP	34	33	34	33	33	34	34	34	34	34
RDU	34	33	34	34	34	34	34	34	34	34
Brier Creek	29	29	30	29	29	30	30	30	30	30
Durham	40	39	40	39	39	40	40	40	40	40
Cary	29	28	29	29	28	28	29	29	29	29

2035 Alternatives Analysis AM Travel Times
Origin: Northwestern Johnston County (NC 50 & NC 42)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	32	19	24	23	26	31	23	28	26	28
Fuquay-Varina	22	19	19	16	20	22	16	19	20	20
Garner	19	17	18	18	19	19	18	17	19	18
Clayton	17	15	15	15	16	17	15	14	16	16
Knightdale	31	24	29	25	27	31	29	28	30	29
E Wake Co.	29	23	27	24	25	29	27	26	28	27
RTP	48	38	38	41	40	45	41	45	40	43
RDU	47	41	41	44	43	44	44	44	43	44
Brier Creek	49	41	41	45	44	47	44	46	43	46
Durham	56	46	46	50	48	53	49	53	48	51
Cary	39	35	35	38	37	36	37	36	36	36

2035 Alternatives Analysis PM Travel Times
Origin: Northwestern Johnston County (NC 50 & NC 42)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	29	22	22	21	23	29	21	27	23	26
Fuquay-Varina	22	20	20	15	20	22	15	19	20	20
Garner	16	15	16	16	16	16	16	15	17	15
Clayton	21	19	21	19	20	21	19	19	20	20
Knightdale	43	27	40	28	29	41	40	39	40	40
E Wake Co.	38	26	37	27	28	37	35	35	37	36
RTP	38	35	35	37	35	37	37	36	36	37
RDU	38	35	36	36	35	37	36	36	36	36
Brier Creek	42	39	40	40	39	40	40	40	40	40
Durham	47	43	43	45	44	46	45	45	44	45
Cary	32	30	30	31	29	31	31	30	30	30

2035 Alternatives Analysis AM Travel Times

Origin: Research Triangle Park (NC 55 & NC 54)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	21	21	21	21	21	21	21	21	21	21
Fuquay-Varina	25	25	25	24	25	25	24	25	25	25
Garner	22	22	22	22	22	22	22	22	22	22
Clayton	33	33	33	33	33	33	33	33	33	33
Knightdale	27	27	27	27	27	27	27	27	27	27
E Wake Co.	31	31	31	31	31	31	31	31	31	31
NW John. Co.	32	32	32	32	32	34	32	31	32	32
RDU	8	8	8	8	8	8	8	8	8	8
Brier Creek	9	9	9	9	9	9	9	9	9	9
Durham	12	12	12	12	12	12	12	12	12	12
Cary	11	11	11	11	11	11	11	11	11	11

2035 Alternatives Analysis PM Travel Times

Origin: Research Triangle Park (NC 55 & NC 54)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	29	28	28	31	28	29	31	29	28	28
Fuquay-Varina	42	37	37	37	38	41	37	40	38	38
Garner	47	41	41	44	40	42	44	45	40	43
Clayton	70	53	55	65	54	62	65	68	56	62
Knightdale	61	56	56	60	58	56	60	58	58	58
E Wake Co.	68	55	64	66	57	63	66	66	64	65
NW John. Co.	69	44	44	53	48	62	53	60	49	52
RDU	9	9	9	9	9	9	10	9	9	10
Brier Creek	11	11	11	11	11	11	12	11	11	11
Durham	12	12	12	12	12	12	12	12	12	12
Cary	17	17	17	17	17	18	17	17	17	17

2035 Alternatives Analysis AM Travel Times

Origin: Raleigh-Durham Airport (Airport Blvd. & International Dr.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	25	25	25	25	25	25	25	25	25	25
Fuquay-Varina	29	29	29	27	29	29	27	29	29	29
Garner	23	23	23	23	23	23	23	23	23	23
Clayton	34	34	34	34	34	33	34	34	34	34
Knightdale	28	28	28	28	28	28	28	28	28	28
E Wake Co.	31	31	31	31	31	31	31	31	31	31
NW John. Co.	32	32	32	32	32	32	32	32	32	32
RTP	9	9	9	9	9	9	9	9	9	9
Brier Creek	9	9	9	9	9	9	9	9	9	9
Durham	18	18	18	18	18	18	18	18	18	18
Cary	12	12	12	12	12	12	12	12	12	12

2035 Alternatives Analysis PM Travel Times

Origin: Raleigh-Durham Airport (Airport Blvd. & International Dr.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	33	32	32	35	32	33	35	33	32	32
Fuquay-Varina	45	41	41	41	41	45	41	44	42	42
Garner	47	41	41	44	41	42	44	45	41	42
Clayton	70	57	59	67	58	62	67	68	60	65
Knightdale	59	57	54	57	55	54	57	56	56	56
E Wake Co.	66	59	61	63	60	62	65	64	62	63
NW John. Co.	69	48	48	57	52	62	56	64	52	56
RTP	10	9	9	10	9	10	10	9	10	10
Brier Creek	10	10	10	10	10	10	10	10	10	10
Durham	18	18	18	18	18	18	18	18	18	18
Cary	18	18	18	18	18	19	18	18	18	18

2035 Alternatives Analysis AM Travel Times

Origin: Brier Creek (US 70 & Brier Creek Pkwy.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	25	25	25	24	25	25	24	25	25	25
Fuquay-Varina	28	28	28	27	28	28	27	28	28	28
Garner	25	25	25	25	25	25	25	25	25	25
Clayton	35	35	35	34	35	35	35	35	35	35
Knightdale	23	24	24	24	24	24	24	24	24	24
E Wake Co.	28	28	28	28	28	28	28	28	28	28
NW John. Co.	34	34	34	34	34	34	34	34	34	34
RTP	9	10	10	10	10	10	10	10	10	10
RDU	9	9	9	9	9	9	9	9	9	9
Durham	15	15	15	15	15	15	15	15	15	15
Cary	15	15	15	15	15	15	15	15	15	15

2035 Alternatives Analysis PM Travel Times

Origin: Brier Creek (US 70 & Brier Creek Pkwy.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	32	31	31	34	31	32	34	32	32	31
Fuquay-Varina	45	40	40	40	41	44	40	43	41	41
Garner	49	43	43	46	43	44	47	48	43	45
Clayton	73	56	58	66	57	64	68	70	59	65
Knightdale	54	53	50	53	51	49	53	52	51	51
E Wake Co.	61	58	57	59	56	57	61	59	58	59
NW John. Co.	71	47	47	56	51	64	56	63	52	55
RTP	9	9	9	9	9	9	9	9	9	9
RDU	9	9	9	9	9	9	9	9	9	9
Durham	14	14	14	14	14	14	14	14	14	14
Cary	20	20	20	20	20	21	20	20	20	20

2035 Alternatives Analysis AM Travel Times

Origin: Durham (Chapel Hill St. & Mangum St.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	29	29	29	29	29	29	29	29	29	29
Fuquay-Varina	33	33	33	31	33	33	31	33	33	33
Garner	31	31	31	31	31	31	31	31	31	31
Clayton	41	41	41	42	42	41	41	41	41	41
Knightdale	33	33	33	33	33	33	33	33	33	33
E Wake Co.	37	37	37	37	37	37	37	37	37	37
NW John. Co.	40	40	40	40	40	40	40	40	40	40
RTP	11	11	11	11	11	11	11	11	11	11
RDU	17	17	17	17	17	17	17	17	17	17
Brier Creek	13	13	13	13	13	13	13	13	13	13
Cary	20	20	20	20	20	20	20	20	20	20

2035 Alternatives Analysis PM Travel Times

Origin: Durham (Chapel Hill St. & Mangum St.)

Alternatives

Destination	No-Build	Build	Hybrid 1	Hybrid 2	Hybrid 3	Improve Existing 1	Improve Existing 2A	Improve Existing 2B	Improve Existing 3A	Improve Existing 3B
Holly Springs	39	38	38	41	38	39	41	39	38	38
Fuquay-Varina	51	47	47	47	48	51	47	50	48	48
Garner	58	51	51	55	50	53	55	56	50	53
Clayton	81	63	65	76	64	73	75	79	66	72
Knightdale	68	66	64	68	65	63	67	66	66	65
E Wake Co.	75	65	71	73	67	71	75	74	72	72
NW John. Co.	80	54	54	63	58	73	62	70	59	62
RTP	14	14	13	14	14	14	13	14	13	14
RDU	20	20	20	20	20	20	20	20	20	20
Brier Creek	18	18	18	18	18	18	18	18	18	18
Cary	27	27	27	27	27	28	27	27	27	27

APPENDIX B
Local Resolutions and State Legislation

RESOLUTION TO SUPPORT A STUDY OF TOLL FUNDING TO ACCELERATE THE CONSTRUCTION OF I-540 IN SOUTHWESTERN WAKE COUNTY

WHEREAS the growth in western and southern Wake County and surrounding areas has already overwhelmed the existing highway system in the southern Triangle; and

WHEREAS the proposed western and southern sections of the I-540 Wake freeway loop will provide a high speed, signal-free travel option that will save time, money, and lives throughout the region and preserve economic competitiveness in western and southern Wake County; and

WHEREAS increasing demands on scarce transportation funds is an unfortunate reality that has delayed the western section of I-540 by years and the southern section of I-540 indefinitely; and

WHEREAS the North Carolina General Assembly created the NC Turnpike Authority in October 2002 in order to speed the implementation of needed transportation improvements and to help meet more transportation needs than NCDOT could otherwise afford; and

WHEREAS the potential may exist to accelerate the opening of the entire western Wake freeway – to the US 1 freeway and the Holly Springs bypass – by several years, even with the additional \$8 million devoted to the project in the recent federal highway legislation; and

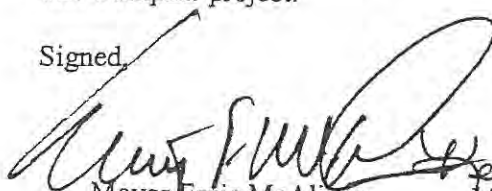
WHEREAS the potential may also exist to accelerate the opening of the southern Wake freeway – to I-40 and the Clayton freeway bypass – by 15 or more years, perhaps a generation faster; and


WHEREAS there needs to be consideration and study of the potential for toll user fees to leverage our existing Highway Trust Fund loop funding authorizations to gain more control over our mobility future by reducing uncertainties in funding timetables for I-540;


BE IT THEREFORE RESOLVED that the undersigned members of the elected and business community request that the NC Turnpike Authority conduct a detailed feasibility study to determine the true viability of, and expected timesavings associated with, accelerating the construction of both the western and southern portions of the I-540 Wake freeway loop as two phases of a single potential Turnpike project in southwestern Wake County.

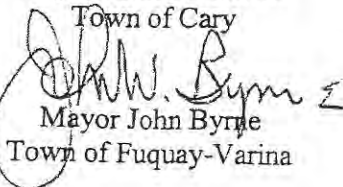
BE IT FURTHER RESOLVED that the undersigned members of the elected and business community will require assurances that this feasibility study include the following considerations: that the provisions of General Statute § 136-89.196 – which require the removal of tolls upon fulfillment of the Turnpike's revenue bonds – are adhered to, and that toll revenue generated by this toll road be used exclusively for pay down of the Turnpike's revenue bonds associated with this Turnpike project.

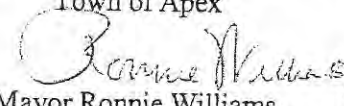
Signed,

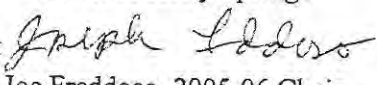

Mayor Ernie McAlister
Town of Cary


Mayor Keith Weatherly
Town of Apex


Mayor Dick Sears
Town of Holly Springs


Mayor John Byrne
Town of Fuquay-Varina


Mayor Ronnie Williams
Town of Garner


Joe Freddoso, 2005-06 Chair
Regional Transportation Alliance



TOWN OF

Holly Springs

Resolution No.: 10-27

Date Adopted: Sept. 21, 2010

RESOLUTION STATING THE TOWN OF HOLLY SPRINGS TOWN COUNCIL'S POSITION REGARDING THE ALIGNMENT OF THE SOUTHERN PHASE OF I-540

WHEREAS, on May 6, 2008, the Holly Springs Town Council adopted Resolution 08-26 expressing its fervent support for the construction of the I-540 Western Wake Expressway; and

WHEREAS, the proposed I-540 Western Wake Expressway has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions of the Town of Holly Springs and other local governments of southwestern Wake County; and

WHEREAS, the Town of Holly Springs historically has utilized the protected I-540 corridor proposed in earlier designs to plan for both existing and future development in Town; and

WHEREAS, the change to relocate the corridor south to connect to Bass Lake Road would have an adverse impact on our community, due to access issues and the cost of relocating both residential and commercial properties from said corridor; and

WHEREAS, additional traffic generated on Holly Springs Road would negatively impact the area around a proposed interchange and Holly Springs Road would not be adequate to handle the increased traffic volume; and

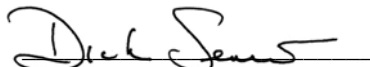
WHEREAS, the delay of the construction of the I-540 Western Wake Expressway is particularly injurious to the Town of Holly Springs when weighed against the much-needed NC 55 improvements that have not been constructed in anticipation of a 2008 start of I-540 Western Wake Expressway construction;

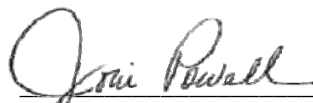
NOW THEREFORE BE IT RESOLVED that the Town Council of the Town of Holly Springs hereby expresses its adamant opposition to any option for the construction of the I-540 Southern Wake Expressway that utilizes Bass Lake Road as a potential alternative for the southern phase of I-540; and

BE IT FURTHER RESOLVED that the Town Council supports use of the original protected corridor design as illustrated in orange on N.C. Transit Authority maps as the preferred choice for the development and construction of the I-540 Southern Wake Expressway.

Adopted this, the 21st day of September, 2010.

ATTEST:


Dick Sears, Mayor


[X] Joni Powell, CMC, Town Clerk
[] Linda R. Harper, CMC Deputy Town Clerk

Office of the Mayor

RESOLUTION NO. (2010) 2072

**A RESOLUTION STATING THE TOWN OF GARNER TOWN COUNCIL'S POSITION
REGARDING THE ALIGNMENT OF THE SOUTHERN PHASE OF I-540**

WHEREAS, the proposed I-540 Expressway has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions of the Town of Garner and other local governments of Wake County;

WHEREAS, the Town of Garner historically has utilized the protected I-540 corridor proposed in earlier designs to make key planning decisions for both existing and future development in Garner; and

WHEREAS, the proposed change in plans to relocate the corridor away from its previously designated route will have an adverse impact on the Garner communities; and

WHEREAS, the "red" route shown on Turnpike Authority maps with a course north of Lake Benson is a very poor land use decision that will cause tremendous disruption to existing homes and businesses; and

WHEREAS, numerous Garner homeowners and landowners have relied upon the protected corridor route (orange) for many years as they have made investment decisions. A change to the planned route will be burdensome, chaotic, and unfair; and


NOW THEREFORE, BE IT RESOLVED, the Town of Garner would like to see the Southeast Extension of Triangle Expressway constructed, however, the Town cannot support a route north of Lake Benson; and

BE IT FURTHER RESOLVED that the Town Council supports use of the original protected corridor design as illustrated in orange on the N.C. Transit Authority maps as the preferred choice for the development and construction of the I-540 Triangle Expressway Southeast Extension.

Adopted this 4th day of October 2010.



Mayor

ATTEST: 
Town Clerk

**A RESOLUTION BY THE COUNTY OF WAKE REGARDING THE TRIANGLE
EXPRESSWAY SOUTHEAST EXTENSION**

WHEREAS, the proposed Triangle Expressway Southeast Extension has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions for Wake County and other local governments of Wake County;

WHEREAS, Wake County historically has utilized the protected corridor proposed in earlier designs to make key planning decisions for both existing and future development in Wake County; and

WHEREAS, the proposed alternative alignments to relocate the corridor away from its previously designated and protected route will have an adverse impact on communities in Wake County; and

WHEREAS, the proposed alternative alignments illustrated as "blue", "purple", and "red" on N.C. Turnpike Authority maps will have a greater impact on Wake County's designated priority stream corridors and proposed Southeast Wake County Park than the previously designated and protected route; and

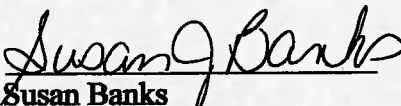
WHEREAS, numerous Wake County homeowners and landowners have relied upon the protected corridor route (orange) for many years as they have made investment decisions.

NOW THEREFORE, BE IT RESOLVED that Wake County supports use of the original protected corridor design as illustrated in "orange" on the N.C. Turnpike Authority maps as the preferred choice for the development and construction of the Triangle Expressway Southeast Extension.

Adopted this 18th day of October 2010.



Tony Gurley, Chairman
Wake County Board of Commissioners

ATTEST: 
Susan Banks
Clerk to the Board





TOWN OF FUQUAY-VARINA
401 Old Honeycutt Road
Fuquay-Varina, North Carolina 27526

**A RESOLUTION BY THE TOWN OF FUQUAY-VARINA REGARDING
THE TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION (I-540)**

WHEREAS, the proposed Triangle Expressway Southeast Extension has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions for Town of Fuquay-Varina, Wake County and other local governments of Wake County; and,

WHEREAS, the alternates routes have been only recently proposed and would have a much more significant negative impact on residents of Fuquay-Varina who purchased homes and businesses based on the original proposed route; and,

WHEREAS, the Town of Fuquay-Varina historically has utilized the protected corridor proposed in earlier designs to make key planning decisions for both existing and future development in the Town of Fuquay-Varina; and,

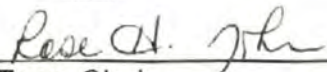
WHEREAS, the proposed alternative alignments to relocate the corridor away from its previously designated and protected route will have an adverse impact on the Town of Fuquay-Varina; and

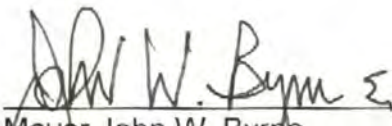
NOW THEREFORE, BE IT RESOLVED that the Town of Fuquay-Varina supports use of the original protected corridor design as illustrated in "orange" on the North Carolina Turnpike Authority maps as the preferred choice for the development and construction of the Triangle Expressway Southeast Extension (I-540).

Adopted this 19th day of October 2010.



ATTEST:


Town Clerk


Mayor John W. Byrre
Town of Fuquay-Varina

STAFF REPORT
Town of Knightdale

To: Mayor and Town Council	Budget Amendment - #BA
From: Chris Hills, Planning Director	Planning Director Signature - SL
Subject: NC Turnpike Authority Resolution of Support for Preferred I-540 Alignment RES# 10-10-20-001	Town Manager Signature -
Date: October 20, 2010	

REPORT

The North Carolina Turnpike Authority is currently proceeding through its Environmental Impact Statement (EIS) process which includes an Alternatives Analysis to determine the best possible route for the I-540/Triangle Expressway Southeast Extension. Part of this process is to solicit input from citizens and public officials on the preferred route. The project is envisioned in two phases, with phase I being between Apex and I-40 in Clayton and phase II being between I-40 in Clayton and US 64/264 Bypass in Knightdale.

The three potential options under consideration are briefly described below:

1. Build a new roadway between NC 55 near Apex and the US 64/264 Bypass in Knightdale.
2. Improve existing roadways by widening I-40 from west of Raleigh to the Clayton area, I-440 from I-40 to the US 64/264 Bypass, and US 64/264 Bypass from I-440 to the eastern study area boundary.
3. Hybrid new roadway construction/improve existing roadway option. This option consists of a new roadway option for Phase I and improving I-40, I-440 and US 64/264 in the Phase II area.

The Planning and Engineering Committee discussed this item at its October 11 meeting. At that meeting, the Committee unanimously recommended that the Town Council support Option 1 above for a new build roadway for both phases of the Southeast Extension project.

Attached to this staff report and proposed resolution is the most recent newsletter from the Turnpike Authority detailing the EIS process, the study area, and potential routes under consideration. A brief video will be shown at the Council meeting to elaborate on the proposed alternatives, after which the Council will be asked to pass a Resolution of Support for its preferred option.

REPORT RECOMMENDED ACTION

Motion to adopt RES # 10-10-20-001



TOWN OF KNIGHTDALE
PLANNING DEPARTMENT

www.ci.knightdale.nc.us

950 Steeple Square Court
Knightdale, NC 27545
(v) 919.217.2245
(f) 919.217.2249

RESOLUTION # 10-10-20-001

**RESOLUTION OF THE KNIGHTDALE TOWN COUNCIL SUPPORTING THE NEW
ROADWAY OPTION FOR BOTH PHASES OF THE TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION**

WHEREAS, the study area defined by the Environmental Impact Statement (EIS) study includes parcels within the Knightdale City Limits and ETJ boundaries; and

WHEREAS, the Town of Knightdale has demonstrated a commitment to comprehensive planning through its participation in with the Capital Area Metropolitan Planning Organization (CAMPO); and

WHEREAS, current and future development within this area will be at urban and suburban densities and is anticipated to generate significant transportation impacts that will require the completion of the outer loop referred to as the Triangle Expressway Southeast Extension; and

WHEREAS, the Town of Knightdale staff and Town Council has studied the proposed options presented by the North Carolina Turnpike Authority and determined that a new build roadway will be critical in mitigating the impacts of the future growth of eastern and southern Wake County and western Johnston County;

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Knightdale, North Carolina:

Section 1. That the Knightdale Town Council hereby requests that the North Carolina Turnpike Authority choose Option 1, being a new-build roadway for both phases, as the preferred alternative for the construction of the Triangle Expressway Southeast Extension.

Adopted this, the 20th day of October, 2010.

James M. Chalk, Mayor Pro-Tem

ATTEST & SEAL:

Suzanne M. Yeatts, Town Clerk



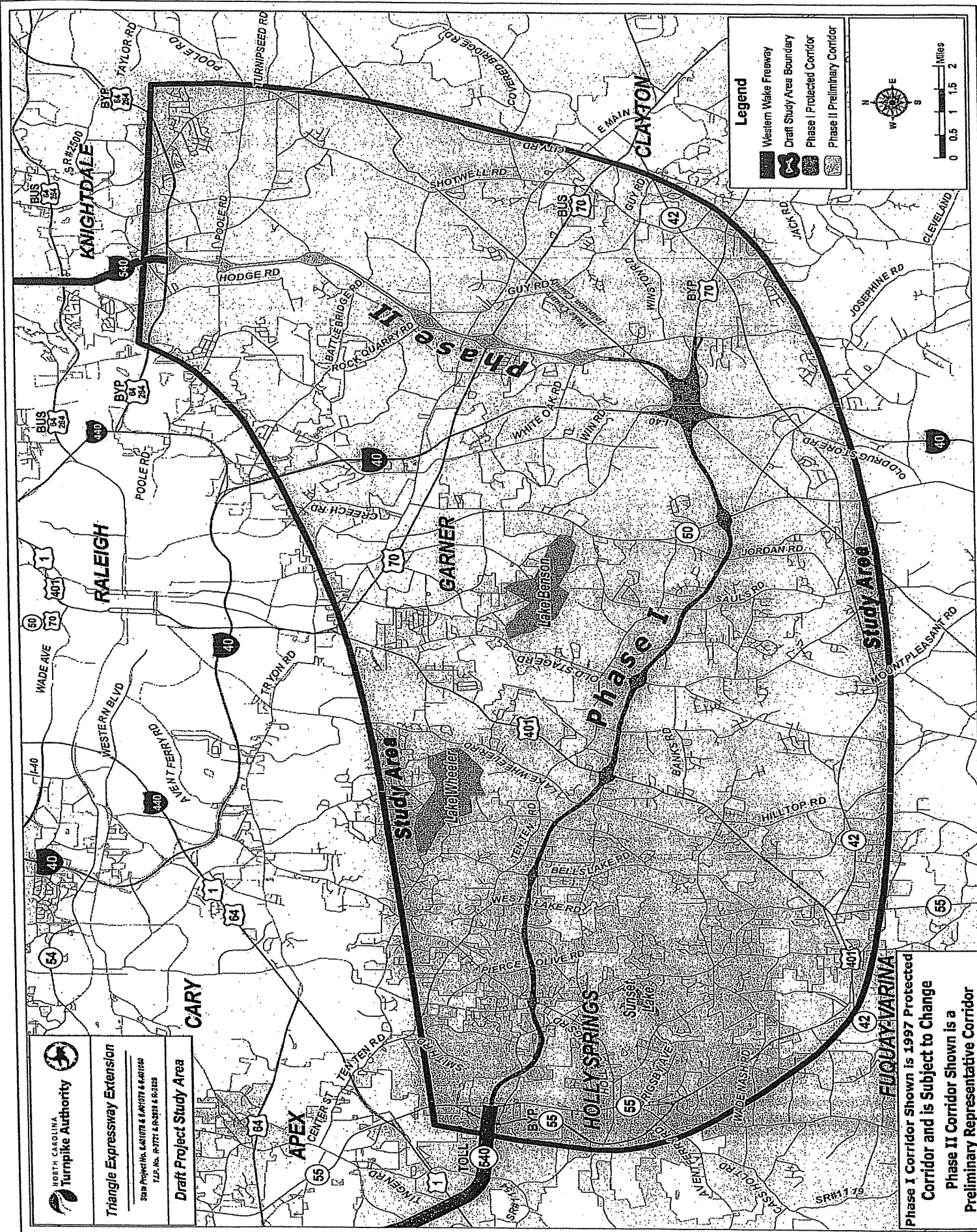
Triangle Expressway Extension

State Project No. 441076 & 441078 & 441080
TID No. R-771 & R-811 & R-823

Draft Project Study Area

Legend

- Western Wake Freeway
- Draft Study Area Boundary
- Phase I Protected Corridor
- Phase II Preliminary Corridor



Phase I Corridor Shown is 1997 Protected Corridor and is Subject to Change
Phase II Corridor Shown is a Preliminary Representative Corridor

**RESOLUTION EXPRESSING THE NC CAPITAL AREA MPO'S POSITION REGARDING THE
ALIGNMENT OF THE FUTURE NC 540 TURNPIKE**

On motion made by Mayor Sears and seconded by Mayor Byrne , and having been put to a vote, was duly adopted, the following resolution;

WHEREAS, the proposed southern and southeastern segments of the NC 540 Turnpike are an adopted element of the Capital Area Metropolitan Planning Organization's (CAMPO) 2035 Long Range Transportation Plan; and

WHEREAS, official corridor maps show a specific alignment, adopted by the North Carolina Board of Transportation, to block new development in the preferred path of the southern segment from N.C. 55 in Holly Springs to US 401 south of Garner on August 2, 1996 and the southern segment from US 401 south of Garner to Interstate 40 south of Garner on March 7, 1997; and

WHEREAS, the proposed freeway alignment has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions for the towns of Fuquay-Varina, Garner, and Holly Springs; and

WHEREAS, Wake County is the first and only County in North Carolina to have its urban loop constructed as a toll road; and

WHEREAS, the southeastern segment is likely to be much more expensive on a per mile basis than the southern segment and as such will need the revenue coming from the southern segment to help pay for it; and

WHEREAS, the southeastern segment is the Capital Area MPO's urgently needed top regional priority and therefore should not be delayed until the northern segment of the loop is converted to a turnpike to help pay for it's construction

WHEREAS, the North Carolina Turnpike Authority is looking at new alternatives (defined as "red", "blue", and "purple")that would possibly have an adverse impact upon these towns, causing disruptions to existing homes and businesses; and

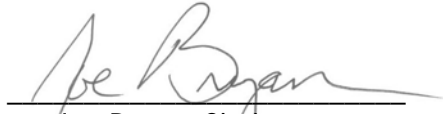
WHEREAS, the alternatives may be shorter and possibly cut construction cost; at the possible expense of environmentally sensitive areas as well as mar residential and commercial activities vital to the economic well being of the towns being impacted;

NOW, THEREFORE BE IT RESOLVED, the Capital Area MPO Transportation Advisory Committee supports the use of the original protected corridor alignment illustrated on North Carolina Turnpike Authority maps adopted in 1996 and 1997 as the preferred choice for the development and construction of the proposed NC 540 Turnpike in southern and southeastern Wake County; and

BE IT FURTHER RESOLVED, that the Capital Area MPO Transportation Advisory Committee requests that the North Carolina Turnpike Authority include the Capital Area MPO as an active stakeholder in the alternatives analysis process; and

BE IT FURTHER RESOLVED, that the Capital Area MPO Transportation Advisory Committee strongly urges the North Carolina Department of Transportation to construct the entire remaining portion of the outer loop as a turnpike in one phase rather than as two separate phases.

Adopted on this the 20th day of October, 2010



Joe Bryan, Chair
Director
Transportation Advisory Committee

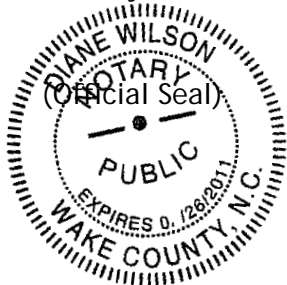


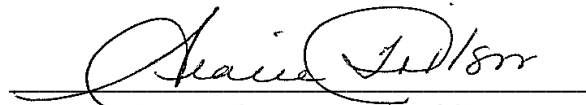
Ed Johnson, Capital Area MPO
Transportation Advisory Committee Clerk

County of Wake
State of North Carolina

I, Diane Wilson, a Notary Public for said County and State, do hereby certify that on this, the 20th day of October, 2010, personally appeared before me, Joe Bryan, known to me by his presence, and acknowledged the due execution of the foregoing RESOLUTION STATING THE CAPITAL AREA MPO'S POSITION REGARDING THE ALIGNMENT OF THE FUTURE NC 540 TURNPIKE.

Witness my hand and official seal, this the 20th day of October, 2010.





Diane Wilson, Notary Public

My commission expires January 26, 2011

**RESOLUTION
REGARDING THE TAN AND RED CORRIDORS AS
ALTERNATIVE ALIGNMENTS FOR
THE TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION**

On motion made by Commssioner Bryan and seconded by Mayor Sears and having being duly put to a vote of the N.C. Capital Area Metropolitan Planning Organization's Transportation Advisory Committee was adopted the following resolution;

WHEREAS, the proposed Southeast Extension of the Triangle Expressway will extend the eastern leg of the Triangle Expressway toll road from Interstate 40 near Garner north to the eastern tip of the 540 Outer Loop on U.S. 64 / 264 in Knightdale; and

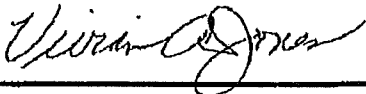
WHEREAS, the North Carolina Turnpike Authority has been examining various alternate routes for the Southeast Extension of the Triangle Expressway in accordance with federal highway and environmental laws and as of March 2010 announced the introduction of new alternate corridors (aka the Red and Tan Corridors) on the eastern side of the Triangle Expressway Southeast Extension as "equivalent" alternates to the 20 year old prospected "Green" and "Orange" corridors and,

WHEREAS, Wake County has indicated a lack of support for the recent addition of the "Tan" corridor and has requested that the North Carolina Turnpike Authority remove the corridor from consideration, as well as request that the selection of the final corridor be expedited as soon as possible; and,

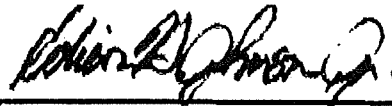
WHEREAS, while the Raleigh City Council voted unanimously to oppose the Tan Corridor as it is currently proposed, has requested that staff continue to work with the North Carolina Turnpike Authority project team to develop viable alternatives for consideration in the Environmental Impact Statement (EIS), and states that while the EIS process is technical in nature, the North Carolina Turnpike Authority is urged to continue to take the concerns of area residents into account as they proceed with the study.

NOW THEREFORE, be it resolved that the N.C. Capital Area Metropolitan Planning Organization opposes the Red and Tan Corridors in their currently proposed alignment and supports the original alignment shown on the adopted 2035 Long-Range Transportation Plan, and will continue to be receptive to new and better information regarding alternative alignments as they become available during the EIS process. The organization also encourages the North Carolina Turnpike Authority to work with local government staff from Garner, Raleigh, Johnston County, and Wake County on the technical data for the EIS process.

Adopted this the 16th day of March, 2011



Vivian Jones, Chair
Transportation Advisory Committee

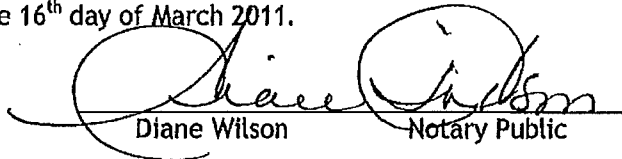
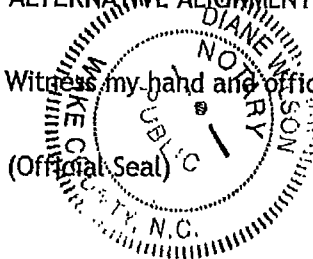


Ed Johnson, Capital Area MPO Director
Transportation Advisory Committee Clerk

County of Wake
State of North Carolina

I, Diane Wilson, a Notary Public for said County and State, do hereby certify that Vivian Jones personally known to me by her presence appeared before me this day and acknowledged the due execution of the foregoing RESOLUTION REGARDING THE TAN CORRIDOR AS AN ALTERNATIVE ALIGNMENT FOR THE TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION

Witness my hand and official seal, the 16th day of March 2011.



Diane Wilson
Notary Public

My commission expires January 26, 2016.

**GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011**

**SESSION LAW 2011-7
SENATE BILL 165**

AN ACT TO RESTRICT THE NORTH CAROLINA TURNPIKE AUTHORITY'S
SELECTION OF TRANSPORTATION CORRIDORS TO EXISTING PROTECTED
CORRIDORS OR CORRIDORS SOUTH OF AN EXISTING PROTECTED CORRIDOR
EXCEPT IN THE AREA OF INTERSTATE 40 EAST.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 136-89.183(a)(2) reads as rewritten:

"(2) To study, plan, develop, and undertake preliminary design work on up to nine Turnpike Projects. At the conclusion of these activities, the Turnpike Authority is authorized to design, establish, purchase, construct, operate, and maintain the following projects:

- a. Triangle Expressway, including segments also known as N.C. 540, Triangle Parkway, and Western Wake Freeway in Wake and Durham ~~Counties.~~ Counties, except that segment known as the Triangle Expressway Southeast Extension which shall not be located north of an existing protected corridor established by the Department of Transportation circa 1995, except in the area of Interstate 40 East.
- b. Gaston East-West Connector, also known as the Garden Parkway.
- c. Monroe Connector/Bypass.
- d. Cape Fear Skyway.
- e. A bridge of more than two miles in length going from the mainland to a peninsula bordering the State of Virginia, pursuant to G.S. 136-89.183A.
- f. Repealed by Session Laws 2008-225, s. 4, effective August 17, 2008. Any other project proposed by the Authority in addition to the projects listed in this subdivision must be approved by the General Assembly prior to construction.

A Turnpike Project selected for construction by the Turnpike Authority shall be included in any applicable locally adopted comprehensive transportation plans and shall be shown in the current State Transportation Improvement Plan prior to the letting of a contract for the Turnpike Project."



SECTION 2. This act is effective when it becomes law.

In the General Assembly read three times and ratified this the 17th day of March,
2011.

s/ Philip E. Berger
President Pro Tempore of the Senate

s/ Thom Tillis
Speaker of the House of Representatives

s/ Beverly E. Perdue
Governor

Approved 3:09 p.m. this 18th day of March, 2011

**RESOLUTION
EXPRESSING THE NC CAPITAL AREA MPO'S
UNWAVERING SUPPORT
FOR THE CONSTRUCTION OF THE WAKE OUTER LOOP**

On motion made by Mayor Sears and seconded by Mayor Williams, and having been put to a vote, was duly adopted, the following resolution;

WHEREAS, the Wake Outer Loop has been an adopted element of the Capital Area Metropolitan Planning Organization's (MPO) Comprehensive and Long Range Transportation Plans of 2025, 2030, and 2035; and

WHEREAS, the Wake Outer Loop will continue to be an essential highway corridor for the MPO's 2040 Long Range Transportation Plan; and

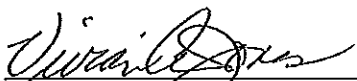
WHEREAS, the Wake Outer Loop has historically been one of the highest priority projects in both the MPO's Transportation Improvement Plan and the State Transportation Improvement Program, and has received numerous resolutions and letters of support over many years; and

WHEREAS, completion of the Wake Outer Loop is vital to continued high-quality mobility, and thus the economic health and well-being of the Triangle region and the state of North Carolina;

NOW THEREFORE BE IT RESOLVED, that the Capital Area MPO expresses its unwavering support for construction of the Wake Outer Loop, as quickly as possible, in a location that meets the needs of area citizens and requirements of federal law; and

BE IT FURTHER RESOLVED, that the Capital Area MPO requests that the North Carolina Turnpike Authority, in cooperation with state and federal agencies work to fulfill all essential requirements to satisfy legal review and obtain financial support for the Wake Outer Loop; and to ensure that the construction and completion of the Wake Outer Loop remain a high priority.

Adopted on this the 16th day of May, 2012



Vivian Jones, Chair
Transportation Advisory Committee

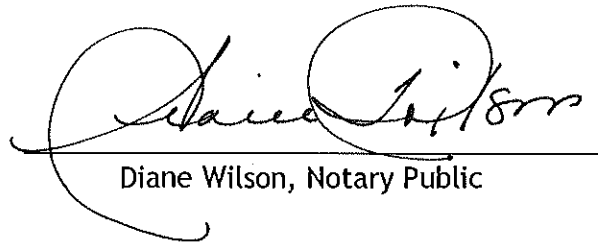
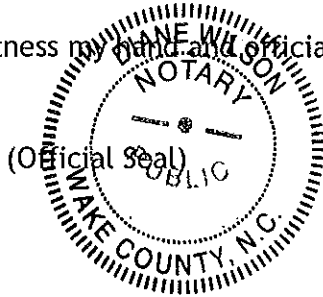


Edison H. Johnson, Jr.
Director, Capital Area MPO

County of Wake
State of North Carolina

I, Diane Wilson, a Notary Public for said County and State, do hereby certify that on this, the 16th day of May, 2012, personally appeared before me, Vivian Jones, known to me by her presence, and acknowledged the due execution of the foregoing RESOLUTION EXPRESSING THE NC CAPITAL AREA MPO'S UNWAVERING SUPPORT FOR THE CONSTRUCTION OF THE WAKE OUTER LOOP.

Witness my hand and official seal, this the 16th day of May, 2012.



Diane Wilson, Notary Public

My commission expires January 26, 2016

**NC CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION
REQUEST TO REPEAL NORTH CAROLINA SESSION LAW 2011-7**

On a motion made by Mayor Dick Sears and seconded by Mayor John Byrne, and having been put to a vote, was duly adopted, the following resolution;

WHEREAS, the Wake County Outer Loop (also known as the Triangle Expressway) has been an adopted element of the Capital Area Metropolitan Planning Organization's (MPO) Long Range Transportation Plans (LRTPs) adopted for 2025, 2030, and 2035; and

WHEREAS, the Wake Outer Loop will continue to be an essential highway corridor for the MPO's 2040 Comprehensive Metropolitan Transportation Plan (CMTP); and

WHEREAS, the Wake Outer Loop has historically been one of the highest priority projects in both the MPO's Transportation Improvement Plan and the State Transportation Improvement Program, and has received numerous resolutions and letters of support over many years; and

WHEREAS, completion of the Wake Outer Loop is vital to continued high-quality mobility, and thus the economic health and well-being of the Triangle region and the state of North Carolina; and

WHEREAS, NC Session Law 2011-7 prohibits the construction of the Southeast Extension of the Wake Outer Loop on any location north of the existing protected corridor established by the North Carolina Department of Transportation in 1995 (now referred to as the Orange route in the currently ongoing environmental study; and

WHEREAS, the National Environmental Policy Act (NEPA) and other Federal laws require study of alternative corridors some of which have been proposed for study north of the protected corridor; and

WHEREAS, the Army Corps of Engineers and the Federal Highway Administration have expressed concern that the ability to analyze and objectively compare alternatives for this project as required by the Clean Water Act will be hampered; and

WHEREAS, the Army Corps of Engineers and the Federal Highway Administration, by letter (Appendix A attached hereto) indicate it is their belief that this project can no longer move forward with the Project Advancement Plan and satisfy all Federal environmental requirements;

NOW THEREFORE BE IT RESOLVED, that the Capital Area Metropolitan Planning Organization respectfully requests that North Carolina Session Law 2011-7 be repealed to allow study of alternative routes for the Southeast Extension of the Wake Outer Loop in accordance with the National Environmental Policy Act and other Federal laws and allow construction of the Wake Outer Loop, as quickly as possible, in a location that meets the needs of area citizens and requirements of federal law.

Adopted on this the 12th day of December 2012



Vivian Jones, Chair
Transportation Advisory Committee



Edison H. Johnson, Jr.
Director, Capital Area MPO

County of Wake
State of North Carolina

I, Valorie D. Lockhart, a Notary Public for said County and State, do hereby certify that on this, the 12th day of December, personally appeared before me, Vivian Jones and Edison Johnson, known to me by their presence, and acknowledged the due execution of the foregoing NC CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION, REQUEST TO REPEAL NORTH CAROLINA SESSION LAW 2011-7

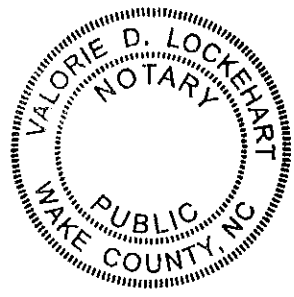
Witness my hand and official seal, this the 12th day of December 2012.

(Official Seal)



Valorie D. Lockhart, Notary Public

My commission expires January 31 2016





December 20, 2012

Members of the North Carolina General Assembly

Subject: NC Session Law 2011-7

Dear Sirs/Madams:

Transmitted with this letter is a Resolution from the North Carolina Capital Area Metropolitan Planning Organization's Executive Policy Board, approved at its meeting on December 12, 2012, requesting the repeal of NC Session Law 2011-7 pertaining to the construction of the Southeast Extension of the Wake County Outer Loop (also known as the Triangle Expressway).

The Wake Outer Loop has been an adopted element of the Capital Area Metropolitan Planning Organization's (MPO) Long-Range Transportation Plans for 2025, 2030, and 2035 and is an essential highway corridor included in the MPO's 2040 Comprehensive Metropolitan Transportation Plan (CMTP). This project has historically been one of the highest priority projects in both the MPO's Transportation Improvement Plan and the State Transportation Improvement Program.

NC Session Law 2011-7 prohibits construction of the Southeast Extension of the Loop on location north of an existing protected corridor established by the North Carolina Department of Transportation in 1995 (known as the Orange route in the currently ongoing environmental study). Although well intentioned, this prohibition is contrary to the National Environmental Policy Act (NEPA) and other Federal laws that require study of alternative corridors, which would include those north of the protected corridor. The Army Corps of Engineers and the Federal Highway Administration have expressed concern that the ability to analyze and objectively compare alternatives for this project as required by the Clean Water Act will be hampered. They further indicate that it is their belief that this project can no longer move forward with the Project Advancement Plan and satisfy all Federal environmental requirements.

The Capital Area Metropolitan Planning Organization is therefore requesting that North Carolina Session Law 2011-7 be repealed as soon as practicable to allow study of a full range of alternative routes for the Southeast Extension of the Wake Outer Loop in accordance with the National Environmental Policy Act and other Federal laws to allow the preferred route to be approved and constructed for the completion of the Wake Outer Loop.

Sincerely,

Vivian Jones, Chair
Transportation Advisory Committee
Capital Area MPO

cc: Representative Thom Tillis, North Carolina House Speaker
Senator Phil Berger, North Carolina Senate President Pro Tem
Wake County Legislative Delegation
TAC Members



Town of Garner

900 7th Avenue · Garner, North Carolina 27529
Phone (919) 772-4688 · Fax (919) 662-8874 · www.GarnerNC.gov

January 23, 2013

North Carolina General Assembly
Wake County Representation
16 West Jones Street
Raleigh, NC 27601

Dear Honorable Member:

North Carolina Session Law 2011-7 (NCSL 2011-7) was approved by the North Carolina General Assembly in and signed into law by Governor Bev Perdue in March 2011. This law restricts the NC Turnpike Authority's selection of future Triangle Expressway Southeast (540) corridors to existing protected corridors, except in the area of I-40 East.

The Town of Garner and the Metropolitan Raleigh Region agree that 540 is vital to our region's future and we all support the construction of 540 to connect the outer loop. Over the past two years, the Town of Garner has utilized herculean efforts to find solutions and alternatives to this horribly bothersome problem, including hiring nationally recognized consultants, engaging in cooperative conversations with Southern Wake County Mayors, NC Department of Transportation (NCDOT) Capital Area Metropolitan Planning Organization (CAMPO) and the Regional Transportation Alliance.

In spite of these efforts, the Federal Highway Administration (FHWA) and US Army Corps of Engineers (Corps) have indicated via letter to NCDOT officials that NCSL 2011-7 is contrary to the National Environmental Policy Act (NEPA) and the Clean Water Act, thereby hampering their ability to analyze and objectively compare alternatives as required by these and other federal laws. These agencies have indicated that they believe the 540 project can no longer move forward in a manner satisfactory to all federal environmental requirements unless NCSL 2011-7 is repealed.

Subsequently, CAMPO adopted a Resolution on December 12, 2012 requesting that the NC General Assembly repeal Session Law 2011-7 to allow study of alternative routes for the Triangle Expressway Southeast as quickly as possible. That action is leading us to where we are today.

Positive economic impacts can be documented in the Town of Garner since Session Law 2011-7 was adopted on March 18, 2011. The most notable was the construction of the \$12.5 million Strategic Behavioral Center in Greenfield South Business Park and dozens of new houses in the Village of Aversboro. As a reminder, the red route tramples 13 neighborhoods, 4 town parks, and our primary industrial park. The Town is completely opposed to the red route and insists that it not be studied or advanced in any way.

The Town of Garner is opposed to the repeal of Session Law 2011-7.


If NCSL 2011-7 is repealed or amended, then the Town requests that the General Assembly also mandate the following:

- A. Ensure that NCDOT, CAMPO, and all involved federal agencies, especially FHWA and Corps, expedite all steps of the refinement and development of the necessary Environmental Impact Statement process for the Triangle Expressway Southeast, and to include the Town of Garner and the Garner Chamber of Commerce as key stakeholders in the EIS development process.
- B. Ensure that NCDOT fully considers all reasonable alternatives, other than red, as suggested via adopted motion by the CAMPO Board of Directors at their December 12, 2012 meeting. This includes orange, blue, purple, lilac, and plum.
- C. Assign a General Assembly Oversight Committee to monitor this issue on behalf of the citizens of Garner and Southern Wake County to ensure that all involved agencies move this process along as fast as possible.


This is a very important issue to the Garner community and has tremendous economic development implications. Thank you for your consideration of our request.


Sincerely,


Ronnie S. Williams
Mayor


Jackie Johns
Mayor Pro Tem

Kathy Behringer
Council Member


Buck Kennedy
Council Member


Ken Marshburn
Council Member


Gra Singleton
Council Member



- c:
- Thom Tillis, Speaker, North Carolina House of Representatives
 - Phil Berger, President Pro Tempore, North Carolina Senate
 - Rep. William Brawler, Chairman, House Transportation Committee
 - Rep. Frank Iler, Chairman, House Transportation Committee
 - Sen. Warren Daniel, Co-Chairman, Senate Transportation Committee
 - Sen. Kathy Harrington, Co-Chairman, Senate Transportation Committee

**GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2013**

**SESSION LAW 2013-94
HOUSE BILL 10**

AN ACT TO REMOVE THE RESTRICTION ON THE TURNPIKE AUTHORITY'S
SELECTION OF A CORRIDOR LOCATION FOR THE SOUTHEAST EXTENSION
PROJECT OF N.C. 540.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 136-89.183(a)(2)a. reads as rewritten:

"(2) To study, plan, develop, and undertake preliminary design work on up to eight Turnpike Projects. At the conclusion of these activities, the Turnpike Authority is authorized to design, establish, purchase, construct, operate, and maintain the following projects:

- a. Triangle Expressway, including segments also known as N.C. 540, Triangle Parkway, and the Western Wake Freeway in Wake and Durham Counties, and Southeast Extension in Wake and Johnston Counties, except that no portion of the Southeast Extension shall be located north of an existing protected corridor established by the Department of Transportation circa 1995, except in the area of Interstate 40 East. Counties. The described segments constitute three projects."

SECTION 2. The Department of Transportation shall strive to expedite the federal environmental impact statement process to define the route for the Southeast Extension of the Triangle Expressway Turnpike Project by promptly garnering input from local officials and other stakeholders, accelerating any required State studies, promptly submitting permit applications to the federal government, working closely with the federal government during the permitting process, and taking any other appropriate actions to accelerate the environmental permitting process.

SECTION 3. As part of its oversight of the Department of Transportation, the Joint Legislative Transportation Oversight Committee shall closely monitor the progress of the Southeast Extension of the Triangle Expressway Turnpike Project.

SECTION 3.1. This act is effective only if House Bill 817, 2013 Regular Session, becomes law.



SECTION 4. This act is effective when it becomes law.
In the General Assembly read three times and ratified this the 4th day of June, 2013.

s/ Daniel J. Forest
President of the Senate

s/ Thom Tillis
Speaker of the House of Representatives

s/ Pat McCrory
Governor

Approved 4:29 p.m. this 12th day of June, 2013

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2013

SESSION LAW 2013-183
HOUSE BILL 817

AN ACT TO STRENGTHEN THE ECONOMY THROUGH STRATEGIC
TRANSPORTATION INVESTMENTS.

The General Assembly of North Carolina enacts:

STRATEGIC TRANSPORTATION INVESTMENTS

SECTION 1.1.(a) Chapter 136 of the General Statutes is amended by adding a new Article to read:

"Article 14B.

"Strategic Prioritization Funding Plan for Transportation Investments.

"§ 136-189.10. Definitions.

The following definitions apply in this Article:

- (1) Statewide strategic mobility projects. – Includes only the following:
 - a. Interstate highways and future interstate highways approved by the federal government.
 - b. Routes on the National Highway System as of July 1, 2012, excluding intermodal connectors.
 - c. Highway routes on the United States Department of Defense Strategic Highway Network (STRAHNET).
 - d. Highway toll routes designated by State law or by the Department of Transportation, pursuant to its authority under State law.
 - e. Highway projects listed in G.S. 136-179, as it existed on July 1, 2012, that are not authorized for construction as of July 1, 2015.
 - f. Appalachian Development Highway System.
 - g. Commercial service airports included in the Federal Aviation Administration's National Plan of Integrated Airport Systems (NPIAS) that provide international passenger service or 375,000 or more enplanements annually, provided that the State's annual financial participation in any single airport project included in this subdivision may not exceed five hundred thousand dollars (\$500,000).
 - h. Freight capacity and safety improvements to Class I freight rail corridors.
- (2) Regional impact projects. – Includes only the following:
 - a. Projects listed in subdivision (1) of this section, subject to the limitations noted in that subdivision.
 - b. U.S. highway routes not included in subdivision (1) of this section.
 - c. N.C. highway routes not included in subdivision (1) of this section.
 - d. Commercial service airports included in the NPIAS that are not included in subdivision (1) of this section, provided that the State's annual financial participation in any single airport project included in this subdivision may not exceed three hundred thousand dollars (\$300,000).
 - e. The State-maintained ferry system, excluding passenger vessel replacement.
 - f. Rail lines that span two or more counties not included in subdivision (1) of this section.



- g. Public transportation service that spans two or more counties and that serves more than one municipality. Expenditures pursuant to this sub-subdivision shall not exceed ten percent (10%) of any distribution region allocation.
- (3) Division needs projects. – Includes only the following:
- a. Projects listed in subdivision (1) or (2) of this section, subject to the limitations noted in those subsections.
 - b. State highway routes not included in subdivision (1) or (2) of this section.
 - c. Airports included in the NPIAS that are not included in subdivision (1) or (2) of this section, provided that the State's total annual financial participation under this sub-subdivision shall not exceed eighteen million five hundred thousand dollars (\$18,500,000).
 - d. Rail lines not included in subdivision (1) or (2) of this section.
 - e. Public transportation service not included in subdivision (1) or (2) of this section.
 - f. Multimodal terminals and stations serving passenger transit systems.
 - g. Federally funded independent bicycle and pedestrian improvements.
 - h. Replacement of State-maintained ferry vessels.
 - i. Federally funded municipal road projects.
- (4) Distribution Regions. – The following Distribution Regions apply to this Article:
- a. Distribution Region A consists of the following counties: Bertie, Camden, Chowan, Currituck, Dare, Edgecombe, Gates, Halifax, Hertford, Hyde, Johnston, Martin, Nash, Northampton, Pasquotank, Perquimans, Tyrrell, Washington, Wayne, and Wilson.
 - b. Distribution Region B consists of the following counties: Beaufort, Brunswick, Carteret, Craven, Duplin, Greene, Jones, Lenoir, New Hanover, Onslow, Pamlico, Pender, Pitt, and Sampson.
 - c. Distribution Region C consists of the following counties: Bladen, Columbus, Cumberland, Durham, Franklin, Granville, Harnett, Person, Robeson, Vance, Wake, and Warren.
 - d. Distribution Region D consists of the following counties: Alamance, Caswell, Davidson, Davie, Forsyth, Guilford, Orange, Rockingham, Rowan, and Stokes.
 - e. Distribution Region E consists of the following counties: Anson, Cabarrus, Chatham, Hoke, Lee, Mecklenburg, Montgomery, Moore, Randolph, Richmond, Scotland, Stanly, and Union.
 - f. Distribution Region F consists of the following counties: Alexander, Alleghany, Ashe, Avery, Caldwell, Catawba, Cleveland, Gaston, Iredell, Lincoln, Surry, Watauga, Wilkes, and Yadkin.
 - g. Distribution Region G consists of the following counties: Buncombe, Burke, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, and Yancey.

"§ 136-189.11. Transportation Investment Strategy Formula.

(a) Funds Subject to Formula. – The following sources of funds are subject to this section:

- (1) Highway Trust Fund funds, in accordance with G.S. 136-176.
- (2) Federal aid funds.

(b) Funds Excluded From Formula. – The following funds are not subject to this section:

- (1) Federal congestion mitigation and air quality improvement program funds appropriated to the State by the United States pursuant to 23 U.S.C. § 104(b)(2) and 23 U.S.C. § 149.
- (2) Funds received through competitive awards or discretionary grants through federal appropriations either for local governments, transportation authorities, transit authorities, or the Department.

- (3) Funds received from the federal government that under federal law may only be used for Appalachian Development Highway System projects.
- (4) Funds used in repayment of "GARVEE" bonds related to Phase I of the Yadkin River Veterans Memorial Bridge project.
- (5) Funds committed to gap funding for toll roads funded with bonds issued pursuant to G.S. 136-176.
- (6) Funds obligated for projects in the State Transportation Improvement Program that are scheduled for construction as of April 1, 2013, in State fiscal year 2012-2013, 2013-2014, or 2014-2015.
- (7) Toll collections from a turnpike project under Article 6H of this Chapter and other revenue from the sale of the Authority's bonds or notes or project loans, in accordance with G.S. 136-89.192.
- (8) Toll collections from the State-maintained ferry system collected under the authority of G.S. 136-82.
- (9) Federal State Planning and Research Program funds.
- (b1) Funds Excluded From Regional Impact Project Category. – Federal Surface Transportation Program-Direct Attributable funds expended on eligible projects in the Regional Impact Project category are excluded from that category.
- (c) Funds With Alternate Criteria. – The following federal program activities shall be included in the applicable category of the Transportation Investment Strategy Formula set forth in subsection (d) of this section but shall not be subject to the prioritization criteria set forth in that subsection:
 - (1) Bridge replacement.
 - (2) Interstate maintenance.
 - (3) Highway safety improvement.
- (d) Transportation Investment Strategy Formula. – Funds subject to the Formula shall be distributed as follows:
 - (1) Statewide Strategic Mobility Projects. – Forty percent (40%) of the funds subject to this section shall be used for Statewide Strategic Mobility Projects.
 - a. Criteria. – Transportation-related quantitative criteria shall be used by the Department to rank highway projects that address cost-effective Statewide Strategic Mobility needs and promote economic and employment growth. The criteria for selection of Statewide Strategic Mobility Projects shall utilize a numeric scale of 100 points, based on consideration of the following quantitative criteria:
 - 1. Benefit cost.
 - 2. Congestion.
 - 3. Safety.
 - 4. Economic competitiveness.
 - 5. Freight.
 - 6. Multimodal.
 - 7. Pavement condition.
 - 8. Lane width.
 - 9. Shoulder width.
 - b. Project cap. – No more than ten percent (10%) of the funds projected to be allocated to the Statewide Strategic Mobility category over any five-year period may be assigned to any contiguous project or group of projects in the same corridor within a Highway Division or within adjoining Highway Divisions.
 - (2) Regional Impact Projects. – Thirty percent (30%) of the funds subject to this section shall be used for Regional Impact Projects and allocated by population of Distribution Regions based on the most recent estimates certified by the Office of State Budget and Management.
 - a. Criteria. – A combination of transportation-related quantitative criteria, qualitative criteria, and local input shall be used to rank Regional Impact Projects involving highways that address cost-effective needs from a region-wide perspective and promote

economic growth. Local input is defined as the rankings identified by the Department's Transportation Division Engineers, Metropolitan Planning Organizations, and Rural Transportation Planning Organizations. The criteria utilized for selection of Regional Impact Projects shall be based thirty percent (30%) on local input and seventy percent (70%) on consideration of a numeric scale of 100 points based on the following quantitative criteria:

1. Benefit cost.
2. Congestion.
3. Safety.
4. Freight.
5. Multimodal.
6. Pavement condition.
7. Lane width.
8. Shoulder width.
9. Accessibility and connectivity to employment centers, tourist destinations, or military installations.

(3) Division Need Projects. – Thirty percent (30%) of the funds subject to this section shall be allocated in equal share to each of the Department divisions, as defined in G.S. 136-14.1, and used for Division Need Projects.

a. Criteria. – A combination of transportation-related quantitative criteria, qualitative criteria, and local input shall be used to rank Division Need Projects involving highways that address cost-effective needs from a Division-wide perspective, provide access, and address safety-related needs of local communities. Local input is defined as the rankings identified by the Department's Transportation Division Engineers, Metropolitan Planning Organizations, and Rural Transportation Planning Organizations. The criteria utilized for selection of Division Need Projects shall be based fifty percent (50%) on local input and fifty percent (50%) on consideration of a numeric scale of 100 points based on the following quantitative criteria, except as provided in sub-subdivision b. of this subdivision:

1. Benefit cost.
2. Congestion.
3. Safety.
4. Freight.
5. Multimodal.
6. Pavement condition.
7. Lane width.
8. Shoulder width.
9. Accessibility and connectivity to employment centers, tourist destinations, or military installations.

b. Alternate criteria. – Funding from the following programs shall be included in the computation of each of the Department division equal shares but shall be subject to alternate quantitative criteria:

1. Federal Surface Transportation Program-Direct Attributable funds expended on eligible projects in the Division Need Projects category.
2. Federal Transportation Alternatives funds appropriated to the State.
3. Federal Railway-Highway Crossings Program funds appropriated to the State.
4. Projects requested from the Department in support of a time-critical job creation opportunity, when the opportunity would be classified as transformational under the Job Development Investment Grant program established pursuant to G.S. 143B-437.52, provided that the total State investment in each fiscal year for all projects funded under this

sub-subdivision shall not exceed ten million dollars (\$10,000,000) in the aggregate or two million dollars (\$2,000,000) per project.

5. Federal funds for municipal road projects.

c. Bicycle and pedestrian limitation. – The Department shall not provide financial support for independent bicycle and pedestrian improvement projects, except for federal funds administered by the Department for that purpose. This sub-subdivision shall not apply to funds allocated to a municipality pursuant to G.S. 136-41.1 that are committed by the municipality as matching funds for federal funds administered by the Department and used for bicycle and pedestrian improvement projects. This limitation shall not apply to funds authorized for projects in the State Transportation Improvement Program that are scheduled for construction as of October 1, 2013, in State fiscal year 2012-2013, 2013-2014, or 2014-2015.

(4) Criteria for nonhighway projects. – Nonhighway projects subject to this subsection shall be evaluated through a separate prioritization process established by the Department that complies with all of the following:

a. The criteria used for selection of projects for a particular transportation mode shall be based on a minimum of four quantitative criteria.

b. Local input shall include rankings of projects identified by the Department's Transportation Division Engineers, Metropolitan Planning Organizations, and Rural Transportation Planning Organizations.

c. The criteria shall be based on a scale not to exceed 100 points that includes no bonus points or other alterations favoring any particular mode of transportation.

(e) Authorized Formula Variance. – The Department may vary from the Formula set forth in this section if it complies with the following:

(1) Limitation on variance. – The Department, in obligating funds in accordance with this section, shall ensure that the percentage amount obligated to Statewide Strategic Mobility Projects, Regional Impact Projects, and Division Need Projects does not vary by more than five percent (5%) over any five-year period from the percentage required to be allocated to each of those categories by this section. Funds obligated among distribution regions or divisions pursuant to this section may vary up to ten percent (10%) over any five-year period.

(2) Calculation of variance. – Each year the Secretary shall calculate the amount of Regional Impact and Division Need funds allocated in that year to each division and region, the amount of funds obligated, and the amount the obligations exceeded or were below the allocation. In the first variance calculation under this subdivision following the end of fiscal year 2015-2016, the target amounts obtained according to the Formula set forth in this section shall be adjusted to account for any differences between allocations and obligations reported for the previous year. In the first variance calculation under this subdivision following the end of fiscal year 2016-2017, the target amounts obtained according to the Formula set forth in this section shall be adjusted to account for any differences between allocations and obligations reported for the previous two fiscal years. In the first variance calculation under this subdivision following the end of fiscal year 2017-2018, the target amounts obtained according to the Formula set forth in this section shall be adjusted to account for any differences between allocations and obligations reported for the previous three fiscal years. In the first variance calculation under this subdivision following the end of fiscal year 2018-2019, the target amounts obtained according to the Formula set forth in this section shall be adjusted to account for any differences between allocations and obligations reported for the previous four fiscal years. The new target amounts shall be used to fulfill the requirements of subdivision

(1) of this subsection for the next update of the Transportation Improvement Program. The adjustment to the target amount shall be allocated by Distribution Region or Division, as applicable.

(f) Incentives for Local Funding and Highway Tolling. – The Department may revise highway project selection ratings based on local government funding initiatives and capital construction funding directly attributable to highway toll revenue. Projects authorized for construction after November 1, 2013, and contained in the 10-year Department of Transportation work program are eligible for a bonus allocation under this subsection.

- (1) Definitions. – The following definitions apply in this subsection:
 - a. Bonus allocation. – The allocation obtained as a result of local government funding participation or highway tolling.
 - b. Local funding participation. – Non-State or nonfederal funds committed by local officials to leverage the commitment of State or federal transportation funds towards construction.
- (2) Funds obtained from local government funding participation. – Upon authorization to construct a project with funds obtained by local government funding participation, the Department shall make available for allocation as set forth in subdivision (4) of this section an amount equal to one-half of the local funding commitment for other eligible highway projects that serve the local entity or entities that provided the local funding.
- (3) Funds obtained through highway tolling. – Upon authorization to construct a project with funding from toll revenue, the Department shall make available for allocation an amount equal to one-half of the project construction cost derived from toll revenue bonds. The amount made available for allocation to other eligible highway projects shall not exceed two hundred million dollars (\$200,000,000) of the capital construction funding directly attributable to the highway toll revenues committed in the Investment Grade Traffic and Revenue Study, for a project for which funds have been committed on or before July 1, 2015. The amount made available for allocation to other eligible highway projects shall not exceed one hundred million dollars (\$100,000,000) of the capital construction funding directly attributable to the highway toll revenues committed in the Investment Grade Traffic and Revenue Study, for a project for which funds are committed after July 1, 2015. If the toll project is located in one or more Metropolitan Planning Organization or Rural Transportation Planning Organization boundaries, based on the boundaries in existence at the time of letting of the project construction contract, the bonus allocation shall be distributed proportionately to lane miles of new capacity within the Organization's boundaries. The Organization shall apply the bonus allocation only within those counties in which the toll project is located.
- (4) Use of bonus allocation. – The Metropolitan Planning Organization, Rural Transportation Planning Organization, or the local government may choose to apply its bonus allocation in one of the three categories or in a combination of the three categories as provided in this subdivision.
 - a. Statewide Strategic Mobility Projects category. – The bonus allocation shall apply over the five-year period in the State Transportation Improvement Program in the cycle following the contractual obligation.
 - b. Regional Impact Projects category. – The bonus allocation is capped at ten percent (10%) of the regional allocation, or allocation to multiple regions, made over a five-year period and shall be applied over the five-year period in the State Transportation Improvement Program in the cycle following the contractual obligation.
 - c. Division Needs Projects category. – The bonus allocation is capped at ten percent (10%) of the division allocation, or allocation to multiple divisions, made over a five-year period and shall be applied over the five-year period in the State Transportation Improvement Program in the cycle following the contractual obligation.

(g) Reporting. – The Department shall publish on its Web site, in a link to the "Strategic Transportation Investments" Web site linked directly from the Department's home page, the following information in an accessible format as promptly as possible:

- (1) The quantitative criteria used in each highway and nonhighway project scoring, including the methodology used to define each criteria, the criteria presented to the Board of Transportation for approval, and any adjustments made to finalize the criteria.
- (2) The quantitative and qualitative criteria in each highway or nonhighway project scoring that is used in each region or division to finalize the local input score and shall include distinctions between Metropolitan Planning Organization and Rural Transportation Planning Organization scoring and methodologies.
- (3) Notification of changes to the methodologies used to calculate quantitative criteria.
- (4) The final quantitative formulas, including the number of points assigned to each criteria, used in each highway and nonhighway project scoring used to obtain project rankings in the Statewide, Regional, and Division categories. If the Department approves different formulas or point assignments regionally or by division, the final scoring for each area shall be noted.
- (5) The project scorings associated with the release of the draft and final State Transportation Improvement Program."

SECTION 1.1.(b) Effective July 1, 2019, G.S. 136-189.11(e)(2), as enacted by subsection (a) of this section, reads as rewritten:

"(e) Authorized Formula Variance. – The Department may vary from the Formula set forth in this section if it complies with the following:

- ...
- (2) Calculation of Variance. – Each year, the Secretary shall calculate the amount of Regional Impact and Division Need funds allocated in that year to each ~~division, division and region,~~ the amount of funds obligated, and the amount the obligations exceeded or were below the allocation. ~~In the first variance calculation under this subdivision following the end of fiscal year 2015-16, the target amounts obtained according to the Formula set forth in this section shall be adjusted to account for any differences between allocations and obligations reported for the previous year. In the first variance calculation under this subdivision following the end of fiscal year 2016-17, the target amounts obtained according to the Formula set forth in this section shall be adjusted to account for any differences between allocations and obligations reported for the previous two fiscal years. In the first variance calculation under this subdivision following the end of fiscal year 2017-18, the target amounts obtained according to the Formula set forth in this section shall be adjusted to account for any differences between allocations and obligations reported for the previous three fiscal years. In the first variance calculation under this subdivision following the end of fiscal year 2018-19, the~~ The target amounts obtained according to the Formula set forth in this section shall be adjusted to account for any differences between allocations and obligations reported for the previous ~~four~~ five fiscal years. The new target amounts shall be used to fulfill the requirements of subdivision (1) of this subsection for the next update of the Transportation Improvement Program. The adjustment to the target amount shall be allocated by Distribution Region or Division, as applicable."

SECTION 1.2. Strategic Prioritization Process Reporting. – The Department shall issue a draft revision to the State Transportation Improvement Program required by G.S. 143B-350(f)(4) no later than January 1, 2015. The Board of Transportation shall approve the revised State Transportation Improvement Program no later than July 1, 2015.

SECONDARY ROADS CHANGES

SECTION 2.1. G.S. 20-85 reads as rewritten:
"§ 20-85. **Schedule of fees.**

...

(a1) One dollar (\$1.00) of the fee imposed for any transaction assessed a fee under subdivision (a)(1), (a)(2), (a)(3), (a)(7), (a)(8), or (a)(9) of this section shall be credited to the North Carolina Highway Fund. The Division shall use the fees derived from transactions with the Division for technology improvements. The Division shall use the fees derived from transactions with commission contract agents for the payment of compensation to commission contract agents. An additional fifty cents (50¢) of the fee imposed for any transaction assessed a fee under subdivision (a)(1) of this section shall be credited to the Mercury Switch Removal Account in the Department of Environment and Natural Resources. ~~An additional fifty cents (50¢) of the fee imposed for any transaction assessed a fee under subdivision (a)(1) of this section shall be credited as follows:~~

- ~~(1) The first four hundred thousand dollars (\$400,000) collected shall be credited to the Reserve for Visitor Centers in the Highway Fund.~~
- ~~(2) Any additional funds collected shall be credited to the Highway Trust Fund and, notwithstanding G.S. 136-176(b), shall be allocated and used for urban loop projects.~~

(a2) From the fees collected under subdivisions (a)(1) through (a)(9) of this section, the Department shall annually credit the sum of four hundred thousand dollars (\$400,000) to the Reserve for Visitor Centers in the Highway Fund.

(b) Except as otherwise provided in ~~subsection (a1)~~subsections (a1) and (a2) of this section, the fees collected under subdivisions (a)(1) through (a)(9) of this section shall be credited to the North Carolina Highway Trust Fund. The fees collected under subdivision (a)(10) of this section shall be credited to the Highway Fund. ~~Fifteen dollars (\$15.00) of each title fee credited to the Trust Fund under subdivision (a)(1) shall be added to the amount allocated for secondary roads under G.S. 136-176 and used in accordance with G.S. 136-44.5.~~

...."

SECTION 2.2.(a) G.S. 136-44.2 reads as rewritten:

"§ 136-44.2. Budget and appropriations.

(a) The Director of the Budget shall include in the "Current Operations Appropriations Act" an enumeration of the purposes or objects of the proposed expenditures for each of the ~~construction and maintenance~~construction, maintenance, and improvement programs for that budget period for the State primary, secondary, State parks road systems, and other transportation systems. The State primary system shall include all portions of the State highway system located both inside and outside municipal corporate limits that are designated by N.C., U.S. or Interstate numbers. The State secondary system shall include all of the State highway system located both inside and outside municipal corporate limits that is not a part of the State primary system. The State parks system shall include all State parks roads and parking lots that are not also part of the State highway system. The transportation systems shall also include State-maintained, nonhighway modes of ~~transportation as well as transportation.~~

(b) All ~~construction and maintenance~~construction, maintenance, and improvement programs for which appropriations are requested shall be enumerated separately in the budget. Programs that are entirely State funded shall be listed separately from those programs involving the use of federal-aid funds. Proposed appropriations of State matching funds for each of the federal-aid construction programs shall be enumerated separately as well as the federal-aid funds anticipated for each program in order that the total construction requirements for each program may be provided for in the budget. Also, proposed State matching funds for the highway planning and research program shall be included separately along with the anticipated federal-aid funds for that purpose.

(c) Other program categories for which appropriations are requested, such as, but not limited to, maintenance, channelization and traffic control, bridge maintenance, public service and access road construction, transportation projects and systems, and ferry operations shall be enumerated in the budget.

(d) The Department of Transportation shall have all powers necessary to comply fully with provisions of present and future federal-aid acts. For purposes of this section, "federally eligible construction project" means any construction project except secondary road projects developed pursuant to G.S. 136-44.7 and 136-44.8 eligible for federal funds under any federal-aid act, whether or not federal funds are actually available.

(e) The "Current Operations Appropriations Act" shall also contain the proposed appropriations of State funds for use in each county for ~~maintenance and construction~~construction, maintenance, and improvement of secondary roads, to be allocated in

accordance with G.S. 136-44.5 and 136-44.6. State funds appropriated for secondary roads shall not be transferred nor used except for the ~~construction and maintenance~~construction, maintenance, and improvement of secondary roads in the county for which they are allocated pursuant to G.S. 136-44.5 and 136-44.6.

...."

SECTION 2.2.(b) Effective July 1, 2014, G.S. 136-44.2, as rewritten by subsection

(a) of this section, reads as rewritten:

"§ 136-44.2. Budget and appropriations.

(a) The Director of the Budget shall include in the "Current Operations Appropriations Act" an enumeration of the purposes or objects of the proposed expenditures for each of the ~~construction, maintenance, maintenance~~ and improvement programs for that budget period for the State primary, secondary, State parks road systems, and other transportation systems. The State primary system shall include all portions of the State highway system located both inside and outside municipal corporate limits that are designated by N.C., U.S. or Interstate numbers. The State secondary system shall include all of the State highway system located both inside and outside municipal corporate limits that is not a part of the State primary system. The State parks system shall include all State parks roads and parking lots that are not also part of the State highway system. The transportation systems shall also include State-maintained, nonhighway modes of transportation.

(b) All ~~construction, maintenance, maintenance~~ and improvement programs for which appropriations are requested shall be enumerated separately in the budget. Programs that are entirely State funded shall be listed separately from those programs involving the use of federal-aid funds. ~~Proposed appropriations of State matching funds for each of the federal-aid construction programs shall be enumerated separately as well as the federal-aid funds anticipated for each program in order that the total construction requirements for each program may be provided for in the budget. Also, proposed~~ Proposed State matching funds for the highway planning and research program shall be included separately along with the anticipated federal-aid funds for that purpose.

(c) Other program categories for which appropriations are requested, such as, but not limited to, maintenance, channelization and traffic control, bridge maintenance, public service and access road construction, transportation projects and systems, and ferry operations shall be enumerated in the budget.

(d) The Department of Transportation shall have all powers necessary to comply fully with provisions of present and future federal-aid acts. For purposes of this section, "federally eligible construction project" means any construction project except secondary road projects developed pursuant to ~~G.S. 136-44.7 and 136-44.8~~G.S. 136-44.8 eligible for federal funds under any federal-aid act, whether or not federal funds are actually available.

(e) The "Current Operations Appropriations Act" shall also contain the proposed appropriations of State funds for use in each county for ~~construction, maintenance, maintenance~~ and improvement of secondary roads, to be allocated in accordance with ~~G.S. 136-44.5 and 136-44.6~~G.S. 136-44.6. State funds appropriated for secondary roads shall not be transferred nor used except for the ~~construction, maintenance, maintenance~~ and improvement of secondary roads in the county for which they are allocated pursuant to ~~G.S. 136-44.5 and 136-44.6~~G.S. 136-44.6.

...

(g) The Department of Transportation may provide for costs incurred or accrued for traffic control measures to be taken by the Department at major events which involve a high degree of traffic concentration on State highways, and which cannot be funded from regular budgeted items. This authorization applies only to events which are expected to generate 30,000 vehicles or more per day. The Department of Transportation shall provide for this funding by allocating and reserving up to one hundred thousand dollars (\$100,000) before any other allocations from the appropriations for State maintenance for ~~primary, secondary, and urban~~primary and secondary road systems are made, based upon the same proportion as is appropriated to each system."

SECTION 2.3.(a) G.S. 136-44.2A reads as rewritten:

"§ 136-44.2A. Secondary road ~~improvement~~ improvement construction program.

There shall be annually allocated from the Highway Fund to the Department of Transportation for secondary road ~~improvement construction~~ programs developed pursuant to ~~G.S. 136-44.7 and 136-44.8~~, a sum provided by law. ~~equal to that allocation made from the~~

~~Highway Fund under G.S. 136-41.1(a). In addition, as provided in G.S. 136-176(b)(4) and G.S. 20-85(b), revenue is annually allocated from the Highway Trust Fund for secondary road construction. Of the funds allocated from the Highway Fund, the sum of sixty-eight million six hundred seventy thousand dollars (\$68,670,000) shall be allocated among the counties in accordance with G.S. 136-44.5(b). All funds allocated from the Highway Fund for secondary road improvements in excess of that amount shall be allocated among the counties in accordance with G.S. 136-44.5(c). All funds allocated from the Highway Trust Fund for secondary road improvement programs shall be allocated in accordance with G.S. 136-182."~~

~~SECTION 2.3.(b) Effective July 1, 2014, G.S. 136-44.2A is repealed.~~

~~SECTION 2.4. G.S. 136-44.2C is repealed.~~

~~SECTION 2.5. Article 2A of Chapter 136 is amended by adding a new section to read:~~

~~"§ 136-44.2D. **Secondary unpaved road paving program.**~~

~~(a) The Department of Transportation shall expend funds allocated to the paving of unpaved secondary roads for the paving of unpaved secondary roads based on a statewide prioritization. The Department shall pave the eligible unpaved secondary roads that receive the highest priority ranking within this statewide prioritization. Nothing in this subsection shall be interpreted to require the Department to pave any unpaved secondary roads that do not meet secondary road system addition standards as set forth in G.S. 136-44.10 and G.S. 136-102.6. The Highway Trust Fund shall not be used to fund the paving of unpaved secondary roads."~~

~~SECTION 2.6.(a) G.S. 136-44.5 reads as rewritten:~~

~~"§ 136-44.5. **Secondary roads; mileage study; allocation of funds.**~~

~~(a) Before July 1, in each calendar year, the Department of Transportation shall make a study of all State-maintained unpaved and paved secondary roads in the State. The study shall determine:~~

- ~~(1) The number of miles of unpaved State-maintained roads in each county eligible for paving and the total number of miles that are ineligible;~~
- ~~(2) The total number of miles of unpaved State-maintained roads in the State eligible for paving and the total number of miles that are ineligible; and~~
- ~~(3) The total number of paved State-maintained roads in each county, and the total number of miles of paved State-maintained roads in the State.~~

~~In this subsection, (i) ineligible unpaved mileage is defined as the number of miles of unpaved roads that have unavailable rights-of-way or for which environmental permits cannot be approved to allow for paving, and (ii) eligible unpaved mileage is defined as the number of miles of unpaved roads that have not been previously approved for paving by any funding source or has the potential to be programmed for paving when rights-of-way or environmental permits are secured. Except for federal-aid programs, the Department shall allocate all secondary road improvement funds on the basis of a formula using the study figures.~~

~~(b) The first sixty-eight million six hundred seventy thousand dollars (\$68,670,000) shall be allocated as follows: Each county shall receive a percentage of these funds, the percentage to be determined as a factor of the number of miles of paved and unpaved State-maintained secondary roads in the county divided by the total number of miles of paved and unpaved State-maintained secondary roads in the State, excluding those unpaved secondary roads that have been determined to be eligible for paving as defined in subsection (a) of this section. Beginning in fiscal year 2010-2011, allocations pursuant to this subsection shall be The amounts appropriated by law for secondary road construction, excluding unpaved secondary road funds, shall be allocated among counties based on the total number of secondary miles in a county in proportion to the total State-maintained secondary road mileage.~~

~~(c) Funds allocated for secondary road construction in excess of sixty-eight million six hundred seventy thousand dollars (\$68,670,000) shall be allocated to each county based on the percentage proportion that the number of miles in the county of State-maintained unpaved secondary roads bears to the total number of miles in the State of State-maintained unpaved secondary roads. In a county that has roads with eligible miles, these funds shall only be used for paving unpaved secondary road miles in that county. In a county where there are no roads eligible to be paved as defined in subsection (a) of this section, the funds may be used for improvements on the paved and unpaved secondary roads in that county. Beginning in fiscal year 2010-2011, allocations pursuant to this subsection shall be based on the total number of secondary miles in a county in proportion to the total State-maintained secondary road mileage.~~

~~(d) Copies of the Department study of unpaved and paved State-maintained secondary roads and copies of the individual county allocations shall be made available to newspapers having general circulation in each county."~~

~~SECTION 2.6.(b) Effective July 1, 2014, G.S. 136-44.5 is repealed.~~

~~SECTION 2.6.(c) G.S. 136-44.6 reads as rewritten:~~

~~"§ 136-44.6. **Uniformly applicable formula for the allocation of secondary roads maintenance and improvement funds.**~~

~~The Department of Transportation shall develop a uniformly applicable formula for the allocation of secondary roads maintenance and improvement funds for use in each county. The formula shall take into consideration the number of paved and unpaved miles of state-maintained secondary roads in each county and such other factors as experience may dictate. This section shall not apply to projects to pave unpaved roads under G.S. 136-44.2D."~~

~~SECTION 2.6.(d) Secondary Road Funding. – The sum of fifteen million dollars (\$15,000,000) in nonrecurring funds for the 2013-2014 fiscal year is allocated from the Highway Fund for the secondary road construction program under G.S. 136-44.2A, as enacted by Section 2.3 of this act, and the sum of twelve million dollars (\$12,000,000) in recurring funds for the 2013-2014 fiscal year is allocated from the Highway Fund for the paving of unpaved roads pursuant to G.S. 136-44.2D, as enacted by Section 2.5 of this act.~~

~~SECTION 2.7. G.S. 136-44.7 reads as rewritten:~~

~~"§ 136-44.7. **Secondary roads; annual work program; right-of-way acquisition.**~~

~~(a) The Department of Transportation shall be responsible for developing criteria for improvements and maintenance of secondary roads. The criteria shall be adopted by the Board of Transportation before it shall become effective. The Department of Transportation shall be responsible for developing annual work programs for both construction and maintenance of secondary roads in each county in accordance with criteria developed. It shall reflect the long-range and immediate goals of the Department of Transportation. Projects on the annual construction program for each county shall be rated according to their priority based upon the secondary road criteria and standards which shall be uniform throughout the State. Tentative construction projects and estimated funding shall also be listed in accordance to priority. The annual construction program shall be adopted by the Board of Transportation before it shall become effective.~~

~~(b) When a secondary road in a county is listed in the first 10 secondary roads to be paved during a year on a priority list issued by the Department of Transportation under this section, the secondary road cannot be removed from the top 10 of that list or any subsequent list until it is paved. All secondary roads in a county shall be paved, insofar as possible, in the priority order of the list. When a secondary road in the top 10 of that list is removed from the list because it has been paved, the next secondary road on the priority list shall be moved up to the top 10 of that list and shall remain there until it is paved.~~

~~(c) When it is necessary for the Department of Transportation to acquire a right-of-way in accordance with (a) and (b) of this section in order to pave a secondary road or undertake a maintenance project, the Department shall negotiate the acquisition of the right-of-way for a period of up to six months. At the end of that period, if one or more property owners have not dedicated the necessary right-of-way and at least seventy-five percent (75%) of the property owners adjacent to the project and the owners of the majority of the road frontage adjacent to the project have dedicated the necessary property for the right-of-way and have provided funds required by Department rule to the Department to cover the costs of condemning the remaining property, the Department shall initiate condemnation proceedings pursuant to Article 9 of this Chapter to acquire the remaining property necessary for the project.~~

~~(d) The Division Engineer is authorized to reduce the width of a right-of-way to less than 60 feet to pave an unpaved secondary road with the allocated funds, provided that in all circumstances the safety of the public is not compromised and the minimum accepted design practice is satisfied."~~

~~SECTION 2.8.(a) G.S. 136-44.8 reads as rewritten:~~

~~"§ 136-44.8. **Submission of secondary roads construction and unpaved roads paving programs to the Boards of County Commissioners.**~~

~~(a) The Department of Transportation shall post in the county courthouse a county map showing tentative secondary road paving projects rated according to the priority of each project in accordance with the criteria and standards adopted by the Board of Transportation. The map shall be posted at least two weeks prior to the public meeting of the county commissioners at~~

~~which the Department of Transportation representatives are to meet and discuss the proposed secondary road construction program for the county as provided in subsection (c).~~

~~(a1) Representatives of the Department of Transportation shall provide to the board of county commissioners in each county the proposed secondary road construction program and, if applicable to that county, a list of roads proposed for the annual paving program approved by the Board of Transportation. If a paving priority list is presented, it shall include the priority rating of each secondary road paving project included in the proposed paving program according to the criteria and standards adopted by the Board of Transportation.~~

~~(b) The Department of Transportation shall provide a notice to the public of the public meeting of the board of county commissioners at which the annual secondary road construction program for the county proposed by the Department is to be presented to the board and other citizens of the county as provided in subsection (c). The notice shall be published in a newspaper published in the county or having a general circulation in the county once a week for two succeeding weeks prior to the meeting. The notice shall also advise that a county map is posted in the courthouse showing tentative secondary road paving projects rated according to the priority of each project.~~

~~(c) Representatives of the Department of Transportation shall meet with the board of county commissioners at a regular or special public meeting of the board of county commissioners for each county and present to and discuss with the board of county commissioners and other citizens present, the proposed secondary road construction program for the county. The presentation and discussion shall specifically include the priority rating of each tentative secondary road paving project included in the proposed construction program, according to the criteria and standards adopted by the Board of Transportation.~~

~~At the same meeting after the presentation and discussion of the annual secondary road construction program for the county or at a later meeting, the board of county commissioners may (i) concur in the construction program as proposed, or (ii) take no action, or (iii) make recommendations for deviations in the proposed construction program, except as to paving projects and the priority of paving projects for which the board in order to make recommendations for deviations, must vote to consider the matter at a later public meeting as provided in subsection (d).~~

~~(d) The board of county commissioners may recommend deviations in the paving projects and the priority of paving projects included in the proposed secondary road construction program only at a public meeting after notice to the public that the board will consider making recommendations for deviations in paving projects and the priority of paving projects included in the proposed annual secondary road construction program. Notice of the public meeting shall be published by the board of county commissioners in a newspaper published in the county or having a general circulation in the county. After discussion by the members of the board of county commissioners and comments and information presented by other citizens of the county, the board of county commissioners may recommend deviations in the paving projects and in the paving priority of secondary road projects included in the proposed secondary road construction program. Any recommendation made by the board of county commissioners for a deviation in the paving projects or in the priority for paving projects in the proposed secondary road construction program shall state the specific reason for each such deviation recommended.~~

~~(e) The Board of Transportation shall adopt the annual secondary construction program for each county after having given the board of county commissioners of each county an opportunity to review the proposed construction program and to make recommendations as provided in this section. The Board of Transportation shall consider such recommendations insofar as they are compatible with its general plans, standards, criteria and available funds, but having due regard to development plans of the county and to the maintenance and improvement needs of all existing roads in the county. However, no consideration shall be given to any recommendation by the board of county commissioners for a deviation in the paving projects or in the priority for paving secondary road projects in the proposed construction program that is not made in accordance with subsection (d).~~

~~(f) The secondary road construction program and unpaved roads paving programs adopted by the Board of Transportation shall be followed by the Department of Transportation unless changes are approved by the Board of Transportation and notice of any changes is given to the board of county commissioners. The Department of Transportation shall post a copy of the adopted program, including a map showing the secondary road paving projects rated~~

according to the approved priority of each project, at the courthouse, within 10 days of its adoption by the Board of Transportation. The board of county commissioners may petition the Board of Transportation for review of any changes to which it does not consent and the determination of the Board of Transportation shall be final. Upon request, the most recent secondary road construction and unpaved roads paving programs adopted shall be submitted to any member of the General Assembly. The Department of Transportation shall make the annual construction program for each county available to the newspapers having a general circulation in the county."

SECTION 2.8.(b) Effective July 1, 2014, G.S. 136-44.8, as rewritten by subsection (a) of this section, reads as rewritten:

"§ 136-44.8. **Submission of unpaved secondary roads construction and unpaved roads paving programs to the Boards of County Commissioners.**

(a) ~~Representatives~~ In each county having unpaved roads programmed for paving, representatives of the Department of Transportation shall annually provide to the board of county commissioners in ~~each county~~ those counties the proposed secondary road construction program and, if applicable to that county, a list of roads proposed for the annual paving program approved by the Board of Transportation. ~~If a~~ The paving priority list is presented, it shall include the priority rating of each secondary road paving project included in the proposed paving program according to the criteria and standards adopted by the Board of Transportation.

...
(e) ~~The Board of Transportation shall adopt the annual secondary construction program for each county after having given the board of county commissioners of each county an opportunity to review the proposed construction program and to make recommendations as provided in this section. The Board of Transportation shall consider such recommendations insofar as they are compatible with its general plans, standards, criteria and available funds, but having due regard to development plans of the county and to the maintenance and improvement needs of all existing roads in the county.~~

(f) ~~The secondary road construction and unpaved secondary roads paving programs adopted by the Board of Transportation shall be followed by the Department of Transportation unless changes are approved by the Board of Transportation and notice of any changes is given to the board of county commissioners. Upon request, the most recent unpaved secondary road construction and unpaved roads paving programs adopted shall be submitted to any member of the General Assembly. The Department of Transportation shall make the annual construction program for each affected county available to the newspapers having a general circulation in the county."~~

SECTION 2.9. G.S. 136-182 is repealed.

STATE AID TO MUNICIPALITIES/POWELL BILL CHANGES

SECTION 3.1. G.S. 136-41.1 reads as rewritten:

"§ 136-41.1. **Appropriation to municipalities; allocation of funds generally; allocation to Butner.**

(a) There is annually appropriated out of the State Highway Fund a sum equal to ten and four-tenths percent (10.4%) of the net amount after refunds that was produced during the fiscal year by ~~a one and three-fourths cents (1 3/4¢)~~ tax on each gallon of motor fuel ~~taxed the tax imposed~~ under Article 36C of Chapter 105 of the General Statutes and on the equivalent amount of alternative fuel taxed under Article 36D of that Chapter. One-half of the amount appropriated shall be allocated in cash on or before October 1 of each year to the cities and towns of the State in accordance with this section. The second one-half of the amount appropriated shall be allocated in cash on or before January 1 of each year to the cities and towns of the State in accordance with this section. ~~In addition, as provided in G.S. 136-176(b)(3), revenue is allocated and appropriated from the Highway Trust Fund to the cities and towns of this State to be used for the same purposes and distributed in the same manner as the revenue appropriated to them under this section from the Highway Fund. Like the appropriation from the Highway Fund, the appropriation from the Highway Trust Fund shall be based on revenue collected during the fiscal year preceding the date the distribution is made.~~

Seventy-five percent (75%) of the funds appropriated for cities and towns shall be distributed among the several eligible municipalities of the State in the percentage proportion that the population of each eligible municipality bears to the total population of all eligible

municipalities according to the most recent annual estimates of population as certified to the Secretary of Revenue by the State Budget Officer. This annual estimation of population shall include increases in the population within the municipalities caused by annexations accomplished through July 1 of the calendar year in which these funds are distributed. Twenty-five percent (25%) of said fund shall be distributed among the several eligible municipalities of the State in the percentage proportion that the mileage of public streets in each eligible municipality which does not form a part of the State highway system bears to the total mileage of the public streets in all eligible municipalities which do not constitute a part of the State highway system.

It shall be the duty of the mayor of each municipality to report to the Department of Transportation such information as it may request for its guidance in determining the eligibility of each municipality to receive funds under this section and in determining the amount of allocation to which each is entitled. Upon failure of any municipality to make such report within the time prescribed by the Department of Transportation, the Department of Transportation may disregard such defaulting unit in making said allotment.

The funds to be allocated under this section shall be paid in cash to the various eligible municipalities on or before October 1 and January 1 of each ~~year~~ as provided in this section. Provided that eligible municipalities are authorized within the discretion of their governing bodies to enter into contracts for the purpose of maintenance, repair, construction, reconstruction, widening, or improving streets of such municipalities at any time after January 1 of any calendar year in total amounts not to exceed ninety percent (90%) of the amount received by such municipality during the preceding fiscal year, in anticipation of the receipt of funds under this section during the next fiscal year, to be paid for out of such funds when received.

The Department of Transportation may withhold each year an amount not to exceed one percent (1%) of the total amount appropriated for distribution under this section for the purpose of correcting errors in allocations: Provided, that the amount so withheld and not used for correcting errors will be carried over and added to the amount to be allocated for the following year.

The word "street" as used in this section is hereby defined as any public road maintained by a municipality and open to use by the general public, and having an average width of not less than 16 feet. In order to obtain the necessary information to distribute the funds herein allocated, the Department of Transportation may require that each municipality eligible to receive funds under this section submit to it a statement, certified by a registered engineer or surveyor of the total number of miles of streets in such municipality. The Department of Transportation may in its discretion require the certification of mileage on a biennial basis.

...."

SECTION 3.2. G.S. 136-181 is repealed.

SECTION 3.3. G.S. 136-41.3 reads as rewritten:

"§ 136-41.3. Use of funds; records and annual statement; excess accumulation of funds; contracts for maintenance, etc., of streets.

(a) Uses of Funds. – The funds allocated to cities and towns under the provisions of G.S. 136-41.2 shall be expended by said cities and towns only for the purpose of maintaining, repairing, constructing, reconstructing or widening of any street or public thoroughfare including bridges, drainage, curb and gutter, and other necessary appurtenances within the corporate limits of the municipality or for meeting the municipality's proportionate share of assessments levied for such purposes, or for the planning, construction and maintenance of ~~bikeways located within the rights-of-way of public streets and highways, bikeways, greenways,~~ or for the planning, construction, and maintenance of ~~sidewalks along public streets and highways, sidewalks.~~

(b) Records and Annual Statement. – Each municipality receiving funds by virtue of G.S. 136-41.1 and 136-41.2 shall maintain a separate record of accounts indicating in detail all receipts and expenditures of such funds. It shall be unlawful for any municipal employee or member of any governing body to authorize, direct, or permit the expenditure of any funds accruing to any municipality by virtue of G.S. 136-41.1 and 136-41.2 for any purpose not herein authorized. Any member of any governing body or municipal employee shall be personally liable for any unauthorized expenditures. On or before the first day of August each year, the treasurer, auditor, or other responsible official of each municipality receiving funds by virtue of G.S. 136-41.1 and 136-41.2 shall file a statement under oath with the Secretary of

Transportation showing in detail the expenditure of funds received by virtue of G.S. 136-41.1 and 136-41.2 during the preceding year and the balance on hand.

(c) Excess Accumulation of Funds Prohibited. – No funds allocated to municipalities pursuant to G.S. 136-41.1 and 136-41.2 shall be permitted to accumulate for a period greater than permitted by this section. Interest on accumulated funds shall be used only for the purposes permitted by the provisions of G.S. 136-41.3. Except as otherwise provided in this section, any municipality having accumulated an amount greater than the sum of the past 10 allocations made, shall have an amount equal to such excess deducted from the next allocation after receipt of the report required by this section. Such deductions shall be carried over and added to the amount to be allocated to municipalities for the following year. Notwithstanding the other provisions of this section, the Department shall adopt a policy to allow small municipalities to apply to the Department to be allowed to accumulate up to the sum of the past 20 allocations if a municipality's allocations are so small that the sum of the past 10 allocations would not be sufficient to accomplish the purposes of this section.

(d) Contracts for Maintenance and Construction. – In the discretion of the local governing body of each municipality receiving funds by virtue of G.S. 136-41.1 and 136-41.2 it may contract with the Department of Transportation to do the work of maintenance, repair, construction, reconstruction, widening or improving the streets in such municipality; or it may let contracts in the usual manner as prescribed by the General Statutes to private contractors for the performance of said street work; or may undertake the work by force account. The Department of Transportation within its discretion is hereby authorized to enter into contracts with municipalities for the purpose of maintenance, repair, construction, reconstruction, widening or improving streets of municipalities. And the Department of Transportation in its discretion may contract with any city or town which it deems qualified and equipped so to do that the city or town shall do the work of maintaining, repairing, improving, constructing, reconstructing, or widening such of its streets as form a part of the State highway system.

In the case of each eligible municipality, as defined in G.S. 136-41.2, having a population of less than 5,000, the Department of Transportation shall upon the request of such municipality made by official action of its governing body, on or prior to June 1, 1953, or June 1 in any year thereafter, for the fiscal year beginning July 1, 1953, and for the years thereafter do such street construction, maintenance, or improvement on nonsystem streets as the municipality may request within the limits of the current or accrued payments made to the municipality under the provisions of G.S. 136-41.1.

In computing the costs, the Department of Transportation may use the same rates for equipment, rental, labor, materials, supervision, engineering and other items, which the Department of Transportation uses in making charges to one of its own department or against its own department, or the Department of Transportation may employ a contractor to do the work, in which case the charges will be the contract cost plus engineering and inspection. The municipality is to specify the location, extent, and type of the work to be done, and shall provide the necessary rights-of-way, authorization for the removal of such items as poles, trees, water and sewer lines as may be necessary, holding the Department of Transportation free from any claim by virtue of such items of cost and from such damage or claims as may arise therefrom except from negligence on the part of the Department of Transportation, its agents, or employees.

If a municipality elects to bring itself under the provisions of the two preceding paragraphs, it shall enter into a two-year contract with the Department of Transportation and if it desires to dissolve the contract at the end of any two-year period it shall notify the Department of Transportation of its desire to terminate said contract on or before April 1 of the year in which such contract shall expire; otherwise, said contract shall continue for an additional two-year period, and if the municipality elects to bring itself under the provisions of the two preceding paragraphs and thereafter fails to pay its account to the Department of Transportation for the fiscal year ending June 30, by August 1 following the fiscal year, then the Department of Transportation shall apply the said municipality's allocation under G.S. 136-41.1 to this account until said account is paid and the Department of Transportation shall not be obligated to do any further work provided for in the two preceding paragraphs until such account is paid.

Section 143-129 of the General Statutes relating to the procedure for letting of public contracts shall not be applicable to contracts undertaken by any municipality with the Department of Transportation in accordance with the provisions of the three preceding paragraphs.

(e) Permitted Offsets to Funding. – The Department of Transportation is authorized to apply a municipality's share of funds allocated to a municipality under the provisions of G.S. 136-41.1 to any of the following accounts of the municipality with the said Department of Transportation, which the municipality fails to pay:

- (1) Cost sharing agreements for right-of-way entered into pursuant to G.S. 136-66.3, but not to exceed ten percent (10%) of any one year's allocation until the debt is repaid,
- (2) The cost of relocating municipally owned waterlines and other municipally owned utilities on a State highway project which is the responsibility of the municipality,
- (3) For any other work performed for the municipality by the Department of Transportation or its contractor by agreement between the Department of Transportation and the municipality, and
- (4) For any other work performed that was made necessary by the construction, reconstruction or paving of a highway on the State highway system for which the municipality is legally responsible."

SECTION 3.4. G.S. 136-41.4 reads as rewritten:

"§ 136-41.4. **Municipal use of allocated funds; election.**

(a) A municipality that qualifies for an allocation of funds pursuant to G.S. 136-41.1 shall have the ~~option~~ following options:

- (1) ~~to accept~~ Accept all or a portion of funds allocated to the municipality, under that section, for the repair, maintenance, construction, reconstruction, widening, or improving of the municipality's streets, municipality for use as authorized by G.S. 136-41.3(a).
- (2) Use some or all of its allocation to match federal funds administered by the Department for independent bicycle and pedestrian improvement projects within the municipality's limits, or within the area of any metropolitan planning organization or rural transportation planning organization.
- (3) ~~or the municipality may elect~~ Elect to have some or all of the allocation reprogrammed for any Transportation Improvement Project currently on the approved project list within the municipality's limits or within the area of any metropolitan planning organization or rural transportation planning organization.

(b) If a municipality chooses to have its allocation reprogrammed, the ~~minimum~~ amount that may be reprogrammed is an amount equal to that amount necessary to complete one full phase of the project selected by the municipality or an amount that, when added to the amount already programmed for the Transportation Improvement Project selected, would permit the completion of at least one full phase of the project. The restriction set forth in this subsection shall not apply to any bicycle or pedestrian projects."

SECTION 3.5. DOT Municipal Lane Mile Study. – The Department of Transportation shall collect lane mile data from each municipality eligible to receive funds under this section no later than December 1, 2013. The Department shall report to the Joint Legislative Transportation Oversight Committee no later than March 1, 2014, on at least three options to shift the distribution formula to include lane mile data. The report shall include advantages and disadvantages, fiscal impacts to each municipality, and any other technical considerations in making such a change. The Joint Legislative Transportation Oversight Committee and the Fiscal Research Division shall include in its recommendations to the 2014 Session of the 2013 General Assembly a new distribution formula, if the Committee finds that a new formula is beneficial and practical.

CONFORMING CHANGES

SECTION 4.1. G.S. 105-187.9 reads as rewritten:

"§ 105-187.9. **Disposition of tax proceeds.**

...
(b) ~~(Repealed effective July 1, 2013) General Fund Transfer.~~ – In each fiscal year, the State Treasurer shall transfer the amounts provided below from the taxes deposited in the Trust Fund to the General Fund. The transfer of funds authorized by this section may be made by transferring one fourth of the amount at the end of each quarter in the fiscal year or by

transferring the full amount annually on July 1 of each fiscal year, subject to the availability of revenue.

- (1) ~~The sum of twenty six million dollars (\$26,000,000).~~
- (2) ~~In addition to the amount transferred under subdivision (1) of this subsection, the sum of one million seven hundred thousand dollars (\$1,700,000) shall be transferred in the 2001-2002 fiscal year. The amount distributed under this subdivision shall increase in the 2002-2003 fiscal year to the sum of two million four hundred thousand dollars (\$2,400,000). In each fiscal year thereafter, the sum transferred under this subdivision shall be the amount distributed in the previous fiscal year plus or minus a percentage of this sum equal to the percentage by which tax collections under this Article increased or decreased for the most recent 12-month period for which data are available.~~

(e) ~~(Effective July 1, 2013) Mobility Fund Transfer. — In each fiscal year, the State Treasurer shall transfer fifty eight million dollars (\$58,000,000) from the taxes deposited in the Trust Fund to the Mobility Fund. The transfer of funds authorized by this section may be made by transferring one fourth of the amount at the end of each quarter in the fiscal year or by transferring the full amount annually on July 1 of each fiscal year, subject to the availability of revenue.~~"

SECTION 4.2. G.S. 136-18 reads as rewritten:

"§ 136-18. Powers of Department of Transportation.

The said Department of Transportation is vested with the following powers:

- ...
- (12a) The Department of Transportation shall have such powers as are necessary to establish, administer, and receive federal funds for a transportation infrastructure banking program as authorized by the Intermodal Surface Transportation Efficiency Act of 1991, Pub. L. 102-240, as amended, and the National Highway System Designation Act of 1995, Pub. L. 104-59, as amended. The Department of Transportation is authorized to apply for, receive, administer, and comply with all conditions and requirements related to federal financial assistance necessary to fund the infrastructure banking program. The infrastructure banking program established by the Department of Transportation may utilize federal and available State funds for the purpose of providing loans or other financial assistance to governmental units, including toll authorities, to finance the costs of transportation projects authorized by the above federal aid acts. Such loans or other financial assistance shall be subject to repayment and conditioned upon the establishment of such security and the payment of such fees and interest rates as the Department of Transportation may deem necessary. The Department of Transportation is authorized to apply a municipality's share of funds allocated under G.S. 136-41.1 or G.S. 136-44.20 as necessary to ensure repayment of funds advanced under the infrastructure banking program. The Department of Transportation shall establish jointly, with the State Treasurer, a separate infrastructure banking account with necessary fiscal controls and accounting procedures. Funds credited to this account shall not revert, and interest and other investment income shall accrue to the account and may be used to provide loans and other financial assistance as provided under this subdivision. The Department of Transportation may establish such rules and policies as are necessary to establish and administer the infrastructure banking program. The infrastructure banking program authorized under this subdivision shall not modify the regional distribution formula for the distribution of funds established by ~~G.S. 136-17.2A, G.S. 136-189.11.~~ Governmental units may apply for loans and execute debt instruments payable to the State in order to obtain loans or other financial assistance provided for in this subdivision. The Department of Transportation shall require that applicants shall pledge as security for such obligations revenues derived from operation of the benefited facilities or systems, other sources of revenue, or their faith and credit, or any combination thereof. The faith and credit of such governmental units shall

not be pledged or be deemed to have been pledged unless the requirements of Article 4, Chapter 159 of the General Statutes have been met. The State Treasurer, with the assistance of the Local Government Commission, shall develop and adopt appropriate debt instruments for use under this subdivision. The Local Government Commission shall develop and adopt appropriate procedures for the delivery of debt instruments to the State without any public bidding therefor. The Local Government Commission shall review and approve proposed loans to applicants pursuant to this subdivision under the provisions of Articles 4 and 5, Chapter 159 of the General Statutes, as if the issuance of bonds was proposed, so far as those provisions are applicable. Loans authorized by this subdivision shall be outstanding debt for the purpose of Article 10, Chapter 159 of the General Statutes.

...."

SECTION 4.3. G.S. 136-17.2A is repealed.

SECTION 4.4. G.S. 136-44.50(a) reads as rewritten:

"(a) A transportation corridor official map may be adopted or amended by any of the following:

- (1) The governing board of any local government for any thoroughfare included as part of a comprehensive plan for streets and highways adopted pursuant to G.S. 136-66.2 or for any proposed public transportation corridor included in the adopted long-range transportation plan.
- (2) The Board of Transportation, or the governing board of any county, for any portion of the existing or proposed State highway system or for any public transportation corridor, to include rail, that is in the Transportation Improvement Program.
- (3) Regional public transportation authorities created pursuant to Article 26 of Chapter 160A of the General Statutes or regional transportation authorities created pursuant to Article 27 of Chapter 160A of the General Statutes for any portion of the existing or proposed State highway system, or for any proposed public transportation corridor, or adjacent station or parking lot, included in the adopted long-range transportation plan.
- (4) The North Carolina Turnpike Authority for any project being studied pursuant to G.S. 136-89.183.
- (5) The Wilmington Urban Area Metropolitan Planning Organization for ~~any project that is within its urbanized boundary and identified in G.S. 136-179.~~ Department projects R-3300 and U-4751.

Before a city adopts a transportation corridor official map that extends beyond the extraterritorial jurisdiction of its building permit issuance and subdivision control ordinances, or adopts an amendment to a transportation corridor official map outside the extraterritorial jurisdiction of its building permit issuance and subdivision control ordinances, the city shall obtain approval from the Board of County Commissioners."

SECTION 4.5. G.S. 136-66.3 reads as rewritten:

"§ 136-66.3. Local government participation in improvements to the State transportation system.

...
(c1) ~~No TIP Disadvantage for Participation.~~—If a county or municipality participates in a State transportation system improvement project, as authorized by this section, or by G.S. 136-51 and G.S. 136-98, the Department shall ensure that the local government's participation does not cause any disadvantage to any other project in the Transportation Improvement Program under G.S. 143B-350(f)(4).

(c2) ~~Distribution of State Funds Made Available by County or Municipal Participation.~~— Any State or federal funds allocated to a project that are made available by county or municipal participation in a project contained in the Transportation Improvement Program under G.S. 143B-350(f)(4) shall ~~remain in the same funding region that the funding was allocated to under the distribution formula contained in G.S. 136-17.2A.~~ be subject to G.S. 136-189.11.

(c3) ~~Limitation on Agreements.~~—The Department shall not enter into any agreement with a county or municipality to provide additional total funding for highway construction in

~~the county or municipality in exchange for county or municipal participation in any project contained in the Transportation Improvement Program under G.S. 143B-350(f)(4).~~

...
(e1) Reimbursement Procedure. – Upon request of the county or municipality, the Department of Transportation shall allow the local government a period of not less than three years from the date construction of ~~the projects~~ a project undertaken under subsection (e) of this section is initiated to reimburse the Department their agreed upon share of the costs necessary for the project. The Department of Transportation shall not charge a local government any interest during the initial three years.

...."

SECTION 4.6. G.S. 136-89.192 reads as rewritten:

"§ 136-89.192. Equity distribution-Applicability of formula.

Only those funds applied to a Turnpike Project from the State Highway Fund, State Highway Trust Fund, or federal-aid funds that might otherwise be used for other roadway projects within the State, and are otherwise already subject to the ~~distribution~~ formula under ~~G.S. 136-17.2A, G.S. 136-189.11~~ shall be included in the ~~distribution~~ formula.

Other revenue from the sale of the Authority's bonds or notes, project loans, or toll collections shall not be included in the ~~distribution~~ formula."

SECTION 4.7. G.S. 136-175 reads as rewritten:

"§ 136-175. Definitions.

The following definitions apply in this Article:

- (1) ~~Intrastate System. The network of major, multilane arterial highways composed of those routes, segments, or corridors listed in G.S. 136-178, and any other route added by the Department of Transportation under G.S. 136-178.~~
- (2) Transportation Improvement Program. The schedule of major transportation improvement projects required by G.S. 143B-350(f)(4).
- (3) Trust Fund. The North Carolina Highway Trust Fund."

SECTION 4.8. G.S. 136-176 reads as rewritten:

"§ 136-176. Creation, revenue sources, and purpose of North Carolina Highway Trust Fund.

(a) A special account, designated the North Carolina Highway Trust Fund, is created within the State treasury. The Trust Fund consists of the following revenue:

- (1) Motor fuel, alternative fuel, and road tax revenue deposited in the Fund under G.S. 105-449.125, 105-449.134, and 105-449.43, respectively.
- (2) Motor vehicle use tax deposited in the Fund under G.S. 105-187.9.
- (3) Revenue from the certificate of title fee and other fees payable under G.S. 20-85.
- (4) Repealed by Session Laws 2001-424, s. 27.1.
- (5) Interest and income earned by the Fund.

(a1) ~~The Department shall use two hundred twenty million dollars (\$220,000,000) in fiscal year 2001-2002, two hundred twelve million dollars (\$212,000,000) in fiscal year 2002-2003, and two hundred fifty five million dollars (\$255,000,000) in fiscal year 2003-2004 of the cash balance of the Highway Trust Fund for the following purposes:~~

- (1) ~~For primary route pavement preservation. — One hundred seventy million dollars (\$170,000,000) in fiscal year 2001-2002, and one hundred fifty million dollars (\$150,000,000) in each of the fiscal years 2002-2003 and 2003-2004. Up to ten percent (10%) of the amount for each of the fiscal years 2001-2002, 2002-2003, and 2003-2004 is available in that fiscal year, at the discretion of the Secretary of Transportation, for:~~
 - a. ~~Highway improvement projects that further economic growth and development in small urban and rural areas, that are in the Transportation Improvement Program, and that are individually approved by the Board of Transportation; or~~
 - b. ~~Highway improvements that further economic development in the State and that are individually approved by the Board of Transportation.~~
- (2) ~~For preliminary engineering costs not included in the current year Transportation Improvement Program. — Fifteen million dollars~~

~~(\$15,000,000) in each of the fiscal years 2001-2002, 2002-2003, and 2003-2004. If any funds allocated by this subdivision, in the cash balance of the Highway Trust Fund, remain unspent on June 30, 2008, the Department may transfer within the Department up to twenty nine million dollars (\$29,000,000) of available funds to contract for freight transportation system improvements for the Global TransPark.~~

- ~~(3) For computerized traffic signal systems and signal optimization projects.— Fifteen million dollars (\$15,000,000) in each of the fiscal years 2001-2002, 2002-2003, and 2003-2004.~~
- ~~(4) For public transportation twenty million dollars (\$20,000,000) in fiscal year 2001-2002, twenty five million dollars (\$25,000,000) in fiscal year 2002-2003, and seventy five million dollars (\$75,000,000) in fiscal year 2003-2004.~~
- ~~(5) For small urban construction projects.— Seven million dollars (\$7,000,000) in fiscal year 2002-2003.~~

~~Funds authorized for use by the Department pursuant to this subsection shall remain available to the Department until expended.~~

~~(a2) Repealed by Session Laws 2002-126, s. 26.4(b), effective July 1, 2002.~~

~~(a3) The Department may obligate three hundred million dollars (\$300,000,000) in fiscal year 2003-2004 and four hundred million dollars (\$400,000,000) in fiscal year 2004-2005 of the cash balance of the Highway Trust Fund for the following purposes:~~

- ~~(1) Six hundred thirty million dollars (\$630,000,000) for highway system preservation, modernization, and maintenance, including projects to enhance safety, reduce congestion, improve traffic flow, reduce accidents, upgrade pavement widths and shoulders, extend pavement life, improve pavement smoothness, and rehabilitate or replace deficient bridges; and for economic development transportation projects recommended by local officials and approved by the Board of Transportation.~~
- ~~(2) Seventy million dollars (\$70,000,000) for regional public transit systems, rural and urban public transportation system facilities, regional transportation and air quality initiatives, rail system track improvements and equipment, and other ferry, bicycle, and pedestrian improvements. For any project or program listed in this subdivision for which the Department receives federal funds, use of funds pursuant to this subdivision shall be limited to matching those funds.~~

~~Funds authorized for obligation and use by the Department pursuant to this subsection shall remain available to the Department until expended.~~

~~(a4) Project selection pursuant to subsection (a3) of this section shall be based on identified and documented need. Funds expended pursuant to subdivision (1) of subsection (a3) of this section shall be distributed in accordance with the distribution formula in G.S. 136-17.2A. No funds shall be expended pursuant to subsection (a3)(1) of this section on any project that does not meet Department of Transportation standards for road design, materials, construction, and traffic flow.~~

~~(a5) The Department shall report to the Joint Legislative Transportation Oversight Committee, on or before September 1, 2003, on its intended use of funds pursuant to subsection (a3) of this section. The Department shall report to the Joint Transportation Appropriations Subcommittee, on or before May 1, 2004, on its actual current and intended future use of funds pursuant to subsection (a3) of this section. The Department shall certify to the Joint Legislative Transportation Oversight Committee each year, on or before November 1, that use of the Highway Trust Fund cash balances for the purposes listed in subsection (a3) of this section will not adversely affect the delivery schedule of any Highway Trust Fund projects. If the Department cannot certify that the full amounts authorized in subsection (a3) of this section are available, then the Department may determine the amount that can be used without adversely affecting the delivery schedule and may proportionately apply that amount to the purposes set forth in subsection (a3) of this section.~~

~~(b) Funds in the Trust Fund are annually appropriated to the Department of Transportation to be allocated and used as provided in this subsection. A sum, not to exceed four and eight tenths percent (4.8%) of the amount of revenue deposited in the Trust Fund under subdivisions (a)(1), (2), and (3) of this section sum, in the amount appropriated by law,~~

may be used each fiscal year by the Department for expenses to administer the Trust Fund. Operation and project development costs of the North Carolina Turnpike Authority are eligible administrative expenses under this subsection. Any funds allocated to the Authority pursuant to this subsection shall be repaid by the Authority from its toll revenue as soon as possible, subject to any restrictions included in the agreements entered into by the Authority in connection with the issuance of the Authority's revenue bonds. Beginning one year after the Authority begins collecting tolls on a completed Turnpike Project, interest shall accrue on any unpaid balance owed to the Highway Trust Fund at a rate equal to the State Treasurer's average annual yield on its investment of Highway Trust Fund funds pursuant to G.S. 147-6.1. Interest earned on the unpaid balance shall be deposited in the Highway Trust Fund upon repayment. The sum up to the amount anticipated to be necessary to meet the State matching funds requirements to receive federal-aid highway trust funds for the next fiscal year may be set aside for that purpose. The rest of the funds in the Trust Fund shall be allocated and used as follows:specified in G.S. 136-189.11.

- ~~(1) Sixty one and ninety five hundredths percent (61.95%) to plan, design, and construct projects on segments or corridors of the Intrastate System as described in G.S. 136-178 and to pay debt service on highway bonds and notes that are issued under the State Highway Bond Act of 1996 and whose proceeds are applied to these projects.~~
- ~~(2) Twenty five and five hundredths percent (25.05%) to plan, design, and construct the urban loops described in G.S. 136-180 and to pay debt service on highway bonds and notes that are issued under the State Highway Bond Act of 1996 and whose proceeds are applied to these urban loops.~~
- ~~(3) Six and one half percent (6.5%) to supplement the appropriation to cities for city streets under G.S. 136-181.~~
- ~~(4) Six and one half percent (6.5%) for secondary road construction as provided in G.S. 136-182 and to pay debt service on highway bonds and notes that are issued under the State Highway Bond Act of 1996 and whose proceeds are applied to secondary road construction.~~

The Department must administer funds allocated under subdivisions (1), (2), and (4) of this ~~subsection~~this section in a manner that ensures that sufficient funds are available to make the debt service payments on bonds issued under the State Highway Bond Act of 1996 as they become due.

~~(b1) The Secretary may authorize the transfer of funds allocated under subdivisions (1) through (4) of subsection (b) of this section to other projects that are ready to be let and were to be funded from allocations to those subdivisions. The Secretary shall ensure that any funds transferred pursuant to this subsection are repaid promptly and in any event in no more than four years. The Secretary shall certify, prior to making any transfer pursuant to this subsection, that the transfer will not affect the delivery schedule of Highway Trust Fund projects in the current Transportation Improvement Program. No transfers shall be allowed that do not conform to the applicable provisions of the equity formula for distribution of funds, G.S. 136-17.2A. If the Secretary authorizes a transfer pursuant to this subsection, the Secretary shall report that decision to the next regularly scheduled meetings of the Joint Legislative Commission on Governmental Operations, the Joint Legislative Transportation Oversight Committee, and to the Fiscal Research Division.~~

~~(b2) (Effective July 1, 2013) There is annually appropriated to the North Carolina Turnpike Authority from the Highway Trust Fund the sum of one hundred twelve million dollars (\$112,000,000).forty-nine million dollars (\$49,000,000). Of the amount allocated by this subsection, twenty-five million dollars (\$25,000,000) shall be used to pay debt service or related financing costs and expenses on revenue bonds or notes issued for the construction of the Triangle Expressway, and twenty-four million dollars (\$24,000,000) shall be used to pay debt service or related financing expenses on revenue bonds or notes issued for the construction of the Monroe Connector/Bypass, twenty eight million dollars (\$28,000,000) shall be used to pay debt service or related financing expenses on revenue bonds or notes issued for the construction of the Mid Currituck Bridge, and thirty five million dollars (\$35,000,000) shall be used to pay debt service or related financing expenses on revenue bonds or notes issued for the construction of the Garden Parkway. Monroe Connector/Bypass. The amounts appropriated to the Authority pursuant to this subsection shall be used by the Authority to pay debt service or related financing costs and expenses on revenue bonds or notes issued by the Authority to~~

finance the costs of one or more Turnpike Projects, to refund such bonds or notes, or to fund debt service reserves, operating reserves, and similar reserves in connection therewith. The appropriations established by this subsection constitute an agreement by the State to pay the funds appropriated hereby to the Authority within the meaning of G.S. 159-81(4). Notwithstanding the foregoing, it is the intention of the General Assembly that the enactment of this provision and the issuance of bonds or notes by the Authority in reliance thereon shall not in any manner constitute a pledge of the faith and credit and taxing power of the State, and nothing contained herein shall prohibit the General Assembly from amending the appropriations made in this subsection at any time to decrease or eliminate the amount annually appropriated to the Authority. Funds transferred from the Highway Trust Fund to the Authority pursuant to this subsection are not subject to the ~~equity~~—formula in ~~G.S. 136-17.2A~~. G.S. 136-189.11.

~~(c) If funds are received under 23 U.S.C. Chapter 1, Federal Aid Highways, for a project for which funds in the Trust Fund may be used, the amount of federal funds received plus the amount of any funds from the Highway Fund that were used to match the federal funds may be transferred by the Secretary of Transportation from the Trust Fund to the Highway Fund and used for projects in the Transportation Improvement Program.~~

(d) A contract may be let for projects funded from the Trust Fund in anticipation of revenues pursuant to the cash-flow provisions of G.S. 143C-6-11 only for the two bienniums following the year in which the contract is let.

(e) **(Effective July 1, 2013)** ~~Subject to G.S. 136-17.2A and other funding distribution formulas, funds allocated under subdivisions (1), (3), and (4) of subsection (b) of this section may also G.S. 136-189.11, funds may~~ be used for fixed guideway projects, including providing matching funds for federal grants for fixed guideway projects."

SECTION 4.9. The following statutes are repealed:

- (1) G.S. 136-177.
- (2) G.S. 136-177.1.
- (3) G.S. 136-178.
- (4) G.S. 136-179.
- (5) G.S. 136-180.
- (6) G.S. 136-184.
- (7) G.S. 136-185.
- (8) G.S. 136-187.
- (9) G.S. 136-188.
- (10) G.S. 136-189.

TURNPIKE AUTHORITY CHANGES

SECTION 5.1. G.S. 136-89.183(a)(2) reads as rewritten:

"§ 136-89.183. Powers of the Authority.

(a) The Authority shall have all of the powers necessary to execute the provisions of this Article, including the following:

- ...
- (2) To study, plan, develop, and undertake preliminary design work on up to ~~eight~~ nine Turnpike Projects. At the conclusion of these activities, the Turnpike Authority is authorized to design, establish, purchase, construct, operate, and maintain the following projects:
 - a. ~~Triangle Expressway, including segments also known as N.C. 540, Triangle Parkway, and the Western Wake Freeway in Wake and Durham Counties, and Southeast Extension in Wake and Johnston Counties, except that no portion of the Southeast Extension shall be located north of an existing protected corridor established by the Department of Transportation circa 1995, except in the area of Interstate 40 East.~~ Counties. The described segments constitute three projects.
 - b. ~~Gaston East West Connector, also known as the Garden Parkway.~~
 - c. ~~Monroe Connector/Bypass.~~
 - d. ~~Cape Fear Skyway.~~

- e. ~~A bridge of more than two miles in length going from the mainland to a peninsula bordering the State of Virginia, pursuant to G.S. 136-89.183A.~~

~~Any other project proposed by the Authority in addition to the projects listed in this subdivision must be approved by the General Assembly prior to construction. This subdivision requires prior consultation with the Joint Legislative Commission on Governmental Operations pursuant to G.S. 120-76.1 no less than 180 days prior to initiating the process required by Article 7 of Chapter 159 of the General Statutes.~~

~~A- With the exception of the four projects set forth in sub-subdivisions a. and c. of this subdivision, the Turnpike Project projects selected for construction by the Turnpike Authority, prior to the letting of a contract for the project, shall meet the following conditions: (i) two of the projects must be ranked in the top 35 based on total score on the Department-produced list entitled "Mobility Fund Project Scores" dated June 6, 2012, and, in addition, may be subject to G.S. 136-18(39a); (ii) of the projects not ranked as provided in (i), one may be subject to G.S. 136-18(39a); (iii) the projects shall be included in any applicable locally adopted comprehensive transportation plans and plans; (iv) the projects shall be shown in the current State Transportation Improvement Plan prior to the letting of a contract for the Turnpike Project Program; and (v) toll projects must be approved by all affected Metropolitan Planning Organizations and Rural Transportation Planning Organizations for tolling."~~

SECTION 5.2. G.S. 136-18 reads as rewritten:

"§ 136-18. Powers of Department of Transportation.

The said Department of Transportation is vested with the following powers:

- ...
(39a) a. ~~The Department of Transportation or Turnpike Authority, as applicable, may enter into a partnership agreement up to three agreements with a private entity as provided under subdivision (39) of this section for which the provisions of this section apply. The pilot project allowed under this subdivision must be one that is a candidate for funding under the Mobility Fund, that is planned for construction through a public private partnership, and for which a Request for Qualifications has been issued by the Department no later than June 30, 2012.~~
- b. A private entity or its contractors must provide performance and payment security in the form and in the amount determined by the Department of Transportation. The form of the performance and payment security may consist of bonds, letters of credit, parent guaranties, or other instruments acceptable to the Department of Transportation.
- c. Notwithstanding the provisions of G.S. 143B-426.40A, an agreement entered into under this subdivision may allow the private entity to assign, transfer, sell, hypothecate, and otherwise convey some or all of its right, title, and interest in and to such agreement, and any rights and remedies thereunder, to a lender, bondholder, or any other party. However, in no event shall any such assignment create additional debt or debt-like obligations of the State of North Carolina, the Department, or any other agency, authority, commission, or similar subdivision of the State to any lender, bondholder, entity purchasing a participation in the right to receive the payment, trustee, trust, or any other party providing financing or funding of projects described in this section. The foregoing shall not preclude the Department from making any payments due and owing pursuant to an agreement entered into under this section.
- d. ~~The Department of Transportation may fix, revise, charge, and collect tolls and fees to the same extent allowed under Article 6H of Chapter 136 of the General Statutes. Statutes shall apply to the~~

Department of Transportation and to projects undertaken by the Department of Transportation under subdivision (39) of this section. The Department may assign its authority under that Article to fix, revise, charge, retain, enforce, and collect tolls and fees to the private entity.

e. Any contract under this subdivision or under Article 6H of this Chapter for the development, construction, maintenance, or operation of a project shall provide for revenue sharing, if applicable, between the private party and the Department, and revenues derived from such project may be used as set forth in G.S. 136-89.188(a), notwithstanding the provisions of G.S. 136-89.188(d). Excess toll revenues from a Turnpike project shall be used for the funding or financing of transportation projects within the corridor where the Turnpike Project is located. For purposes of this subdivision, the term "excess toll revenues" means those toll revenues derived from a Turnpike Project that are not otherwise used or allocated to the Authority or a private entity pursuant to this subdivision, notwithstanding the provisions of G.S. 136-89.188(d). For purposes of this subdivision, the term "corridor" means (i) the right-of-way limits of the Turnpike Project and any facilities related to the Turnpike Project or any facility or improvement necessary for the use, design, construction, operation, maintenance, repair, rehabilitation, reconstruction, or financing of a Turnpike Project; (ii) the right-of-way limits of any subsequent improvements, additions, or extension to the Turnpike Project and facilities related to the Turnpike projects, including any improvements necessary for the use, design, construction, operation, maintenance, repair, rehabilitation, reconstruction, or financing of those subsequent improvements, additions, or extensions to the Turnpike Project; and (iii) roads used for ingress or egress to the toll facility or roads that intersect with the toll facility, whether by ramps or separated grade facility, and located within one mile in any direction.

f. Agreements entered into under this subdivision shall comply with the following additional provisions:

1. The Department shall solicit proposals for agreements.
2. Agreement shall be limited to no more than 50 years from the date of the beginning of operations on the toll facility.
3. Notwithstanding the provisions of G.S. 136-89.183(a)(5), all initial tolls or fees to be charged by a private entity shall be reviewed by the Turnpike Authority Board. Prior to setting toll rates, either a set rate or a minimum and maximum rate set by the private entity, the private entity shall hold a public hearing on the toll rates, including an explanation of the toll setting methodology, in accordance with guidelines for the hearing developed by the Department. After tolls go into effect, the private entity shall report to the Turnpike Authority Board 30 days prior to any increase in toll rates or change in the toll setting methodology by the private entity from the previous toll rates or toll setting methodology last reported to the Turnpike Authority Board.
4. Financial advisors and attorneys retained by the Department on contract to work on projects pursuant to this subsection shall be subject to State law governing conflicts of interest.
5. 60 days prior to the signing of a concession agreement subject to this subdivision, the Department shall report to the Joint Legislative Transportation Oversight Committee on the following for the presumptive concessionaire:
 - I. Project description.
 - II. Number of years that tolls will be in place.

- III. Name and location of firms and parent companies, if applicable, including firm responsibility and stake, and assessment of audited financial statements.
- IV. Analysis of firm selection criteria.
- V. Name of any firm or individual under contract to provide counsel or financial analysis to the Department or Authority. The Department shall disclose payments to these contractors related to completing the agreement under this subdivision.
- VI. Demonstrated ability of the project team to deliver the project, by evidence of the project team's prior experience in delivering a project on schedule and budget, and disclosure of any unfavorable outcomes on prior projects.
- VII. Detailed description of method of finance, including sources of funds, State contribution amounts, including schedule of availability payments and terms of debt payments.
- VIII. Information on assignment of risk shared or assigned to State and private partner.
- IX. Information on the feasibility of finance as obtained in traffic and revenue studies.
- 6. The Turnpike Authority annual report under G.S. 136-89.193 shall include reporting on all revenue collections associated with projects subject to this subdivision under the Turnpike Authority.
- 7. The Department shall develop standards for entering into comprehensive agreements with private entities under the authority of this subdivision and report those standards to the Joint Legislative Transportation Oversight Committee on or before October 1, 2013.

...
 (43) For the purposes of financing an agreement under subdivision (39a) of this section, the Department of Transportation may act as a conduit issuer for private activity bonds to the extent the bonds do not constitute a debt obligation of the State. The issuance of private activity bonds under this subdivision and any related actions shall be governed by The State and Local Government Revenue Bond Act, Article 5 of Chapter 159 of the General Statutes, with G.S. 159-88 satisfied by adherence to the requirements of ~~subdivisions (39) and subdivision (39a)~~ of this section."

SECTION 5.3. G.S. 136-89.183(a)(5) reads as rewritten:

"§ 136-89.183. Powers of the Authority.

(a) The Authority shall have all of the powers necessary to execute the provisions of this Article, including the following:

- ...
 (5) To fix, revise, charge, retain, enforce, and collect tolls and fees for the use of the Turnpike Projects. Prior to the effective date of any toll or fee for use of a Turnpike Facility, the Authority shall submit a description of the proposed toll or fee to the Board of Transportation, the Joint Legislative Transportation Oversight Committee and the Joint Legislative Commission on Governmental Operations for review.

....
SECTION 5.4. G.S. 136-89.188 reads as rewritten:

"§ 136-89.188. Use of revenues.

(a) Revenues derived from Turnpike Projects authorized under this Article shall be used only for the following:

- (1) Authority administration ~~costs~~; costs.

- (2) Turnpike Project development, right-of-way acquisition, design, construction, operation, and maintenance; maintenance, reconstruction, rehabilitation, and replacement.
- (3) ~~debt~~ Debt service on the Authority's revenue bonds or related purposes such as the establishment of debt service reserve ~~funds~~ funds.
- (4) Debt service, debt service reserve funds, and other financing costs related to any of the following:
 - a. A financing undertaken by a private entity under a partnership agreement with the entity for a Turnpike Project.
 - b. Private activity bonds issued under law related to a Turnpike Project.
 - c. Any federal or State loan, line of credit, or loan guarantee relating to a Turnpike Project.
- (5) A return on investment of any private entity under a partnership agreement with the entity for a Turnpike Project.
- (6) Any other uses granted to a private entity under a partnership agreement with the entity for a Turnpike Project.

(b) The Authority may use up to one hundred percent (100%) of the revenue derived from a Turnpike Project for debt service on the Authority's revenue bonds or for a combination of debt service and operation and maintenance expenses of the Turnpike Projects.

(c) The Authority shall use not more than five percent (5%) of total revenue derived from all Turnpike Projects for Authority administration costs.

(d) Notwithstanding the provisions of subsections (a) and (b) of this section, toll revenues generated from a converted segment of the State highway system previously planned for operation as a nontoll facility shall only be used for the funding or financing of the right of way acquisition, construction, expansion, operations, maintenance, and Authority administration costs associated with the converted segment or a contiguous toll facility."

SECTION 5.5. Part 1 of Article 6H of Chapter 136 of the General Statutes is amended by adding a new section to read:

"§ 136-89.199. Designation of high-occupancy toll and managed lanes.

Notwithstanding any other provision of this Article, the Authority may designate one or more lanes of any highway, or portion thereof, within the State, including lanes that may previously have been designated as HOV lanes under G.S. 20-146.2, as high-occupancy toll (HOT) or other type of managed lanes; provided, however, that such designation shall not reduce the number of existing general purpose lanes. In making such designations, the Authority shall specify the high-occupancy requirement or other conditions for use of such lanes, which may include restricting vehicle types, access controls, or the payment of tolls for vehicles that do not meet the high-occupancy requirements or conditions for use."

SECTION 5.6. Part 2 of Article 6H of Chapter 136 of the General Statutes reads as rewritten:

"Part 2. Collection of Tolls on Turnpike Projects.

...
"§ 136-89.212. Payment of toll required for use of Turnpike project.

(a) A motor vehicle that is driven on a Turnpike project is subject to a toll imposed by the Authority for the use of the project. If the toll is an open road toll, the person who is the registered owner of the motor vehicle is liable for payment of the toll unless the registered owner establishes that the motor vehicle was in the care, custody, and control of another person when it was driven on the Turnpike project.

(b) A person establishes that a motor vehicle was in the care, custody, and control of another person when it was driven on a Turnpike project by submitting to the Authority a sworn affidavit stating one of the following:

- (1) The name and address of the person who had the care, custody, and control of the motor vehicle when it was driven. If the motor vehicle was leased or rented under a long-term lease or rental, as defined in G.S. 105-187.1, the affidavit must be supported by a copy of the lease or rental agreement or other written evidence of the agreement.
- (2) The motor vehicle was stolen. The affidavit must be supported by an insurance or police report concerning the theft or other written evidence of the theft.

- (3) The person transferred the motor vehicle to another person by sale or otherwise before it was driven on the Turnpike project. The affidavit must be supported by insurance information, a copy of the certificate of title, or other evidence of the transfer.

(c) If a person establishes that a motor vehicle was in the care, custody, and control of another person under subsection (b) of this section, the other person shall be liable for the payment of the toll, and the Authority may send a bill to collect and enforce the toll in accordance with this Article; provided, however, that such other person may contest such toll in accordance with this Article.

"§ 136-89.213. Administration of tolls and requirements for open road tolls.

(a) Administration. – The Authority is responsible for collecting tolls on Turnpike projects. In exercising its authority under G.S. 136-89.183 to perform or procure services required by the Authority, the Authority may contract with one or more providers to perform part or all of the collection functions and may enter into agreements to exchange information, including confidential information under subsection (a1) of this section, that identifies motor vehicles and their owners with one or more of the following entities: the Division of Motor Vehicles of the Department of Transportation, another state, another toll operator, ~~or a toll collection-related organization-organization,~~ or a private entity that has entered into a partnership agreement with the Authority pursuant to G.S. 136-89.183(a)(17). Further, the Authority may assign its authority to fix, revise, charge, retain, enforce, and collect tolls and fees under this Article to a private entity that has entered into a partnership agreement with the Authority pursuant to G.S. 136-89.183(a)(17).

...
(b) Open Road Tolls. – If a Turnpike project uses an open road tolling system, the Authority must operate a facility that is in the immediate vicinity of the Turnpike project ~~and that accepts or provide an alternate means to accept~~ cash payment of the toll and must place signs on the Turnpike project that give drivers the following information:

- (1) Notice that the driver is approaching a highway for which a toll is required. Signs providing this information must be placed before the toll is incurred.
- (2) The methods by which the toll may be paid.
- (3) ~~Directions~~ If applicable, directions to the nearby facility that accepts cash payment of the toll.

"§ 136-89.214. Bill for unpaid open road toll.

(a) Bill. – If a motor vehicle travels on a Turnpike project that uses an open road tolling system and a toll for traveling on the project is not paid prior to travel or at the time of travel, the Authority must send a bill by first-class mail to the registered owner of the motor vehicle or the person who had care, custody, and control of the vehicle as established under G.S. 136-89.212(b) for the amount of the unpaid toll. The Authority must send the bill within 90 days after the travel ~~occurs-occurs,~~ or within 90 days of receipt of a sworn affidavit submitted under G.S. 136-89.212(b) identifying the person who had care, custody, and control of the motor vehicle. If a bill is not sent within the required time, the Authority waives collection of the toll. The Authority must establish a billing period for unpaid open road tolls that is no shorter than 15 days. A bill for a billing period must include all unpaid tolls incurred by the same person during the billing period.

(b) Information on Bill. – A bill sent under this section must include all of the following information:

- (1) The name and address of the registered owner of the motor vehicle that traveled on the Turnpike ~~project-project~~ or of the person identified under G.S. 136-89.212(b).
- (2) The date the travel occurred, the approximate time the travel occurred, and each segment of the Turnpike project on which the travel occurred.
- (3) An image of the registration plate of the motor vehicle, if the Authority captured an electronic image of the motor vehicle when it traveled on the Turnpike project.
- (4) The amount of the toll due and an explanation of how payment may be made.
- (5) The date by which the toll must be paid to avoid the imposition of a processing fee under G.S. 136-89.215 and the amount of the processing fee.

- (6) A statement that a vehicle owner who has unpaid tolls is subject to a civil penalty and may not renew the vehicle's registration until the tolls and civil penalties are paid.
- (7) A clear and concise explanation of how to contest liability for the toll.
- (8) If applicable, a copy of the affidavit submitted under G.S. 136-89.212(b) identifying the person with care, custody, and control of the motor vehicle.

"§ 136-89.215. Required action upon receiving bill for open road toll and processing fee for unpaid toll.

(a) Action Required. – A person who receives a bill from the Authority for an unpaid open road toll must take one of the following actions within 30 days of the date of the bill:

- (1) Pay the bill.
- (2) Send a written request to the Authority for a review of the toll.

(b) Fee. – If a person does not take one of the actions required under subsection (a) of this section within the required time, the Authority may add a processing fee to the amount the person owes. The processing fee may not exceed six dollars (\$6.00). A person may not be charged more than forty-eight dollars (\$48.00) in processing fees in a 12-month period.

~~The Authority must set the processing fee at an amount that does not exceed the costs of collecting the unpaid toll, identifying the owner of a motor vehicle that is subject to an unpaid toll and billing the owner for the unpaid toll. The fee is a receipt of the Authority and must be applied to these costs.~~

...."

SECTION 5.7. DOT/Southeast Extension-Triangle Expressway. – The Department of Transportation shall strive to expedite the federal environmental impact statement process to define the route for the Southeast Extension of the Triangle Expressway Turnpike Project by promptly garnering input from local officials and other stakeholders, accelerating any required State studies, promptly submitting permit applications to the federal government, working closely with the federal government during the permitting process, and taking any other appropriate actions to accelerate the environmental permitting process.

SECTION 5.8. Monitoring. – As part of its oversight of the Department of Transportation, the Joint Legislative Transportation Oversight Committee shall closely monitor the progress of the Southeast Extension of the Triangle Expressway Turnpike Project.

TRANSITION STUDY AND REPORTING REQUIREMENTS

SECTION 6.1. Formula Implementation Report. – The Department of Transportation shall report to the Joint Legislative Transportation Oversight Committee and the Fiscal Research Division no later than August 15, 2013, on the Department's recommended formulas that will be used in the prioritization process to rank highway and nonhighway projects. The Department of Transportation's Prioritization Office shall develop the prioritization processes and formulas for all modes of transportation. The report will include a statement on the process used by the Department to develop the formulas, include a listing of external partners consulted during this process, and include feedback from its 3.0 workgroup partners on the Department's proposed recommendations. The Department shall not finalize the formula without consulting with the Joint Legislative Transportation Oversight Committee. The Joint Legislative Transportation Oversight Committee has 30 days after the report is received to meet and consult on the Department's recommendations. If no meeting occurs within 30 days after the report is received, the consultation requirement will be met. If consultation occurs and a majority of members serving on the Committee request changes to the Department's recommended formulas for highway and nonhighway modes, the Department shall review the requests and provide to the Committee its response to the requested changes no later than October 1, 2013. A final report on the highway and intermodal formulas shall be submitted to the Joint Legislative Transportation Oversight Committee by January 1, 2014.

SECTION 6.2. State Transportation Improvement Program Transition Report. – The Department of Transportation shall submit transition reports to members of the Joint Legislative Transportation Oversight Committee, House of Representatives Appropriations Subcommittee on Transportation and the Senate Appropriations Committee on Department of Transportation, and the Fiscal Research Division on March 1, 2014, and November 1, 2014. The reports shall include information on the Department's transition to Strategic Prioritization, overview changes to the State Transportation Improvement Program (STIP) and other internal and external processes that feed into the STIP, and offer statutory and policy recommendations

or items for consideration to the General Assembly that will enhance the prioritization process. The March 1, 2014, report shall also include an analysis of the distribution of tax and fee revenues between the Highway Fund and Highway Trust Fund and an analysis to determine if maintenance, construction, operations, administration, and capital expenditures are properly budgeted within the two funds and existing revenues are most effectively distributed between the two funds.

EFFECTIVE DATE

SECTION 7.1.(a) Except as provided herein, this act becomes effective July 1, 2013.

SECTION 7.1.(b) This act is effective only if the General Assembly appropriates funds in the Current Operations and Capital Improvements Appropriations Act of 2013 to implement this act.

In the General Assembly read three times and ratified this the 19th day of June, 2013.

s/ Philip E. Berger
President Pro Tempore of the Senate

s/ Thom Tillis
Speaker of the House of Representatives

s/ Pat McCrory
Governor

Approved 11:20 a.m. this 26th day of June, 2013



TOWN OF

Holly Springs

Resolution No.: 13-42

Date Adopted: Oct. 1, 2013

RESOLUTION STATING THE TOWN OF HOLLY SPRINGS TOWN COUNCIL'S SUPPORT REGARDING THE ALIGNMENT OF THE SOUTH EAST EXTENSION OF I-540

WHEREAS, the Holly Springs Town Council is expressing its fervent support for the construction of the I-540 Triangle Expressway Southeast Extension; and

WHEREAS, the proposed I-540 Triangle Expressway Southeast Extension has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions of the Town of Holly Springs and other local governments of southwestern Wake County; and

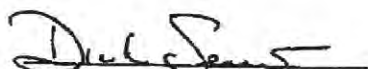
WHEREAS, the Town of Holly Springs historically has utilized the protected I-540 corridor proposed in earlier designs to plan for both existing and future development in Town; and

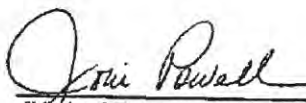
NOW THEREFORE BE IT RESOLVED that the Town Council of the Town of Holly Springs hereby expresses its support of the original protected corridor design as illustrated in orange on N.C. Transit Authority maps for the construction of the I-540 Triangle Expressway Southeast Extension; and

Adopted this, the 1st day of October, 2013.

ATTEST:




Dick Sears, Mayor


 Joni Powell, MMC, NCCMC Town Clerk
 Linda R. Harper, MMC, NCCMC Deputy Town Clerk

Office of the Mayor

128 S. Main Street • P.O. Box 8 • Holly Springs, NC 27540 • (919) 557-3901 • (919) 552-0654 fax
dick.sears@hollyspringsnc.us • www.hollyspringsnc.us



TOWN OF FUQUAY-VARINA
401 Old Honeycutt Road
Fuquay-Varina, North Carolina 27026

**A RESOLUTION BY THE TOWN OF FUQUAY-VARINA REGARDING
THE TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION (I-540)**

WHEREAS, the proposed Triangle Expressway Southeast Extension has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions for Town of Fuquay-Varina, Wake County and other local governments of Wake County; and,

WHEREAS, the alternate routes have been only recently proposed and would have a much more significant negative impact on residents of Fuquay-Varina who purchased homes and businesses based on the original proposed route; and,

WHEREAS, the Town of Fuquay-Varina historically has utilized the protected corridor proposed in earlier designs to make key planning decisions for both existing and future development in the Town of Fuquay-Varina; and,

WHEREAS, the proposed alternative alignments to relocate the corridor away from its previously designated and protected route will have an adverse impact on the Town of Fuquay-Varina; and

NOW THEREFORE, BE IT RESOLVED that the Town of Fuquay-Varina supports use of the original protected corridor design as illustrated in "orange" on the North Carolina Turnpike Authority maps as the preferred choice for the development and construction of the Triangle Expressway Southeast Extension (I-540).

Adopted this 19th day of October 2010



[Signature]
Town Clerk

[Signature]
Mayor John W. Byrne
Town of Fuquay-Varina

**A RESOLUTION BY THE COUNTY OF WAKE REGARDING THE
TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION**

WHEREAS, the proposed Triangle Expressway Southeast Extension from NC 55 in Apex to US 64 in Knightdale has been a fundamental transportation facility underpinning, for more than 20 years, local land use and transportation decisions for Wake County and other local governments of Wake County;

WHEREAS, Wake County historically has utilized the protected corridor west of Interstate 40 developed in earlier efforts (orange) to make key planning decisions for both existing and future development in Wake County; and

WHEREAS, Wake County historically has utilized the planned corridor east of Interstate 40 developed in earlier efforts (green) to make key planning decisions for both existing and future development in Wake County; and

WHEREAS, numerous Wake County homeowners and landowners have relied upon the protected corridor route (orange) and the planned corridor route (green) for many years as they have made investment decisions; and

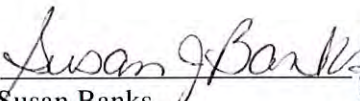
WHEREAS, the proposed alternative alignments that would relocate the roadway away from the protected route and planned route will have an adverse impact on communities in Wake County; and

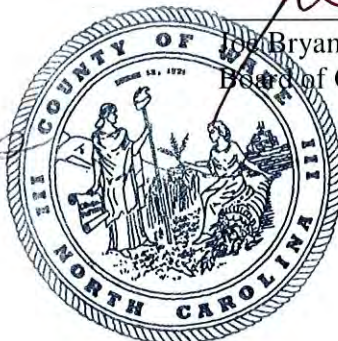
WHEREAS, the proposed alternative alignments illustrated as "blue", "purple", and "red" on North Carolina Department of Transportation maps will have a greater impact on Wake County's designated priority stream corridors and proposed Southeast Wake County Park than the previously protected route.


NOW THEREFORE, BE IT RESOLVED that Wake County supports use of the protected corridor as illustrated in "orange" on the North Carolina Department of Transportation maps and supports use of the planned corridor as illustrated in "green" on the North Carolina Department of Transportation maps as the preferred choice for the development and construction of the Triangle Expressway Southeast Extension.

Adopted this 21st day of October 2013.

ATTEST:


Susan Banks
Clerk to the Board




Joe Bryan, Chairman
Board of Commissioners

RESOLUTION (2013) 2171

RESOLUTION STATING THE TOWN OF GARNER'S TOWN COUNCIL'S SUPPORT
REGARDING ALIGNMENT OF THE SOUTHEAST EXTENSION OF I-540

WHEREAS, the Garner Town Council is expressing its avid support for the construction of the I-540 Triangle Expressway Southeast Extension; and

WHEREAS, the proposed I-540 Triangle Expressway Southeast Extension has been a fundamental transportation facility foundation for more than 20 years of local land use and transportation decisions of the Town of Garner and other local governments of southeastern Wake County; and

WHEREAS, the Town of Garner has historically utilized the protected I-540 corridor proposed in earlier designs to plan for both existing and future development in the Town; and

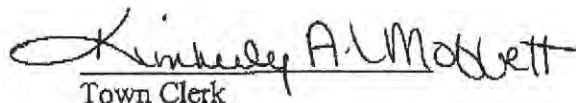
NOW THEREFORE BE IT RESOLVED that the Town Council of the Town of Garner hereby expresses its support of the original protected corridor design as illustrated in orange on the N.C. Transit Authority maps for the construction of the I-540 Triangle Expressway Southeast Extension.

Adopted this, the 22nd day of October, 2013.



Ronnie S. Williams, Mayor

ATTEST:



Kimberly A. Maggett
Town Clerk

**RESOLUTION expressing THE NC CAPITAL AREA MPO'S POSITION REGARDING THE
ALIGNMENT OF THE FUTURE NC 540 TURNPIKE**

On motion made by Mayor Sears and seconded by Mayor Eagles, and having been put to a vote, was duly adopted by unanimous vote, the following resolution;

WHEREAS, the proposed southern and southeastern segments of the NC 540 Turnpike are an adopted element of the Capital Area Metropolitan Planning Organization's (CAMPO) 2040 Metropolitan Transportation Plan; and

WHEREAS, official corridor maps show a specific alignment, adopted by the North Carolina Board of Transportation, to block new development in the preferred path of the southern segment from N.C. 55 in Holly Springs to US 401 south of Garner on August 2, 1996 and the southern segment from US 401 south of Garner to Interstate 40 south of Garner on March 7, 1997; and

WHEREAS, the proposed freeway alignment has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions for the towns of Fuquay-Varina, Garner, and Holly Springs; and

WHEREAS, Wake County is the first and only County in North Carolina to have its urban loop constructed as a toll road; and

WHEREAS, the southeastern segment is likely to be much more expensive on a per mile basis than the southern segment and as such will need the revenue coming from the southern segment to help pay for it; and

WHEREAS, the southeastern segment is the Capital Area MPO's urgently needed top regional priority and therefore should not be delayed until the northern segment of the loop is converted to a turnpike to help pay for it's construction

WHEREAS, the North Carolina Turnpike Authority is looking at other alternatives that would possibly have an adverse impact upon these towns, causing disruptions to existing homes and businesses; and

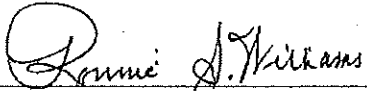
WHEREAS, other alternatives may be shorter and possibly cut construction costs; at the possible expense of environmentally sensitive areas, residential and commercial activities vital to the economic well being of the towns being impacted;

NOW, THEREFORE BE IT RESOLVED, based on the currently available information, the Capital Area MPO Transportation Advisory Committee supports the use of the original protected corridor alignment illustrated on North Carolina Turnpike Authority maps adopted in 1996 and 1997 as the locally preferred choice for the development and construction of the proposed NC 540 Turnpike in southern and southeastern Wake County; and

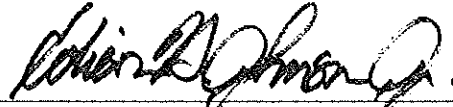
BE IT FURTHER RESOLVED, that the Capital Area MPO Transportation Advisory Committee requests that the North Carolina Turnpike Authority continue to include the Capital Area MPO as an active stakeholder in the alternatives analysis process; and

BE IT FURTHER RESOLVED, that the Capital Area MPO Transportation Advisory Committee strongly urges the North Carolina Department of Transportation to construct the entire remaining portion of the outer loop as a turnpike in one phase rather than as two separate phases.

Adopted on this the 20th day of November, 2013



Ronnie Williams, Chair
Transportation Advisory Committee

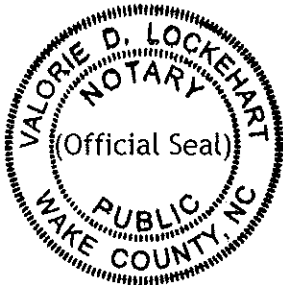


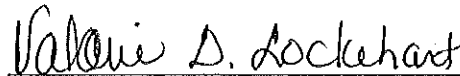
Ed Johnson, Capital Area MPO
Transportation Advisory Committee Clerk

County of Wake
State of North Carolina

I, Valorie D. Lockhart, a Notary Public for said County and State, do hereby certify that on this, the 20th day of November, 2013, personally appeared before me, Ronnie Williams, known to me by his presence, and acknowledged the due execution of the foregoing RESOLUTION STATING THE CAPITAL AREA MPO'S POSITION REGARDING THE LOCALLY PREFERRED ALTERNATIVE ALIGNMENT OF THE FUTURE NC 540 TURNPIKE.

Witness my hand and official seal, this the 20th day of November, 2013.





Valorie D. Lockhart, Notary Public

My commission expires: January 31, 2016

APPENDIX C
Local Government and Interest Group Letters



Parks, Recreation & Open Space

TEL 919 664 7967
FAX 919 856 6181

Wake County Office Building 10th Floor
337 S. Salisbury Street
PO Box 550, Suite 1000
Raleigh, NC 27602

<http://www.wakegov.com/county/parks/default.htm>

October 6, 2010

Christy Shumate
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, North Carolina 27699-1578

Dear Mrs. Shumate:

I am writing on behalf of the Wake County Open Space and Parks Advisory Committee to provide input on the proposed routes for the Triangle Expressway's Southeast Extension, specifically to support the original protected corridor (Orange route) and oppose the Purple, Blue and Red alternative routes.

On September 27, 2010 our Committee met to review the proposed routes under consideration for the Southeast Extension of the Triangle Expressway. We understand and appreciate the fact that all of these routes have an impact on the communities that they pass through. However our focus is on the environmental and programmatic impact that the alternatives would have on our long term need to protect our environment.

In 2003, the Wake County Board of Commissioners formally identified priority stream corridors to protect valuable water resources. In 2008, the Board of Commissioners revisited this issue and at that time reaffirmed the County's intent to protect 11 priority stream corridors. Two of these corridors would be negatively impacted by the Purple, Blue and Red alternatives.

- Middle Creek would be impacted twice if a route is selected using a combination of the Purple and Blue alternatives.
- Middle Creek would be impacted once if a route is selected using only the Blue alternative.
- The priority stream corridor section of Swift Creek (between Lake Wheeler and Lake Benson) would be impacted by the Red alternative.
- The currently protected corridor (Orange route) does not cross Swift Creek in an area identified by Wake County as priority stream corridor, nor does the Orange route impact Middle Creek.

Wake County Government and the citizens of Wake County have consistently demonstrated their concern for the protection of these priority stream corridors through the preservation of land through the passage of three bond referendums since 2000 totaling \$91,000,000. Each of these referendums has received more than 70% voter approval.

An additional significant concern that the Open Space and Parks Advisory Committee would like to express is the impact the Blue alternative will have on the County's Southeast Wake County Park. The County has been working to develop this park for the past decade and it is one of the three planned parks (in combination with the six existing parks) that the County is creating to meet the long term needs of the community.

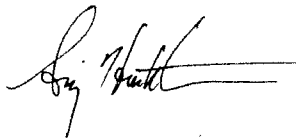
Within the Southeast County Park lie the Middle Creek Aquatic Habitat and the scenic bluffs along Middle Creek that rise 90 feet above the creek, a Natural Heritage site of local significance. The County has already acquired 258 acres for this park and has spent over \$2,000,000 in land acquisition costs. In addition the County has also placed Clean Water Management Trust Fund easements over portions of this land. The proposed Blue alternative would impact the proposed park site and possibly result in the County abandoning its plans to develop this park.

It is our sincere desire that the Triangle Expressway Southeast Extension remain in the protected corridor (Orange route.) It is what the community has planned for over the past 15 years and unlike the Purple, Blue and Red alternatives it does not impact priority stream corridors or the Southeast Wake County Park.

If you would like to have additional information or if you have any questions about our position, please feel free to contact Chris Snow, Director Wake County Parks, Recreation and Open Space at 856-6677.

Thank you.

Sincerely,



Sig Hutchison
Chairman, Wake County Open Space and Parks Advisory Committee

cc: Eugene A. Conti Jr., Chairman, North Carolina Turnpike Authority
Perry R. Safran, Vice-Chairman, North Carolina Turnpike Authority
Robert D. Teer Jr., North Carolina Turnpike Authority
Robert C. Clay, North Carolina Turnpike Authority
John Collett, North Carolina Turnpike Authority
James H. Ferebee, Jr., North Carolina Turnpike Authority
Anthony Fox, North Carolina Turnpike Authority
E. David Redwine, North Carolina Turnpike Authority
Alan F. Swanstrom, North Carolina Turnpike Authority
Tony Gurley, Chairman, Wake County Board of Commissioners
David Cooke, County Manager, Wake County



October 21, 2010



Jennifer Harris, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Re: Triangle Expressway Southeast Extension (I540)
Town of Holly Springs Comments

Dear Jennifer,

Thank you for meeting with us on October 4th about this project. We have attached a spreadsheet of Holly Springs' comments for the alternative alignments that are presently out for public comment. These comments support the position that we expressed in our meeting with you – that Holly Springs supports the orange (originally protected) corridor.

At our meeting you also indicated that we could meet with you in a separate forum – along with our transportation consultants and yours – to discuss the orange alignments' proposed intersection with both Kildaire Farm Road and Holly Springs Road (one intersection). We would like to go ahead and set that meeting up at your earliest convenience. Thank you.

Sincerely,

Stephanie L. Sudano, PE
Director of Engineering

SLS/dra

cc: Mayor Sears
Carl G. Dean, Town Manager
Chuck Simmons, Assistant Town Manager
Gina Clapp, AICP, Director of Planning & Zoning
Correspondence 13394

P.O. Box 8
128 S. Main Street
Holly Springs, N.C. 27540
www.hollyspringsnc.us

(919) 552-6221

Fax: (919) 552-5569

Mayor's Office Fax:
(919) 552-0654



TOWN OF

Holly Springs

Resolution No.: 10-27

Date Adopted: Sept. 21, 2010

RESOLUTION STATING THE TOWN OF HOLLY SPRINGS TOWN COUNCIL'S POSITION REGARDING THE ALIGNMENT OF THE SOUTHERN PHASE OF I-540

WHEREAS, on May 6, 2008, the Holly Springs Town Council adopted Resolution 08-26 expressing its fervent support for the construction of the I-540 Western Wake Expressway; and

WHEREAS, the proposed I-540 Western Wake Expressway has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions of the Town of Holly Springs and other local governments of southwestern Wake County; and

WHEREAS, the Town of Holly Springs historically has utilized the protected I-540 corridor proposed in earlier designs to plan for both existing and future development in Town; and

WHEREAS, the change to relocate the corridor south to connect to Bass Lake Road would have an adverse impact on our community, due to access issues and the cost of relocating both residential and commercial properties from said corridor; and

WHEREAS, additional traffic generated on Holly Springs Road would negatively impact the area around a proposed interchange and Holly Springs Road would not be adequate to handle the increased traffic volume; and


WHEREAS, the delay of the construction of the I-540 Western Wake Expressway is particularly injurious to the Town of Holly Springs when weighed against the much-needed NC 55 improvements that have not been constructed in anticipation of a 2008 start of I-540 Western Wake Expressway construction;


NOW THEREFORE BE IT RESOLVED that the Town Council of the Town of Holly Springs hereby expresses its adamant opposition to any option for the construction of the I-540 Southern Wake Expressway that utilizes Bass Lake Road as a potential alternative for the southern phase of I-540; and

BE IT FURTHER RESOLVED that the Town Council supports use of the original protected corridor design as illustrated in orange on N.C. Transit Authority maps as the preferred choice for the development and construction of the I-540 Southern Wake Expressway.

Adopted this, the 21st day of September, 2010.

ATTEST:


Dick Sears, Mayor


Joni Powell, CMC, Town Clerk
Linda R. Harper, CMC Deputy Town Clerk

Office of the Mayor

128 S. Main Street • P.O. Box 8 • Holly Springs, NC 27540 • (919) 557-3901 • (919) 552-0654 fax
dick.sears@hollyspringsnc.us • www.hollyspringsnc.us

1540 Comments

	Comment
BLUE CORRIDOR	
1.	Conflicts with all of the Town's long range plans developed over the past 15 years (since corridor protection began), including: Comprehensive Plan Vision 2010, Long Range Water Master Plan, Long Range Sewer Master Plan, Long Range Reclaimed Master Plan, Holly Springs Pedestrian Transportation Plan, Long Range Greenway Plan, Long Range Bicycle Plan
2.	The Town has significant existing (and proposed too) investment in this corridor in major water, sewer, and reclaimed utility lines that will have to be relocated and replaced with great expense - both initial capital expense and perpetual operating expenses (as relocation and replacement would require new pumping stations)
3.	Town's Fire Department and Wake County EMS Headquarters would have to be relocated
4.	This alignment would severely impact both vehicular (including bus) and pedestrian transportation to 3 of the town's 6 public schools (Holly Ridge Elementary, Holly Ridge Middle, Holly Springs Elementary); this doesn't even include preschools and/or daycares. There are at least two of these directly in the alignment that would have to be relocated. (Note: the maps prepared by NCTA only indicate 2 of these public schools: there are 2 schools located to the east of the proposed interchange (Holly Ridge Elementary and Holly Ridge Middle) and 1 school to the west (Holly Springs Elementary). Holly Springs Road is a vital auto and pedestrian access route for all of these schools. Locating the interchange at this location would be very dangerous to students, parents, and caregivers accessing the schools daily.
5.	There are 2 minority churches significantly impacted (to extent of relocation probably) - one at Earp and Bass Lake Road intersection and one further south off of Bass Lake Road; there is also another future church site (Moravian Church) that would be impacted/eliminated near the Fire Department and EMS headquarters.
6.	Corridor passes through one of the very few remaining minority areas in the town and would completely divide and likely eliminate the population/area; The proposed corridor would bisect this long established neighborhood. In addition, the Town of Holly Springs has provided CDBG Scattered Site Single-Family Rehab assistance to many homes located along Bass Lake Road within the proposed corridor. This is an expenditure of federal and state funds to assist residents with housing. There has also been the expenditure of federal Farmers Home funding for utilities to serve the homes.
7.	Town's only funeral home would be eliminated
8.	Wipes out a 50 acre tract of land at the headwaters of Bass Lake; this land was set aside for preservation 2009 by Triangle Land and Conservation easements located within this area (Jeff Suggs)
9.	Passes over the headwaters of Bass Lake, a historical landmark and a valued park. The dam for this lake was rebuilt within the past 10 years by the Town with a Cleanwater Management Trust Fund grant; portions are subject to a Nature Conservancy easement; the Town has put into place special 100' buffers for all land tributary to this lake; this is a very valuable environmental resource for the region.
10	Town has worked hard to created connectivity between neighborhoods - vehicular, bicycle, and pedestrian - through planning and infrastructure construction; this corridor creates a division through this area negates those efforts
11	Parallels Middle Creek which is a very important protected stream/water feature with a large watershed; paralleling streams has very negative environmental consequences and may be impossible to permit.

1540 Comments

	Comment
BLUE CORRIDOR	
12	This corridor would require relocation/elimination of many homes and the division of many neighborhoods; some are Sunset Oaks North, Sunset Oaks South, Brackenridge various phases; Sunset Ridge North, Sunset Forest, Holly Park, Remington, Westview, Brook Manor, Sunset Ridge South, Spring Meadow, Dogwood, and Old Mills Lake. All but two of these have developed over the past 18 years, so are relatively new. In addition, many of the older "non-subdivision" homes that comprised the original Holly Springs minority population will be relocated/eliminated as well.
14	There is a Montessori school on HS Road near its intersection with Bass Lake Road that is not shown, but will be impacted and possibly eliminated.
15	In addition to the above referenced impact to Bass Lake, the greenway system around Bass Lake would also be impacted. Town recently received federal funding to complete one section of the greenway loop.
16	The long range transportation plans - developed carefully and collaboratively by the Town, the county, the MPO, NCDOT, and other municipalities over the past 15 years - have guided development and road dedication of roads to support the orange corridor - not at all this corridor
17	This corridor is not under corridor protection and development approvals and building permits continue to be processed, increasing the undesirability of this corridor as well as the resulting impact of construction in this corridor
19	This corridor, while on the books, delays development of properties (this is problematic especially in this economic climate) AND the ability of individuals who happen to own homes in the corridor and need to sell their homes; we would like to encourage quick and expeditious elimination of alternatives in order to alleviate these two scenarios.
20	Corridor would introduce a second major physical barrier/division in our small Town. The 55 Bypass currently divides the western part of town from center and east portions. It is a hurdle that is difficult and expensive to cross with utilities. It has proven impossible because of expense to cross for pedestrians and bicycles, which is of extreme detriment to the Town's efforts at encouraging a healthy, multi-modal community.
21	There are 2 private daycare centers that are located within the actual corridor/interchange boundaries at Holly Springs Road that would have been relocated.
22	The Town has planned pedestrian, bicycle and auto connectivity between neighborhoods since development began in the early 90s. The proposed corridor impacts an existing greenway along Middle Creek that connects Windcrest and Bridgewater and provided connection to the northeast side of Middle Creek for future development. The corridor would impact the construction of a major roadway connection between Sunset Ridge North and Woodcreek over Middle Creek. The corridor also impacts land that has been dedicated to the Town on the north side of Middle Creek for a park and community center.
23	The maps prepared by the NCTA do not show the new Wake County Public School- Herbert Akins Elementary School located at the corner of Herbert Akins Road and James Slaughter Road. The proposed corridor impacts the school campus.
24	Maple Ridge Apartments (federally subsidized housing project) and also Timber Springs Apartments (same) would be impacted/eliminated by this corridor.
25	The corridor alignment impacts/eliminates a large portion of the Westview Neighborhood. This neighborhood was developed in partnership with the Town of Holly Springs who received a \$250,000 CDBG Infrastructure Grant to construct roads and utilities for the neighborhood. Many homeowners in Westview have received a portion of a \$150,000 down payment assistance grant from the NCHFA.

1540 Comments

	Comment
BLUE CORRIDOR	
26	Concern that the proposed blue corridor and interchange at Holly Springs Road would have a tremendous impact to the quality of life of residents by bisecting the Town and directing a tremendous volume of traffic onto Holly Springs Road at a location that has not been planned for this level of volume. This location is very near to the center Village Town District, which the Town has been working for years to develop as the heart of our town.
27	This corridor, while on the books, delays development of properties (this is problematic especially in this economic climate) AND the ability of individuals who happen to own homes in the corridor and need to sell their homes; we would like to encourage quick and expeditious elimination of alternatives in order to alleviate these two scenarios.

Comment	
ORANGE CORRIDOR	
1.	Minority church at Lockley Road does not look like it is impacted; this is a good thing.
2.	Corridor has been preserved by the Town since 1997 NCDOT request for Corridor Protection...the corridor protection guidelines have been carefully and stringently followed by the Town to make expense and impact of acquisition and construction less expensive.
3.	Some of the ROW has already been acquired, and we believe this is of great benefit.
4.	This corridor is consistent with all of the Town's long range plans developed over the past 15 years (since corridor protection began), including: Comprehensive Plan Vision 2010, Long Range Water Master Plan, Long Range Sewer Master Plan, Long Range Reclaimed Master Plan, Holly Springs Pedestrian Transportation Plan, Long Range Greenway Plan, Long Range Bicycle Plan
5.	Town wants to insure that Kildaire Farm Road, which is a major access road, ties into interchange or nearby to preserve full access northward
6.	Town has carefully planned and minimized the needed greenway/pedestrian/bike and vehicular connections through this corridor by carefully guiding development of adjacent lands. All of the infrastructure (transportation and other) that has been planned and installed to support these minimal number of crossings would no longer function as designed and infill of the preserved corridor would likely be awkward to develop. This careful planning will reduce construction costs and environmental impacts along this corridor.
7.	This corridor and the proposed interchange at Kildaire Farm Road is consistent with the Town's long range planning efforts and locations for activity nodes, development densities, roadway design, and infrastructure to meet the demands of a highway interchange and location. Because Holly Springs is a relatively small town with limited growth potential due to the limiting feature of Progress Energy Lands to the west, the impact of the other corridors on the Town as a whole is proportionally very great. The impact of the orange corridor has been well planned to complement the Town as a whole.
8.	Development of the roadway in this corridor complements the past planning and investment (and proposed too) by the Town in this area of water , sewer, and transportation infrastructures
9.	The Town believes this corridor alignment has the least environmental impact, based upon our knowledge of the Town; the crossing of Middle Creek is essentially perpendicular which is desired as this is a major stream with a very large drainage basin.
10.	This corridor would not impact or require the removal and/or displacement of many homes (maybe none) in Holly Springs
11.	Town plans have long centered around this corridor, and the Town has directed development in a manner to make the construction of this through Town minimally invasive to our community. This has been achieved by planning transportation connections to complement I540 at this location and to link property on both sides with connections.
12.	This corridor essential runs between Apex and Holly Springs - almost along the municipal boundaries - we see this as a plus as it does not divide a community like at least one of the other proposed corridors.
13.	The long range transportation plans - developed carefully and collaboratively by the Town, the county, the MPO, NCDOT, and other municipalities over the past 15 years - have guided development and row dedication of roads to support the orange corridor.
14.	This corridor is under corridor protection and development approvals and building permit requests continue to be handled under the corridor protection act, increasing the desirability of this corridor as it is protected

Comment

PURPLE CORRIDOR

1	Will impact/eliminate Town parkland south of Sunset Oaks south and planned walking trails and other passive recreation along Middle Creek - a major water feature and environmental treasure in south Wake County.
2	The long range transportation plans for the municipality and the county have guided development and row dedication of roads to support the current orange alignment - not needed intersection improvements for this route.
3	Conflicts with all of the Town's long range plans developed over the past 15 years (since corridor protection began), including: Comprehensive Plan Vision 2010, Long Range Water Master Plan, Long Range Sewer Master Plan, Long Range Reclaimed Master Plan, Holly Springs Pedestrian Transportation Plan, Long Range Greenway Plan, Long Range Bicycle Plan
4	This corridor would require relocation/elimination of many homes and the possible division of many neighborhoods; some in Holly Springs' jurisdiction only are Sunset Oaks North, Sunset Oaks South, Brackenridge various phases; In addition, there are many other homes not in subdivisions that would be impacted
5	The long range transportation plans - developed carefully and collaboratively by the Town, the county, the MPO, NCDOT, and other municipalities over the past 15 years - have guided development and row dedication of roads to support the orange corridor - not at all this corridor
6	This corridor, while on the books, delays development of properties (this is problematic especially in this economic climate) AND the ability of individuals who happen to own homes in the corridor and need to sell their homes; we would like to encourage quick and expeditious elimination of alternatives in order to alleviate these two scenarios.
7	This alignment would severely impact both vehicular (including bus) and pedestrian transportation to 3 public schools that some Holly Springs children attend in south Cary. The main transportation route to these schools is down Optimist Farm Road which is being bisected by this route.
6	Town has worked hard to created connectivity between neighborhoods - vehicular, bicycle, and pedestrian - through planning and infrastructure construction; this corridor negatively impacts one of the significant neighborhoods (only 8 years old) that has been planned and developed carefully to create the neighborhood atmosphere that is the Town's goal.
9	Parallels Middle Creek which is a very important protected stream/water feature with a large watershed; paralleling streams has very negative environmental consequences and may be impossible to permit.
10	This corridor would require relocation/elimination of many homes and the division of several neighborhoods such as Sunset Oaks North, Sunset Oaks South, Brackenridge, Talicud Trail within Holly Springs' jurisdiction only. This is a very negative consequence of this alignment especially when both corridors (and buffers on adjacent developments) have been protected for the orange alignment. This alignment is brand new and there has been no preservation or buffer protection for the neighborhoods that have been developed in the area of the corridor.
11	This corridor is not under corridor protection and development approvals and building permits continue to be processed, increasing the undesirability of this corridor as well as the resulting impact of construction in this corridor

	Comment
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PURPLE CORRIDOR	
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12	Plan as shown does not provide transportation connectivity along Optimist Farm Road which is a major transportation route in an area of SW Wake county that is limited in its primary route connectivity.
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	Comment
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OTHER GENERAL COMMENTS	
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1	All communities impacted by this project have carefully and diligently planned for the orange protected corridor, and protected the corridor. There would be tremendous negative impact to each of them in many areas such as utility infrastructure, socio-economic, community, transportation, development, quality of life, and environment. We believe that the detrimental effect of switching from this corridor is great.
2	We support the orange corridor as a more direct east/west route that complements the east/west transportation system of those individuals travelling across the state.
3	Towns likes (from west to east) want to find the most direct route; like the least circuitous\ route from Asheville to Wilmington
4	Thank you for meeting with us and opportunity to submit comments on the corridors.



October 19, 2010

Ms. Jennifer Harris, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Dear Ms. Harris:

I am writing on behalf of the Board of Directors of the Garner Chamber of Commerce to express our concerns about the proposed plan to change the location of the southern phase of I-540. We encourage you to remove the alternate route that runs north of Lake Benson.

The "red" route shown on Turnpike Authority maps with the corridor north of Lake Benson will disrupt our business community as well as our residents. The newly proposed route will displace residents of several subdivisions and totally destroy one subdivision. It will run through and displace a portion of a prime commercial property.

For more than twenty years our landowners and developers have made investment decisions based on the protected corridor route. To change that plan now will be unfair.

The Board of Directors of the Garner Chamber of Commerce request that you remove the proposed "red" route as an option for the southern phase of I-540 and continue with the original plan.

Sincerely,

A handwritten signature in black ink, appearing to read "JK Strickland", is written over a horizontal line.

Jay Strickland
Board Chair, Garner Chamber of Commerce



Town of Garner

Post Office Box 446 • Garner, North Carolina 27529

Phone 919-772-4688 • FAX 919-662-8874

October 20, 2010

Ms. Jennifer Harris, P.E.
North Carolina Turnpike Authority
1578 Mail Center
Raleigh, NC 27699-1578

Re: Triangle Expressway Southeast Extension Study
Town of Garner Comments

Ms. Harris:

This letter presents an official list of the Town of Garner concerns regarding the above referenced matter. The following points are major reasons why the Town of Garner believes NCTA should remove the red and pink corridors that go through Garner from further study. For your convenience, I have attached a map to illustrate the various impacts associated with each of the corridors discussed in this letter.

1. The red corridor is extremely detrimental to current and future parks and recreation facilities in the Town of Garner.

The red corridor impedes on the northern edge of the recently opened **White Deer Nature Park**, the Town's first LEED Gold certified facility. This is a passive park facility with an environmental education center, trails, picnic shelters, and playgrounds.

The red route obliterates and eliminates **George W. Bryan Nature Park**. Bryan Nature Park is a 20-acre nature park facility located east of Highway 50 near the South Creek neighborhood.

The red corridor will also obstruct and wipe out a portion of the **South Garner Greenway** leading from Timber Drive to **White Deer Park**. This fully designed and funded greenway (slated for construction in 2011) will connect 4.2 miles of a neighborhood loop sidewalk in central Garner with a 2.8 mile greenway trail through **White Deer and Lake Benson Parks**.

The red corridor will also impede and negatively impact the Town's 35-acre **Timber Drive Park property**, designated as a future site of an aquatics facility and/or community center.

The **Triangle Area YMCA** also owns a tract of property on Aversboro Road that has been seriously considered as the location of a future Garner YMCA facility. The red corridor will prevent this property's availability for use as a community recreation facility such as a YMCA.

2. The red corridor will disrupt long-range and orderly growth in areas designated for future development by the Town's Comprehensive Growth Plan.

The Town's major future growth area is generally referred to as the White Oak area. It lies south of US 70, west of I-40, east of Highway 50, and north of Clifford Road. Significant infrastructure investment and planning decisions have been made to promote future growth and development in this area. Capital investments of over 3 million dollars have been made in roads, major water lines, and sewer trunk lines in this portion of the community to support future development. Tremendous uncertainty exists if the red corridor effectively bisects this future growth district.

The Town's Comprehensive Growth Plan and the recently adopted 2010 Garner Transportation Plan both recommend a new interchange at I-40 and White Oak Road to serve an emerging Regional White Oak Mixed Use Center. The red corridor would likely prevent this future interchange from ever occurring while creating some challenges for future growth in this important section of Town that will require additional study if the red corridor is selected.

3. The red corridor severely damages Town's primary industrial recruitment area.

The red corridor obliterates **Greenfield South Business Park**, one of Garner's premiere locations for jobs and industry. As a result, the red corridor will create a loss of significant tax base and the community will witness the demise of an area that has been programmed for non-residential growth that is vital to the Town.

There are 26 commercial/industrial lots (developed & vacant) impacted by the red corridor with a total Wake County tax value of over 30 million dollars.

4. The red corridor splits and disconnects the Town of Garner again.

US Highway 70 split the Town of Garner and literally divided the town into two sections in the 1950's. The community has been striving to recover from this poor planning decision since that time. Garner cannot afford to be divided again by a road as large as the Triangle Expressway. If the orange protected corridor is selected as the preferred route, the Town can naturally grow towards the new expressway in a managed fashion over the next 25-35 years. Deference should be given to wise long-range planning as exemplified in the protected orange corridor route.

5. The red corridor will have negative water quality impacts to Lake Benson.

The red corridor crosses into portions of the critical areas of **Lake Benson** and **Swift Creek**. The corridor is located immediately upstream of Lake Benson and crosses the majority of the tributaries feeding the lake. This location and proximity would increase the likelihood of potential drinking water contamination. Any spill from a roadway disaster would drain directly into Lake Benson. With the recent completion of the \$90 million **Dempsey Benton Water Treatment Plant**, this lake serves as a substantial potable water supply for the Metro Raleigh area.

Correspondingly, the road construction impact on **Lake Benson** is an area of concern with the red corridor. The aforementioned proximity and drainage flow direction could lead to lake contamination and/or potential reduction in the safe yield of the lake due to potential sedimentation as a result of the construction process.

In addition to the lake itself the red corridor will negatively impact the existing water transmission and distribution infrastructure associated with the new water treatment plant. This is also a concern for the existing wastewater collection infrastructure located in the red corridor.

6. The red corridor fails to provide adequate access to the Clayton Bypass facility.

The red corridor fails to provide efficient and effective transportation by not directly servicing traffic generation from the Clayton, Smithfield, Selma and the eastern Johnston County region.

Pushing traffic via a more northern route as depicted by the red corridor does not accomplish needed goals of accommodating travelers from areas south of Garner that need to travel westward towards Holly Springs, Morrisville and Research Triangle Park.

The red corridor also puts an interchange that would be just over one mile from the existing I-40/US 70 interchange. This would appear to create difficulty for proper traffic circulation and flow for the traveling public.

7. The red corridor will have significant and direct impacts on thirteen (13) Garner neighborhoods.

The following neighborhoods are directly impacted by the red corridor: Lakewood; Heather Hills; Breezeway; Vandora Pines; Camelot; Breezeway West; Breezeway East; Summer's Walk; Van Story Hills; Heather Ridge; Heather Woods, Forest Landing; and the Village at Aversboro.

We estimate approximately 510 residential lots in Garner could be impacted by the red corridor representing a tax value of over \$106,500,000. This represents a significant cost to the Garner community in terms displacement and relocation of numerous families but also a significant impact to our tax base.

8. The following points summarize the Town's concerns regarding the pink corridor, especially the portions nearest the Garner Town Limits:

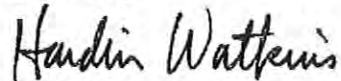
- It would remove significant portions of the Town's industrial tax base;
- It traverses directly through a City of Raleigh Wastewater Biosolids facility located just south of the Garner Town Limits;
- It eliminates a future high school site (H-8) that was purchased by Wake County Public Schools after much community outcry and discussion about other unacceptable locations. This location has been agreed upon by residents and community leaders;
- It changes land use for a large segment of our Town's future growth area and;
- It fails to connect directly with the Clayton Bypass.

The Town of Garner is fundamentally opposed to both the red and pink corridors illustrated on N.C. Turnpike Authority's maps. Therefore, we request that both corridors be removed from further study at this time. The Town of Garner strongly supports the original protected corridor as illustrated by the Orange Corridor on the N.C. Turnpike

Authority's maps as the preferred choice for the development and construction of the I-540 Triangle Expressway Southeast Extension. The community expected growth along this protected corridor and has planned for it appropriately.

Many land use decisions have been made based upon citizens and community leaders assumptions about the protected corridor and its future use. We respectfully request the NC Turnpike Authority's formal and serious consideration of our concerns regarding this matter.

Sincerely,

A handwritten signature in black ink that reads "Hardin Watkins". The signature is written in a cursive style with a large initial 'H'.

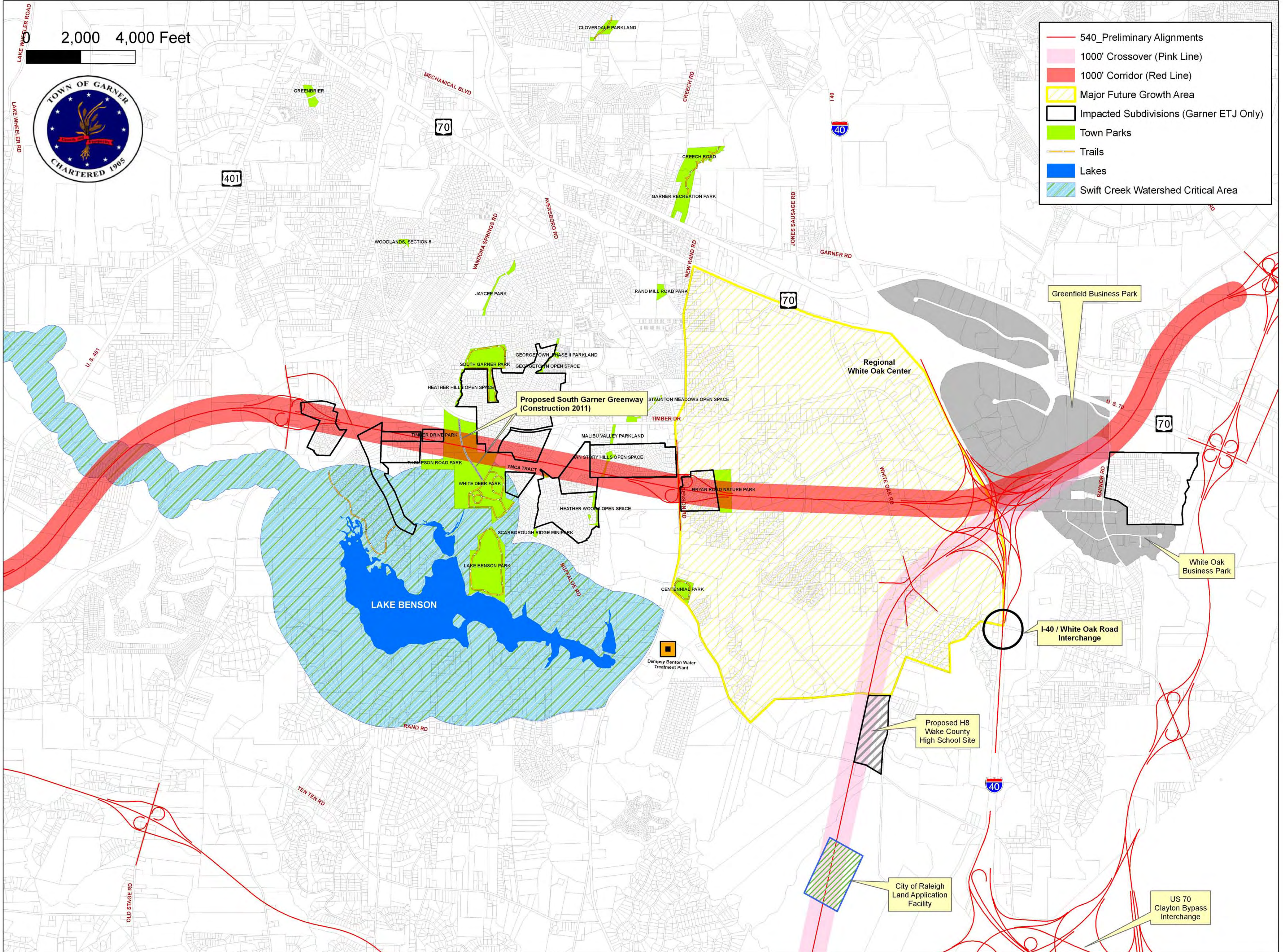
Hardin Watkins,
Town Manager

c: Mayor and Town Council
Steve DeWitt, P.E., Chief Engineer, NCTA
Brad Bass, AICP, Garner Planning Director
Frank Powell, P.E., Garner Town Engineer

0 2,000 4,000 Feet



- 540_Preliminary Alignments
- 1000' Crossover (Pink Line)
- 1000' Corridor (Red Line)
- Major Future Growth Area
- Impacted Subdivisions (Garner ETJ Only)
- Town Parks
- Trails
- Lakes
- Swift Creek Watershed Critical Area



Proposed South Garner Greenway (Construction 2011)

Regional White Oak Center

LAKE BENSON

Greenfield Business Park

White Oak Business Park

I-40 / White Oak Road Interchange

Proposed H8 Wake County High School Site

City of Raleigh Land Application Facility

US 70 Clayton Bypass Interchange

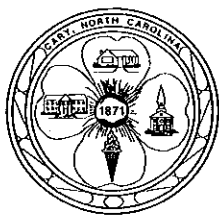
Dempsy Benton Water Treatment Plant

LAKE WHEELER ROAD
LAKE WHEELER RD
U.S. 401
OLD STAGE RD
TEN TEN RD
RAND RD
BUFFALO RD
CENTENNIAL PARK
DEMPSEY BENTON WATER TREATMENT PLANT

CLOVERDALE PARKLAND
MECHANICAL BLVD
GREENBRIER
WOODLANDS SECTION 5
VANDORA SPRINGS RD
JAYCEE PARK
SOUTH GARNER PARK
HEATHER HILLS OPEN SPACE
TIMBER DRIVE PARK
THOMPSON ROAD PARK
WHITE DEER PARK
SCARBOROUGH RIDGE MINIPARK
LAKE BENSON PARK
GEORGE OWEN PHASE II PARKLAND
GEORGETOWN OPEN SPACE
HEATHER WOODS OPEN SPACE
MALIBU VALLEY PARKLAND
PAN STORY HILLS OPEN SPACE
STANTON MEADOWS OPEN SPACE
TIMBER DR
BRYAN ROAD NATURE PARK
NEW RAND RD
CREECH ROAD
CREECH RD
JONES SAUSAGE RD
GARNER RD
WHITE OAK RD
RAYNOR RD
U.S. 70

U.S. 40
I-40
U.S. 70
I-40 / White Oak Road Interchange
US 70 Clayton Bypass Interchange

Todd Delk



OFFICE OF THE MAYOR

October 20, 2010

Ms. Jennifer Harris, P.E.
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699

Subject: Comments on the Study of the NC 540 Triangle Expressway Southeast Extension,
Purpose & Need Statement and Preliminary Alternatives

Dear Ms. Harris:

On behalf of the Cary Town Council, I respectfully submit the following comments in response to your September 2010 request for comments on the environmental impact study (EIS) process for the NC 540 Triangle Expressway Southeast Extension from NC 55 in Apex to the US 64/264 Bypass in Knightdale. The comments are listed below in respect to the Purpose & Need Statement and Preliminary Alternatives presented at your second round of public workshops held September 21-23, 2010.

- The NCTA should develop a more concise and specific Purpose & Need Statement outlining the specific elements that the alternatives will be designed to meet.
- The alternatives and new location corridors presented at the workshops seem reasonable and feasible for additional study and refinement.

The Town of Cary also reiterates our previous comment, submitted as part of the US 64 Study that we support NC 540 being designated as a bypass for the US 64 Corridor from Apex to Knightdale.

The Town would appreciate a response from the Turnpike Authority to both these comments and those submitted in my previous letter addressed March 17, 2010 as verification of your receipt and consideration of the presented issues.

The Town appreciates your consideration of our comments on this important matter. We would appreciate advance notification of any opportunities for additional public input on the EIS, including public workshops and hearings so that we may alert our citizens.

Please feel free to contact Todd B. Delk in our Engineering Department at (919) 462-3834 or via email at todd.delk@townofcary.org should you have any further questions relating to this issue. The Town of Cary looks forward to working with the Turnpike Authority on this important study process.

Best regards,

Harold Weinbrecht, Jr.
Harold Weinbrecht, Jr.
Mayor

TOWN of CARY

October 22, 2010

Dear North Carolina Turnpike Authority,

Please consider this letter a formal request on behalf of the YMCA of Garner and the YMCA of the Triangle for the state to follow the originally planned route for the final stretch of Interstate 540.

For years the Garner community has supported plans for the YMCA of the Triangle to build a full facility YMCA on property on Aversboro Road in Garner. Historically, YMCAs are community hubs for adults, families and children. For more than 150 years, the YMCA of the Triangle has strengthened the foundations of community through youth development, healthy living and social responsibility.

In addition, YMCAs make a positive economic impact the communities they serve. Changes to the original route would result in a negative impact on the future plans of the YMCA in Garner and the community at large.

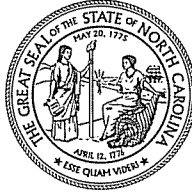
The new proposed route would divide family properties and ultimately damage our business community. We hope that you take our concerns into consideration as you make your decision.

Sincerely,



Brent Gore
Advisory Board Chair
YMCA of Garner





**NORTH CAROLINA GENERAL ASSEMBLY
STATE LEGISLATIVE BUILDING
RALEIGH, NORTH CAROLINA 27603**

November 30, 2010

Mr. Steve DeWitt, PE
Chief Engineer, NC Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Dear Mr. DeWitt:

As members of the North Carolina General Assembly who represent the Town of Garner, we write to express our concern over the proposals known as the "Red and Pink Routes" as possible extensions to N. C. 540 Southeast to connect and complete the Triangle Expressway.

The "Orange Route" had been the preferred and most logical route in the 1990s. Relying on the Orange Route's location, the Town of Garner has invested over \$3 million in infrastructure to support future growth based on its Comprehensive Growth Plan, last updated and adopted in 2006. Businesses, investors, and homeowners have also spent millions of dollars based on that growth plan. The Red corridor will disrupt that long-range and orderly growth.

In Greenfield South Business Park alone, the Town's primary industrial recruitment area, 26 commercial/industrial lots would be obliterated by the Red Route. Those lots have a total Wake County tax value of over \$30 million, and the demise of the park would have serious consequences for non-residential growth that is vital to the Town of Garner.

We have been told that the Orange Route path could threaten the habitat of a few endangered mussels; however, the Red Route would be extremely detrimental to current and future parks and recreation facilities and designated open space in the Town of

Mr. Steve DeWitt, PE
November 30, 2010
Page Two

Garner. It would completely obliterate and eliminate the 20-acre George W. Bryan Nature Park, and it would impede on the northern edge of the recently opened White Deer Nature Park, Garner's first LEED Gold certified facility. In addition, the Red Corridor would obstruct and wipe out a portion of the South Garner Greenway leading from Timber Drive to White Deer Park.

The Red Route would have negative water quality impacts to Lake Benson with the likelihood of contaminating its drinking water supply. With the recent completion of the \$90 million Dempsey Benton Water treatment Plant, this lake serves as a substantial potable water supply for the Metro Raleigh area.

The "Red Corridor" fails to provide adequate access to the Clayton Bypass facility and would, therefore, not accomplish needed goals of accommodating travelers from areas south of Garner that need to travel westward toward Holly Springs, Morrisville, and the Research Triangle Park.

The Red Route would have significant and direct impacts on 13 Garner neighborhoods affecting approximately 510 residential lots with a value over \$106.5 million. This represents a significant cost to the Garner community in terms of displacement and relocation of families as well as a significant impact to Garner's tax base.

In the 1950's the Town of Garner was split by the construction of Highway 70. They are still striving to recover from that unfortunate planning decision, and they cannot afford to be divided again by a road as large as the Triangle Expressway. If the protected Orange Corridor is selected as the preferred route, Garner can naturally grow towards the new expressway in a managed fashion over the next 25-35 years.

The Town of Garner has concerns about the Pink Corridor as well. The Pink Route would remove significant portions of the Town's industrial tax base, and it would traverse directly through a City of Raleigh Wastewater Biosolids facility located just south of the Garner town limits. It would eliminate a future high school site that was purchased by Wake County Public Schools after much outcry and discussion about other unacceptable locations. The Pink Route would change land use for a large segment of the Town's future growth area, and it would also fail to connect directly with the Clayton Bypass.

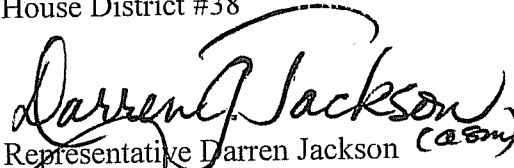
Over one thousand concerned Garner residents turned out for a meeting on November 17, 2010, in protest of the Red Route. We respectfully join with our constituents in asking that you eliminate both the Red and Pink Routes from your alternatives and select the Orange Route for the Triangle Expressway.

Mr. Steve DeWitt, PE
November 30, 2010
Page Three

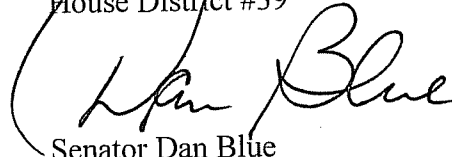
Very truly yours,



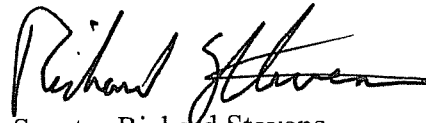
Representative Deborah Ross
House District #38



Representative Darren Jackson (a son)
House District #39



Senator Dan Blue
Senate District #14



Senator Richard Stevens
Senate District #17

cc: Mr. John Sullivan, PE
Federal Highway Administration

Mr. Gary Jordan
US Fish and Wildlife Service

Mr. Pete Benjamin
US Fish and Wildlife Service

Mr. Eric Alsmeyer
US Army Corps of Engineers

Mr. Scott McLendon
US Army Corps of Engineers

Mr. Chris Militscher
US Environmental Protection Agency

Mr. Brian Wrenn
NC Department of Environment and Natural Resources Div. of Water Quality

Mr. Travis Wilson
NC Wildlife Resources Commission

November 30, 2010

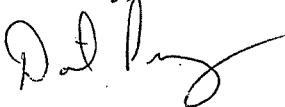
North Carolina Turnpike Authority
Christy Shumate, AICP
1578 Mail Service Center
Raleigh, NC 27699-1578

Dear NC Turnpike Authority,

I am writing you in regards to the new proposed Tan Corridor for the Southeast Extension of I-540. I am opposed to this new corridor as it would affect my neighborhood. My family bought a new home during the summer, June. Before we purchased this home, we researched the area to make sure that it would not be directly affected by the I-540 project. At the time it would be further along White Oak Rd, and would not directly affect our home.

The new Tan Corridor, from the maps available on-line, will either take out my home entirely or I will be able to throw a rock onto the highway. The originally proposed corridor has been planned for years, with limits on development to minimize future impact on housing. I find it ironic that Wake County and the City of Raleigh want to now change the original plan, to minimize the impact on the planned Randleigh Farm Property. It is like they wrote the rules, and now want to change them to suit their own needs. What about the people that followed the rules from the beginning?

Sincerely,



Daniel Penny
110 Galloway Dr
Garner, NC 27529
dbpenny@sbcglobal.net
919-585-2687

As a concerned and distressed citizen of Garner, N.C., about the proposed route of the Triangle Expressway, I feel that I must take a stand. The Red route will directly impact the lives of so many people, many of them elderly, like myself. I am not an ecological nut, but I do care about any wildlife on the endangered species list. However, I must ask this question, Are we, as citizens of Garner, and Wake County, so demoralized by the ecological battle that we place the lives of mud mussels (*Alasmidonta heterodon*) before the comforts of our elderly citizens? Many, lives will not withstand another disruption such as a move, just when we have found the place of our dreams in Aversboro Retirement Village. There are several other communities that will be adversely affected if the road proceeds as planned. Landmarks listed in our local paper include Vandora Pines, Breezeway, Timber Drive Park, White Deer Park, Heather Ridge, Van Story Hills, Forest Landing, Bryan Nature Park, and Greenfield Business Park. I have not yet mentioned the deer that will be left homeless without the protection of our woods. Much of which will be destroyed by an expressway passing through it. We have deer that feed in our back yard. My next question for the planning boards consideration: Why not place a bridge over the Little River and Swift Creek, and any other tributaries in question? It seems to me that this is a more humane gesture than destroying the homes and perhaps lives of so many people. I am just one voice in many that oppose this, and I, as a citizen will be heard. I thank you for listening to an elderly lady....wisdom comes with years. I remain,

Respectively Yours,



Jean C, Rhodes
275 Shady Hollow Lane
Garner, N.C. 27529

**GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011**

**SESSION LAW 2011-7
SENATE BILL 165**

AN ACT TO RESTRICT THE NORTH CAROLINA TURNPIKE AUTHORITY'S
SELECTION OF TRANSPORTATION CORRIDORS TO EXISTING PROTECTED
CORRIDORS OR CORRIDORS SOUTH OF AN EXISTING PROTECTED CORRIDOR
EXCEPT IN THE AREA OF INTERSTATE 40 EAST.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 136-89.183(a)(2) reads as rewritten:

"(2) To study, plan, develop, and undertake preliminary design work on up to nine Turnpike Projects. At the conclusion of these activities, the Turnpike Authority is authorized to design, establish, purchase, construct, operate, and maintain the following projects:

- a. Triangle Expressway, including segments also known as N.C. 540, Triangle Parkway, and Western Wake Freeway in Wake and Durham ~~Counties.~~ Counties, except that segment known as the Triangle Expressway Southeast Extension which shall not be located north of an existing protected corridor established by the Department of Transportation circa 1995, except in the area of Interstate 40 East.
- b. Gaston East-West Connector, also known as the Garden Parkway.
- c. Monroe Connector/Bypass.
- d. Cape Fear Skyway.
- e. A bridge of more than two miles in length going from the mainland to a peninsula bordering the State of Virginia, pursuant to G.S. 136-89.183A.
- f. Repealed by Session Laws 2008-225, s. 4, effective August 17, 2008. Any other project proposed by the Authority in addition to the projects listed in this subdivision must be approved by the General Assembly prior to construction.

A Turnpike Project selected for construction by the Turnpike Authority shall be included in any applicable locally adopted comprehensive transportation plans and shall be shown in the current State Transportation Improvement Plan prior to the letting of a contract for the Turnpike Project."



SECTION 2. This act is effective when it becomes law.

In the General Assembly read three times and ratified this the 17th day of March,
2011.

s/ Philip E. Berger
President Pro Tempore of the Senate

s/ Thom Tillis
Speaker of the House of Representatives

s/ Beverly E. Perdue
Governor

Approved 3:09 p.m. this 18th day of March, 2011



Board of Commissioners
P.O. Box 550 • Raleigh, NC 27602

TEL 919 856 6160
FAX 919 856 5699

PAUL COBLE, CHAIRMAN
PHIL MATTHEWS, VICE-CHAIR
JOE BRYAN
TONY GURLEY
STAN NORWALK
BETTY LOU WARD
JAMES WEST

December 8, 2010

David W. Joyner, Executive Director
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, North Carolina 27699-1578

RE: Triangle Expressway Southeast Extension – Tan Corridor

Dear Mr. Joyner,

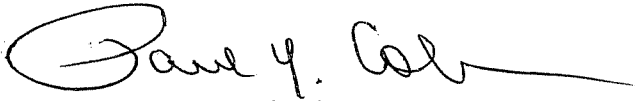
On November 4, 2010, the North Carolina Turnpike Authority (NCTA) announced the introduction of a new alternate corridor (Tan) on the eastern side of the Triangle Expressway Southeast Extension. Our understanding is that the Tan corridor was added as an alternative to the corridor shown at previous meetings (Green) in order to minimize impact on the planned development at Randleigh Farm. Wake County and the City of Raleigh jointly purchased the Randleigh Farm property for the development of various public facilities. However, the property has not been developed and the general alignment of the Triangle Expressway Southeast Extension corridor (Green) was known when the property was purchased. Wake County, therefore, does not support the recent addition of the new alternate corridor (Tan) and requests that it be removed from consideration.

Wake County supports the position that the Tan corridor's potential impact on established neighborhoods and residents is clearly more important than ensuring that the preliminary development plan of the Randleigh Farm property remain viable. Residents in the area have relied upon the general alignment corridor (Green) for many years when making investment decisions regarding their homes. As a result, residents have expressed their concern about the Tan corridor.

In addition to removing the Tan corridor from consideration, the County requests that the selection of the final corridor be expedited as much as possible. As long as alternatives remain under consideration, residents, business, and property owners must deal with the uncertainty that can create a financial burden and psychological stress.

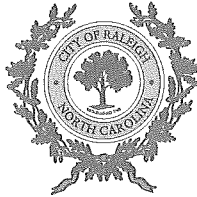
If you need additional information or have any questions about the County's position, please feel free to contact me.

Sincerely,

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

Paul Coble, Chairman
Wake County Board of Commissioners

cc: Eugene A. Conti Jr., Chairman, North Carolina Turnpike Authority
Perry R. Safran, Vice-Chairman, North Carolina Turnpike Authority
Robert D. Teer Jr., North Carolina Turnpike Authority
Robert C. Clay, North Carolina Turnpike Authority
John Collett, North Carolina Turnpike Authority
James H. Ferebee, Jr., North Carolina Turnpike Authority
Anthony Fox, North Carolina Turnpike Authority
E. David Redwine, North Carolina Turnpike Authority
Alan F. Swanstrom, North Carolina Turnpike Authority
David Cooke, County Manager, Wake County



City Of Raleigh
North Carolina

Charles Meeker
Mayor

January 11, 2011

David W. Joyner, Executive Director
NC Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

SUBJECT: Comments on TIP Project R-2829, Eastern Wake Expressway

Dear Mr. Joyner:

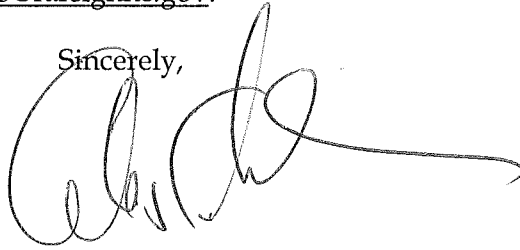
At our January 4, 2011 meeting, the Raleigh City Council received comments from the general public regarding alternatives under consideration for the Southeast Extension of the Triangle Expressway. The portion of your project within the City's jurisdiction falls under TIP Project R-2829 (Eastern Wake Expressway). These residents spoke out specifically in opposition to the Tan Corridor that has been developed by the NC Turnpike Authority for this segment of the project.

I understand that your project team has met with City staff from multiple departments on several occasions to discuss alignment issues along the Eastern Wake Expressway. Working out the details on a final alignment for this corridor has been a priority for the City for many years, especially with regards to getting out ahead of growth in this area and providing County residents with improved predictability.

The City Council voted unanimously to oppose the Tan Corridor as it is currently proposed, and we have requested that City staff continue to work with your project team to develop viable alternatives for consideration in your Environmental Impact Statement (EIS). We understand that the EIS process is technical in nature, but we urge you continue to take the concerns of area residents into account as you proceed with your study. The completion of the Eastern Wake Expressway as part of the larger Raleigh Outer Loop is important to the continued growth of the City and its neighboring communities. We appreciate the efforts of the Turnpike Authority to move this project forward.

If you have additional questions about our comments, please contact Eric Lamb
at (919) 516-2161 or by email at eric.lamb@raleighnc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Meeker', with a long horizontal flourish extending to the right.

~~Charles C. Meeker~~
Mayor

CCM/ejl

Cc: City Councilors
J. Russell Allen - Raleigh City Manager
David Cooke - Wake County Manager
Mitchell Silver, AICP - Raleigh Planning Director
Carl R. Dawson, Jr., PE - Raleigh Public Works Director
Brad Bass, AICP - Garner Planning Director



REPLY TO
ATTENTION OF:

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

JAN 27 2011

January 26, 2011

Regulatory Division/1145b

SUBJECT: Action ID 2009-02240; STIP Nos. R-2721, R-2828, and R-2829

Steven D. DeWitt, P.E.
Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Dear Mr. DeWitt:

Reference the proposed North Carolina Turnpike Authority project known as the Triangle Expressway Southeast Extension toll facility (STIP Nos. R-2721, R-2828, and R-2829), from NC 540 currently under construction at NC 55 in Holly Springs, to existing I-540 north of Poole Road and Clayton, in southern Wake and northeastern Johnston counties, North Carolina. Reference also the January 20, 2011 Turnpike Environmental Agency Coordination (TEAC) meeting for this project, at which Mr. Eric Alsmeyer of our staff informed you that the Corps of Engineers has identified an Issue of Concern regarding your proposal to eliminate the Red and Pink corridors as reasonable and feasible alternatives for further study. In accordance with Section 6002 of SAFETEA-LU Issues of Concern are those that "could result in denial of a permit or substantial delay in issuing a permit"

Our concern is based primarily on the Summary of Potential Impacts in Table 2 of Handout #8 for the January 20, 2011 TEAC meeting, which shows that the Orange Alternative, which, if the Red and Pink corridors were eliminated, would be the only remaining alternative for study in the eastern portion of the project study area, has substantially more wetland impacts (88.1 acres) than the Red and Pink Alternatives (43.7 acres and 57.4 acres, respectively), and has substantially more stream impacts (36,120 linear feet) than the Red Alternative (29,770 linear feet).

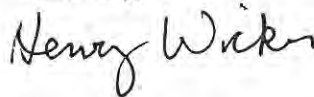
As you are aware, our permit program requires that we make a complete, thorough, and unbiased review of all factors associated with a proposed project within jurisdictional waters of the United States. A major component of the review is the consideration of reasonable and practicable alternatives, required by both the National Environmental Policy Act and the Clean Water Act 404 b (1) Guidelines (33 U.S.C. Section 1344 (b); 40 CFR Part 230). The Clean Water Act requires that individual permit decisions be made "after notice and opportunity for public hearings" (33 U.S.C. Section 1344(a)). Based on these requirements and the information we have available to us at this time, we believe it would be premature for the Wilmington District to agree to your proposal to eliminate from further consideration the "Red" and "Pink"

alternatives, as you have requested. It is our understanding that the impacts to both the natural and human environment that you have provided to us are based on 1,000 foot-wide corridors. It has been our experience that once a preliminary or functional design has been developed that these impacts may change substantially. Given the level of potential adverse impacts associated with all the corridors currently under consideration and our substantial requirements under the 404 (b) 1 Guidelines, we believe that a decision to eliminate one or more of these corridors should be based on impacts more closely associated with a typical 4-lane median divided facility that has been placed within each of the corridors in such a way as to avoid impacts to the maximum extent practicable.

If you elect to eliminate these alternatives from further consideration at this point, we may elect to prepare our own supplement to your EIS describing these alternatives, or prepare an entirely separate NEPA document that thoroughly describes alternatives to the proposed action. We note that this is specifically contrary to your draft "Section 6002 Coordination Plan for the Triangle Expressway Southeast Connector Project STIP Projects R-2721, R-2828, & R-2829" which states, in Section 1.2, Integration of NEPA and Section 404 Requirements, "(t)he process established in this plan is intended to ensure that ... the US Army Corps of Engineers (USACE) can issue a Section 404 permit for the project promptly following the end of the NEPA process, without the need for supplemental NEPA studies...."

Should you have any questions, please call Mr. Alsmeyer at (919) 554-4884, extension 23.

Sincerely,



for

S. Kenneth Jolly
Chief, Regulatory Division
Wilmington District

Copies Furnished:

Mr. Brian Wrenn
Division of Water Quality
North Carolina Department of
Environment and Natural Resources
1650 Mail Service Center
Raleigh, NC 27699-1650

Mr. Clarence Coleman
Federal Highway Administration
310 New Bern Ave., Rm 410
Raleigh, North Carolina 27601-1442

Mr. Chris Lukasina
Capital Area Metropolitan Planning Organization (CAMPO)
127 West Hargett Street, Ste. 800
Raleigh NC 27601

Mr. Heinz Mueller
Chief, NEPA Program Office
Office of Policy and Management
US Environmental Protection Agency
61 Forsythe St., SW
Atlanta, GA 30303

Mr. Gary Jordan
US Fish and Wildlife Service
PO Box 33726
Raleigh, NC 27636

Mr. Travis Wilson
NC Wildlife Resources Commission
1142 I-85 Service Road
Creedmoor, NC 27522

Mr. Peter Sandbeck
NC State Historic Preservation Office
4619 Mail Service Center
Raleigh, NC 27699-4619

Office of
County Commissioners
(919) 989-5100
FAX (919) 989-5179

Paula G. Woodard, Clerk

Johnston County
POST OFFICE BOX 1049
SMITHFIELD, N.C. 27577

Allen L. Mims, Jr., Chairman
Jeffrey P. Carver, Vice Chairman
Cookie Pope
W. Ray Woodall
DeVan Barbour
Tony Braswell
Wade M. Stewart

February 8, 2011

Mr. David W. Joyner
Executive Director
N.C. Turnpike Authority
1578 Mail Service Center
Raleigh, N.C. 27699-1578

Re: Triangle Expressway Southeast Extension – Tan Corridor

Dear Mr. Joyner:

The Johnston County Board of Commissioners opposes the Tan Corridor option for the Triangle Expressway Southeast Extension. It was our understanding that there has been a selected corridor reserved for this project for several years. As you can imagine, recent discussions regarding alternate options (such as the Tan Corridor) have been upsetting for Johnston County landowners in the vicinity.

Johnston County appreciates the opportunity to voice our concerns, and we hope that the Tan Corridor option will be eliminated from consideration. If you need further information, please feel free to contact me.

Sincerely,



Allen L. Mims, Jr., Chairman
Johnston County Board of Commissioners

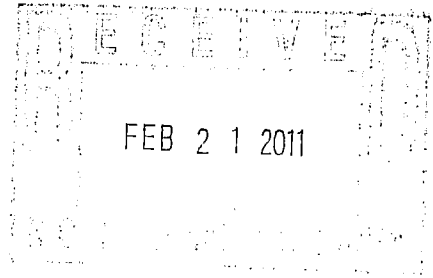
Cc: Johnston County Board of Commissioners
Mr. David Rouzer, North Carolina Senate
Mr. James H. Langdon, Jr., North Carolina House of Representatives
Mr. N. Leo Daughtry, North Carolina House of Representatives



United States Department of the Interior

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

February 17, 2011



Steven D. Dewitt, P.E.
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, North Carolina 27699-1578

Dear Mr. Dewitt:

This letter is in regard to the Southern and Eastern Wake Expressway (TIP Nos. R-2721, R-2828, and R-2829). As you know, the U.S. Fish and Wildlife Service (Service) has been very involved in this project through the Turnpike Environmental Agency Coordination meetings. At these meetings, the Service has stated its concern regarding the likely adverse effects of the project on the federally endangered dwarf wedgemussel (*Alasmodonta heterodon*) within the Swift Creek watershed (Neuse River basin). Section 7(a)(2) of the Endangered Species Act (ESA) requires that all federal action agencies (or their designated non-federal representatives), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally threatened or endangered species. We anticipate that a formal Section 7 consultation will be required. The Federal Highway Administration (FHWA), as the lead federal action agency, must initiate formal Section 7 consultation by submitting to the Service an initiation package which includes a Biological Assessment (BA). In return, the Service will conduct an analysis to determine if the project will jeopardize the continued existence of the dwarf wedgemussel and issue a Biological Opinion (BO). Given the fact that the 1993 Dwarf Wedgemussel Recovery Plan requires a viable population in Swift Creek in order to recover the species, maintenance of a sustainable dwarf wedgemussel population in the post-project Swift Creek watershed is vitally important. We cannot understate the significance of this issue.

In addition to the normal information needs in developing the BA and BO (e.g. fully describing and analyzing the direct, indirect and cumulative effects to the species), the Service must determine the Environmental Baseline of the species. This section of the BO is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat, and ecosystem within the action area. The Service believes there is a significant lack of information for this critical component of the BO, which will likely hamper our analysis.

The ESA requires that the action agency provide the best scientific and commercial data available concerning the impact of the proposed project on the listed species. Although significant mussel survey data exists, the Service believes that more holistic data regarding historical trends and ongoing alterations of habitat, water quality, hydrograph, watershed, and

land use are either lacking or not readily available to the Service. We believe that if additional data and information were developed and/or acquired, the Section 7 consultation will be expedited, and the probability of arriving at sound and accurate conclusions increases. In lieu of filling these data gaps, the Service will develop the BO with available information, but giving the benefit of any doubts to the species.

In order to ensure that issues related to data gathering and information availability and analysis do not impede the consultation process, the Service is requesting that the North Carolina Turnpike Authority (NCTA) and/or the FHWA fund an additional study within the Swift Creek watershed. This additional information would greatly assist in the development of the environmental baseline, effects analysis, jeopardy analysis, incidental take statement (if a no jeopardy opinion) and reasonable and prudent measures (if a no jeopardy opinion). We envision a three part study which focuses on the Swift Creek watershed from the Lake Benson dam downstream to its confluence with the Neuse River, but may include relevant data from upstream of the Lake Benson dam if needed (e.g. to fully evaluate stressors).

The study components include:

1. Provide an accounting (compliance/success) of existing conservation measures in the lower Swift Creek watershed. This would primarily be a “desktop” evaluation which documents conservation/mitigation measures adopted for past projects and following up to see if the measures were implemented and enforced. It would also document all other environmental protections emplaced through legislation and local ordinances.
2. Evaluate the effectiveness of existing conservation measures and environmental protections, with regard to the dwarf wedgemussel and other rare aquatic species. This portion of the study could incorporate a modified version of an existing local watershed planning process developed by the North Carolina Ecosystem Enhancement Program. It includes the following phases:
 - a. Watershed characterization
 - i. Review existing watershed data
 - ii. Identify data gaps
 - iii. Identify preliminary stressors
 - b. Detailed assessment and modeling
 - i. Conduct water quality monitoring and field assessments based upon identified data gaps
 - ii. GIS data development
 - iii. Stakeholder outreach
 - c. Watershed management plan and project atlas
 - i. Develop watershed recommendations to address identified stressors (projects, planning and zoning recommendations, etc.)
 - ii. Develop project atlas that prioritizes projects based upon degree of functional improvement and project feasibility
3. Determine mussel population and habitat viability. This would determine if the dwarf wedgemussel population contains a sufficient number of reproducing adults to maintain genetic variability and annual recruitment adequate to maintain a stable population. This would also determine if aquatic habitat [both physical (e.g. substrate, hydrograph) and

chemical] is currently sufficient to support dwarf wedgemussels. It would determine whether the conditions are stable, declining, or improving by assessing historic habitat trends and projecting into the future what the habitat quality is likely to be (given future development pressures in the watershed).

The proposed study will require both qualitative and quantitative data collection, be part field-based and part academic in nature, involve multiple professional disciplines, and should lead to logically defensible conclusions. Although best professional judgment may be a component, emphasis should be placed on acquiring and analyzing empirical data. The information derived from this study can be used to enhance the quality of the BA and will be a critical component of the BO.

If the Service issues a "No Jeopardy" opinion, the action agency will be required to implement Reasonable and Prudent Measures (RPM) in order to minimize the level of take of the species. The information developed from the proposed study will help develop the RPM and the Terms and Conditions for implementing them. Depending upon the information and conclusions obtained, one possible RPM may involve captive propagation and augmentation/reintroduction of the species within the Swift Creek watershed. We will further address this issue if the study conclusions support it.

In addition to the aforementioned proposed study, the Service recommends that the NCTA and FHWA begin planning for the development of the BA, with special emphasis on the indirect and cumulative effects of the project. Please note that indirect effects and cumulative effects are defined differently in the ESA than from the National Environmental Policy Act. Under the ESA, indirect effects are defined as "those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur." Though indirect effects can take many forms, of greatest concern are road-induced secondary development and infrastructure with the accompanying degradation of water quality and increased sedimentation. Under the ESA, cumulative effects are defined as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." Cumulative effects may be difficult to distinguish from indirect effects.

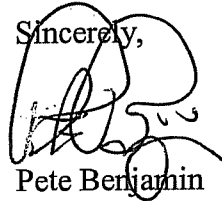
One additional consideration is that the Service has recently been petitioned to list several other aquatic species which occur within the Swift Creek watershed as threatened or endangered. Although the Service has not yet completed the process to determine whether the species warrant federal protection, it is a real possibility that one or more of these species could be listed prior to the construction of this project. If so, Section 7 consultation would be required for any newly listed species. This should be monitored closely and considered during the planning of this project.

Again, the Service is requesting that the NCTA and/or FHWA fund the aforementioned study. We understand that it is the action agency's prerogative to either provide for the additional study or not; however, the Service believes it is in the best interest of all parties to conduct the study and to initiate it as soon as possible in order to ensure timely completion of the consultation process. We believe that developing the BO without the additional information would be very

difficult and require us to give the benefit of a doubt to the conservation of the species. We would likely have to make several assumptions, which may not be favorable to the NCTA and FHWA.

We look forward to the scheduled March 14 meeting to discuss these issues. If you have any questions regarding this letter, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

A handwritten signature in black ink, appearing to read 'Pete Benjamin', written over the word 'Sincerely,'.

Pete Benjamin
Field Supervisor

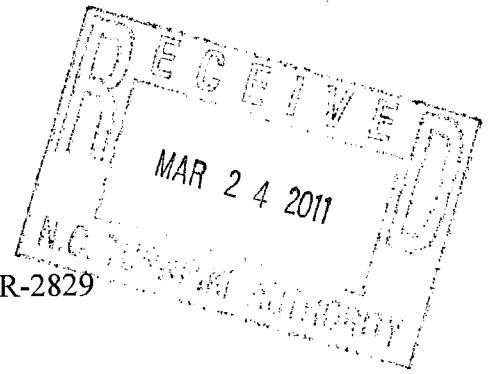
cc: George Hoops, FHWA, Raleigh, NC
Eric Alsmeyer, USACE, Wake Forest, NC
Brian Wrenn, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Rob Nichols, NCWRC, Garner, NC
Chris Militscher, USEPA, Raleigh, NC
Judy Ratcliffe, NCNHP, Raleigh, NC



REPLY TO
ATTENTION OF:

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

March 23, 2011



Regulatory Division/1145b

SUBJECT: Action ID 2009-02240; STIP Nos. R-2721, R-2828, and R-2829

Steven D. DeWitt, P.E.
Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Dear Mr. DeWitt:

Reference the proposed North Carolina Turnpike Authority project known as the Triangle Expressway Southeast Extension toll facility (STIP Nos. R-2721, R-2828, and R-2829), from NC 540 currently under construction at NC 55 in Holly Springs, to existing I-540 north of Poole Road and Clayton, in southern Wake and northeastern Johnston counties, North Carolina. Reference also my January 26, 2011 letter identifying an Issue of Concern regarding your proposal to eliminate the Red and Pink corridors as reasonable and feasible alternatives for further study. The Red and Pink Alternatives appear at this time to have significantly less impacts to the aquatic environment and to endangered species than the Orange Alternative; therefore, we believe eliminating these alternatives at this point, well before a draft NEPA document has been prepared, is premature and not warranted by the information we presently have.

After further review of the available information related to these alternatives, we have the following questions:

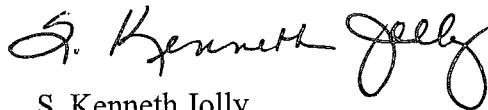
- 1) What is the relative quality of the wetlands and streams that may be impacted by the Red, Pink and Orange Alternatives? We do not believe it is necessary to provide a detailed functional analysis of each potential impact site but believe it is important to determine, on a qualitative basis, the relative difference, if any, that exists between the referenced alternatives.
- 2) What is the comparison between the wetland occurrences on the 1,000-foot Orange Alternative corridor, as predicted by the National Wetland Inventory (used in the current impact tables), and the delineated wetland occurrences on the same corridor that have been field-verified by the Corps of Engineers, to date?

- 3) Provide additional detail regarding the level of design that is associated with the “conceptual alternative alignment”.
- 4) How was the “conceptual alternative alignment” for the 300-foot wide preliminary new location alternative corridors placed within the 1,000-foot study corridors (Reference the August 10, 2010 Turnpike Environmental Agency Coordination Meeting Handout #3, “Alternative Screening, Quantitative Second Tier Screening of Alternative Concepts”, page 4, Section 2., SCREENING CRITERIA)? It is not clear to us whether the conceptual alternative alignment was placed in the center of the 1,000-foot corridor or if it was placed in such a manner that it avoided and/or minimized impacts to the human and natural environment.
- 5) What methodology did the NC TA employ to quantify the “Structures Relocated”, as shown in the Summary of Potential Impacts in Table 2 of Handout #8 for the January 20, 2011 TEAC meeting (e.g., dates of aerial photography used, tax maps, windshield surveys, and assumptions made)?
- 6) We were recently made aware that an Alternatives Screening Report has been prepared but has not been provided to us for our review. We would appreciate receiving a copy of this report as soon as it is finalized as this may contain information we are not currently aware of.

We continue to support the development of the draft EIS for this project to allow for a fair and unbiased comparison of alternatives leading to a determination of the Least Environmentally Damaging Practicable Alternative for this project.

Should you have any questions, please call Mr. Alsmeyer at (919) 554-4884, extension 23.

Sincerely,



S. Kenneth Jolly
Chief, Regulatory Division

Copies Furnished:

Mr. Brian Wrenn
Division of Water Quality
North Carolina Department of
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1650 Mail Service Center
Raleigh, NC 27699-1650

Mr. Clarence Coleman
Federal Highway Administration
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Mr. Chris Lukasina
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Raleigh NC 27601

Mr. Heinz Mueller
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Mr. Peter Sandbeck
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Town of Garner

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Ronnie S. Williams
MAYOR

October 6, 2011

Mr. David Joyner
Executive Director
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Dear David,

Thank you for the opportunity to discuss the proposed new 540/Triangle Expressway Southeast Extension turnpike with you and officials from CAMPO and NCDOT here at Garner Town Hall on August 31, 2011. It was an informative meeting.

As discussed in the meeting, the Town of Garner is not interested in the "red route" alignment of the proposed 540 roadway being studied, considered, or built. This is a well-documented position and viewpoint of the Town and we enjoy the support of the NC General Assembly in this viewpoint.

The Town believes that no further action on the part of NCDOT, NCTA, or CAMPO should be undertaken on the continuation of 540 in southern Wake County until an official response is received from the federal and state resource agencies that have jurisdiction in this matter. The Town believes that the alternatives report (with a summary of the work, research, and documentation completed so far) should be forwarded to the resource agencies and urges NCTA/NCDOT to complete that task if it has not yet been completed. We spoke briefly about this report via telephone call to NCTA Chief Engineer Steve DeWitt during the August 31, 2011 meeting and he indicated that the alternatives summary report was nearing completion.

The Town would also urge NCTA to formally reply to the six questions asked by Kenneth Jolly, Chief, Regulatory Division, US Army Corps of Engineers – Wilmington District in his letter dated March 23, 2011, if that has not already occurred. If it has occurred, we would be pleased to receive a copy of that reply and any response received from the USACE.

As you know, the Town is a proponent of the completion of the entire 540/Triangle Expressway for the good of the region and looks forward to the highway being constructed within the alignment of the orange route (i.e., the "protected corridor") in the near future. Indeed, the Town has been planning for the completion of 540 in the location of the protected corridor for more than a decade, and the zoning and land uses outlined in our approved land use plan are predicated on that location which was established in the 1990s. We cannot support or endorse any activity that involves study or construction of the "red route." That will destroy our community.

The Town will continue to monitor activities related to the proposed 540/Triangle Expressway Southeast Extension and we look forward to its successful advancement and completion within the protected corridor. Please send us a summary of recently-completed and expected activities related to the progress of the proposed 540 in southern Wake County at your earliest convenience, and please forward copies of the alternatives summary report and transmittal letter when they are completed and sent to the resource agencies. The Town would also be pleased to receive copies of response letters including those from FHWA, Corps of Engineers, EPA, and US Fish & Wildlife.

Thank you for your continued leadership of the NC Turnpike Authority and your ongoing willingness to hear the Town of Garner's views and concerns. I look forward to talking with you soon, and I offer you continued best wishes on the successful opening of the first segments of the Triangle Expressway Turnpike later this year and in 2012 in western Wake County.

Sincerely,

A handwritten signature in cursive script that reads "Ronnie S. Williams".

Ronnie S. Williams
Mayor

cc: Terry Gibson, NCDOT
Ed Johnson, CAMPO
Steve DeWitt, NCTA
Joe Milazzo, RTA
Hardin Watkins, Town Manager
Brad Bass, Planning Director



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

REPLY TO
ATTENTION OF:

February 17, 2012

Regulatory Division/1145b

SUBJECT: Action ID 2009-02240; STIP Nos. R-2721, R-2828, and R-2829

Steven D. DeWitt, P.E.
Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Dear Mr. DeWitt:

Reference the proposed North Carolina Turnpike Authority (NCTA) project known as the Triangle Expressway Southeast Extension toll facility (TIP Nos. R-2721, R-2828, and R-2829), from NC 540 currently under construction at NC 55 in Holly Springs, to existing I-540 north of Poole Road and Clayton, in southern Wake and northeastern Johnston Counties, North Carolina. Reference also my March 23, 2011 letter asking for additional information regarding alternatives; my meeting on December 20, 2011, with representatives of the North Carolina Department of Transportation, including the NCTA and its consultants, and of the Federal Highway Administration; and NCTA's submittal on January 9, 2012, of the revised Draft Alternatives Development and Analysis Report (DADAR), for the subject project.

We understand that Governor Perdue signed legislation (Senate Bill 165) on March 18, 2011, that restricted the study, planning, and development of the Triangle Expressway Southeast Extension from the area north of the protected corridor and west of Interstate 40 (the area of the Red and Pink Corridors). We believe that state law which restricts the consideration of reasonable and practicable alternatives does not preclude our requirement under the 404 (b)(1) Guidelines (40 CFR Part 230) to analyze and objectively compare alternatives for this or any project that requires a Clean Water Act permit. While we are sensitive to the potential impacts to communities, public recreation facilities, and an industrial park in the Town of Garner, associated with the Red Corridor, we believe that its elimination from further consideration compromises our ability to satisfy our statutory requirements under the Guidelines.

The DADAR recommends that the Orange to Red to Green Corridor not be included as a reasonable and practicable alternative for detailed study in the Draft Environmental Impact Statement (DEIS) because it has significant and disproportionate impacts on the human environment, has limited ability to meet traffic needs, and is not a feasible and prudent Alternative under Section 4(f) of the Department of Transportation Act of 1966.

Our permit program requires that we make a complete, thorough, and unbiased review of all factors associated with a proposed project within jurisdictional waters of the United States.

NESAUC-RG/McLendon

A major component of the review is the consideration of reasonable and practicable alternatives, required by both the National Environmental Policy Act (NEPA) and the Clean Water Act 404 (b)(1) Guidelines (40 CFR Part 230). The 404 (b)(1) Guidelines require that the Corps can permit a project only if the applicant demonstrates that other alternatives are not practicable, available or less environmentally damaging. Practicable relates to cost, logistics or technology. As is FHWA, we are required to satisfy the provisions of NEPA which include the requirement to develop an EIS to examine all reasonable alternatives to the proposal, with reasonable alternatives including those that are practical or feasible from the technical and economic standpoint, rather than simply desirable from the standpoint of the applicant. Table 5-2 in the DADAR, Preliminary Alternatives – Summary of Potential Impacts, describes impacts to 43.7 acres of wetlands, and 29,770 linear feet of stream, for a 300- foot right-of-way for the end-to-end Orange to Red to Green Alternative that includes the Red Corridor, based on map data including the National Wetlands Inventory. This compares to impacts to 88.1 acre of wetlands and 36,110 linear feet of stream for the end-to-end Orange to Green Alternative. Furthermore, the US Fish and Wildlife Service has indicated that construction within the Orange Corridor would result in an adverse impact to the federally endangered dwarf wedge mussel (*Alasmidonta heterodon*) and that formal consultation will be required. Based on this information, the Orange to Red to Green Alternative appears to be a less environmentally damaging alternative and should be included as an alternative to be studied the Draft Environmental Impact Statement (DEIS). Nothing in our administrative record for this project indicates that the Orange to Red to Green Alternative is not practicable under the 404 (b) (1) Guidelines.

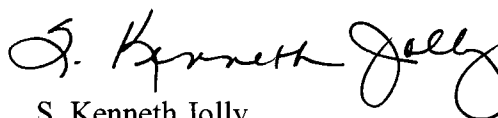
We are being asked to eliminate every alternative segment for a major portion of the corridor, with the exception of one, including the elimination of the least environmentally damaging alternative, prior to the release of a DEIS and before we, the agencies and the public have had an opportunity to conduct a side-by-side comparison of the one remaining segment alternative with the Red Corridor, with the usual level of data that is available after the DEIS, including detailed wetland delineation information, functional design, an analysis of the indirect and cumulative impacts, and additional data related to our twenty-one public interest review factors. Where we have previously elected to eliminate alternatives from further consideration prior to release of a DEIS, 1) the eliminated alternative clearly had unacceptable impacts to either the natural or human environment as compared to other alternatives under consideration, *and* 2) there was a sufficient number of remaining alternatives that encompassed a range of impacts to both the natural and human environment that the alternatives could be reasonably compared. Therefore, we believe it is premature to eliminate what we believe to be the environmentally preferable alternative from further consideration

We understand that FHWA has determined that several 4(f) properties may be impacted by the Red Corridor. Furthermore, we are also aware of the restriction that Section 4(f) of the Department of Transportation Act of 1966 places upon FHWA including a stipulation that FHWA cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless there is no feasible and prudent alternative to the use of land, or the action includes all possible planning to minimize harm to the property resulting from use. While this may be a consideration utilized by FHWA in determining a preferred alternative, we do not concur that the Department of Transportation Act should be used to define a reasonable range of alternatives under NEPA, and believe that it

cannot be used to eliminate alternatives that should otherwise be considered under the Clean Water Act 404(b)(1) Guidelines. We continue to believe that in order for the EIS to satisfy our respective agencies' responsibilities, it should rigorously explore and objectively evaluate the Red corridor. For the reasons discussed above, if the NCTA elects to complete its NEPA analysis and release a DEIS without including the Orange to Red to Green Alternative as an alternative for detailed study, and the NCTA intends to pursue Department of the Army authorization for this project, we may find it necessary to terminate our cooperating agency status with the FHWA and supplement the FHWA EIS with our own document.

Should you have any questions, please call Mr. Alsmeyer at (919) 554-4884, extension 23.

Sincerely,



S. Kenneth Jolly
Chief, Regulatory Division
Wilmington District

Copies Furnished:

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Mr. Heinz Mueller
Chief, NEPA Program Office
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US Environmental Protection Agency
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Mr. Gary Jordan
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Town of Garner

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March 7, 2012

Mr. Steve DeWitt, P.E., Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Re: Triangle Expressway Southeast Extension Alternatives Development & Analysis Report

Dear Mr. DeWitt:

This letter is to advise you of the Town of Garner's position regarding the Triangle Expressway Southeast Extension Alternatives Development & Analysis Report dated January 13, 2012.

The Town of Garner would like to reiterate the statements and concerns noted in: a) our letter dated October 20, 2010 addressing our initial concerns with the devastating human impacts of the red route; b) our Resolution (2010) 2072 dated October 4, 2010 supporting use of the original protected corridor design illustrated as orange on NCTA maps; and c) our letter dated January 9, 2012 detailing the significant negative impacts on numerous public parks in the Town of Garner.

As you know, the Garner community cannot withstand the negative consequences of construction and/or study of the red route. It is destructive to our community and the prospect of study brought our growth and economic development progress to a standstill during 2010.

While a devastating transportation option such as the red route is being actively and publicly studied, no home buyer is interested in buying a house (new or resale) in the road's path and no industry, bank, or developer is willing to invest in any project in or near the route's study area.

Since the NC General Assembly passed legislation on March 18, 2011 disallowing the NCTA to study any route north of the orange corridor, the following positive economic impacts have occurred in the Town of Garner:

Residential

- Sales resumed at the Village of Aversboro, one of the hottest residential projects in Wake County.
- This community has seen 15 house closings since March 18, 2011. Value of these residential sales totals \$4,424,000.
- 7 additional home sales are currently pending (waiting to close or under construction).
- An additional 17 lots have been sold to builders by the developer for the next round of construction. This totals \$1,190,000 in value.

Commercial/Industrial

- Strategic Behavioral Health, LLC of Memphis, Tennessee announced they would build a brand new facility in Garner.
- Their investment will total approximately \$8 million. This project is currently under construction with a late 2012 opening date. The venture capital fund backing this project refused to allow the project to continue until the red route was removed.
- This new facility will employ 200 employees with an average wage of \$50,000.
- Penske Truck Leasing Service Center had broken ground just prior to announcement of the red route as a study alternative going through their brand new site. Their corporate management in Pennsylvania was devastated to learn of the possible destruction of their brand new investment in NC.
- Their facility investment totals \$3 million and 12 jobs.

Totals

The discontinuation of the study of the red route has resulted in **\$16,614,000 in new investment** in Garner and adds tremendously to our tax base. **212 permanent jobs** and numerous short-term construction jobs are created for the Research Triangle region.

All persons that have engaged in conversation about the red route agree that the red route is horribly detrimental to the Town of Garner and is not worthwhile for construction. Therefore, it seems to be extremely foolish to continue studying it. It is a waste of public dollars and creates irreparable harm to the entire Garner community; current residents, active residential developers, and industrial tenants (current and future) are severely harmed.

It is notable that CAMPO, the Capital Area Metropolitan Planning Organization, representing 18 area municipalities and 5 counties, completely agrees with and supports the Town's position and beliefs on this matter.

The Town is pleased with the Triangle Expressway Southeast Extension Alternatives Development & Analysis Report and commends the NCTA for taking the Garner community concerns to heart in its recent work.

The notable remarks about the **red route that were pleasing to the Town include the following:**

From page 5-22: "Despite these advantages (mentioned in preceding paragraph) of the red corridor alternative, it is the opinion of NCTA that the numerous disadvantages of the Red Corridor Alternative are so extensive and significant that they outweigh this advantage."

6.5 pages of text follow outlining why the red corridor alternative is a bad idea. The headings are as follows: a) does not serve traffic needs; b) disproportionate community impacts; c) impacts to Swift Creek watershed area; d) impacts to Section 4-F applicable resources (town parks); e) negative impacts to local economic base; and f) opposed by local governments and local community.

The report also discusses the 6 alternate routes proposed by Town of Garner and the one route suggested by Joe Milazzo of Regional Transportation Alliance (RTA) that follows existing I-40 & US 64.

From the Town's perspective, the bottom line is on page 5-38. The NCTA report identifies five alternatives for additional detailed study in the next phase – Draft Environmental Impact Statement (EIS). These are the options that NCTA plans to move forward with:

1. Orange to Green
2. Orange to Green to Mint Green to Green
3. Orange to Brown to Tan to Green
4. Orange to Brown to Green
5. Orange to Green to Teal to Brown to Green

The Town is extremely pleased that none of these alternatives say red or pink.

We are hopeful that our colleagues at the various state and federal resource agencies will see this matter the same way the citizens of Garner do. The human impacts are too severe to continue with any further study of the red route.

The Town understands that the federal regulatory officials continue to be concerned about wetland impacts. Of course the red route has less wetland impacts – it traverses and obliterates 13 residential neighborhoods, 4 Town parks, and our primary industrial park – Greenfield South. By definition, residential communities, active parks, and industrial areas are located on high ground outside of low-lying, swampy areas. A route through Downtown Raleigh would produce lower wetland impacts, but that is also an unwise option. It is doubtful that the original intent of NEPA was for all new highway routes to go through densely developed suburban or urban areas. If the amount of wetlands is the driving force for route selection decisions, then very few new routes will be built in less populated areas.

For the good of the Research Triangle Region, a vital and important economic engine for the State of North Carolina and the Southeastern United States, Highway 540, Raleigh's Southern Loop, needs to be constructed. Our region does not need to replicate the gridlock, traffic congestion, and associated problems of our neighbors in Atlanta and Washington, DC. Continuing to delay progress on Highway 540's designated route (orange protected corridor) from 15+ years ago is unwise and detrimental.

Thank you for your time and effort involved in preparing the recent Triangle Expressway Southeast Extension Alternatives Development & Analysis Report. Please contact me at 919-773-4407 if you have any questions or need additional information.

Sincerely,



Hardin Watkins
Town Manager



Board of Commissioners

P.O. Box 550 • Raleigh, NC 27602

TEL 919 856 6160
FAX 919 856 5699

PAUL Y. COBLE, CHAIRMAN
PHIL MATTHEWS, VICE-CHAIR
JOE BRYAN
TONY GURLEY
ERVIN PORTMAN
BETTY LOU WARD
JAMES WEST

August 29, 2012

David W. Joyner, Executive Director
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, North Carolina 27699-1578

RE: Triangle Expressway Southeast Extension

Dear Mr. Joyner,

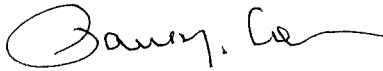
The Wake County Board of Commissioners received an update on the planning activities for the proposed Triangle Expressway Southeast Extension at their Board meeting on Monday August 20, 2012. This letter is to reaffirm the County's position on this project.

1. The County supports the original "orange" corridor in the area south of Garner as stated in the Board's resolution adopted on October 18, 2010.
2. The County supports the "green" corridor on the eastern side of the Triangle Expressway Southeast Extension as indicated in a letter from the Board of Commissioners to the Turnpike Authority on December 8, 2010.
3. The County requests that the selection of the final corridor be expedited as much as possible. As long as alternatives remain under consideration, residents, businesses, and property owners must deal with the uncertainty that can create a financial burden and psychological stress.
4. The County requests that all public input from past planning activities on this project, including comments, letters, petitions, emails or other, be entered into the record as the Turnpike Authority embarks on additional public workshops later this year.

If you need additional information or have any questions about the County's position, please feel free to contact me.

NCTA
August 29, 2012
Page 2

Sincerely,



Paul Y. Coble, Chairman
Wake County Board of Commissioners

cc: Richard Burr, United States Senator, North Carolina
Kay Hagan, United States Senator, North Carolina
Eugene A. Conti Jr., Chairman, North Carolina Turnpike Authority
Perry R. Safran, Vice-Chairman, North Carolina Turnpike Authority
Robert D. Teer Jr., North Carolina Turnpike Authority
Robert C. Clay, North Carolina Turnpike Authority
John Collett, North Carolina Turnpike Authority
James H. Ferebee, Jr., North Carolina Turnpike Authority
✓ Anthony Fox, North Carolina Turnpike Authority
Thomas A. Stith III, North Carolina Turnpike Authority
Alan F. Swanstrom, North Carolina Turnpike Authority
David Cooke, County Manager, Wake County



U.S. Department
of Transportation

**Federal Highway
Administration**

FEDERAL HIGHWAY ADMINISTRATION

North Carolina Division
310 New Bern Avenue, Suite 410
Raleigh, NC 27601
HDA-NC



DEPARTMENT OF THE ARMY

Wilmington District, Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403-1343
Regulatory Division/1145b

December 7, 2012

Mr. Terry R. Gibson, P.E.
Chief Engineer
North Carolina Department of Transportation (NCDOT)
1536 Mail Service Center
Raleigh, NC 27699-1536

SUBJECT: Action ID 2009-02240; STIP Nos. R-2721, R-2828, and R-2829

Dear Mr. Gibson:

This letter is in regards to the North Carolina Session Law 2011-7 (N.C.S.L. 2011-7) and its impact on the Triangle Expressway Southeast Extension project proposed by the North Carolina Turnpike Authority (NCTA). The law, which was passed on March 18, 2011, states that the Triangle Expressway Southeast Extension project shall not be located north of an existing protected corridor established by the North Carolina Department of Transportation (NCDOT) in 1995, except in the area of Interstate 40 East. Consequently, the law restricts the location of alternative corridors prior to the engineering and environmental analysis required by the National Environmental Policy Act (NEPA) and other Federal laws. Based on this restriction, Federal Highway Administration (FHWA) found it imperative that the process to advance the project be fully supported and concurred with by all Federal agencies. In an effort to do this, a series of meetings and discussions were held with multiple stakeholders to resolve issues and advance the project. Through these meetings, the following concerns have been identified by the Army Corps of Engineers (Corps) and FHWA regarding the approach and its ability to successfully advance the project under the requirements of NEPA and Section 404 (b)(1) Guidelines (40 CFR Part 230).

The NCDOT and NCTA, in consultation with Dawson and Associates, developed a Project Advancement Plan which included a proposal to evaluate refinements to the project purpose to reflect input from public involvement [possibly including local plan support and financial viability as elements of the NEPA project purpose] and an evaluation of additional potential alternatives. Both the Corps and FHWA have concerns that, for this project, including local plan support as a primary NEPA project purpose may inappropriately limit the study of a full range of Detailed Study Alternatives. The Corps believes that it would not support their requirement

under the 404 (b)(1) Guidelines (40 CFR Part 230) to analyze and objectively compare alternatives for this project that requires a Clean Water Act permit.

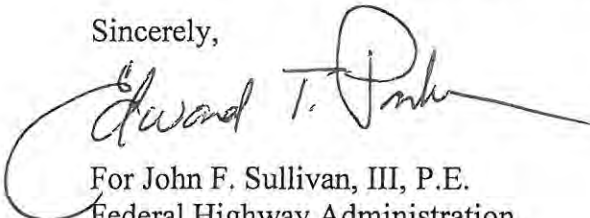
In the evaluation of alternatives, the Corps continues to believe that in regards to streams and wetlands, the Orange to Red to Green Alternative appears to be a less environmentally damaging alternative and should be included as an alternative to be analyzed in the Draft Environmental Impact Statement (DEIS). Please note that, at this time, the Corps is not able to make a decision on the practicability of any of the alternatives. That decision will not be made until after the Corps has issued a public notice (following publication of the DEIS) seeking comments from the public, Federal, State and local agencies, including any consolidated state viewpoint or written position of the Governor, on the Detailed Study Alternatives and the factors that the Corps considers in our public interest decision. The decision will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest, and will reflect the national concern for both protection and utilization of important resources. Factors, including the cumulative effects thereof, which may be relevant to the proposal that will be considered include, but are not necessarily limited to community cohesion, relocations, impacts to existing and proposed business centers, recreation, including parks, historic properties (Section 4(f) issues), water supply and conservation, ecological conservation, economics, aesthetics, general environmental concerns, wetlands, fish and wildlife values, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. The Corps evaluation process for this project is consistent with the review for all other transportation projects in North Carolina, and with Section 404 of the Clean Water Act, including the 404 (b)(1) Guidelines (40 CFR Part 230).

Therefore, in consideration of the concerns above, the Corps and the FHWA believe the project can no longer move forward with the Project Advancement Plan and satisfy all Federal environmental requirements in a concurrent manner. As a result, the FHWA will withdraw the Notice of Intent (NOI), meaning we will no longer continue to develop the environmental impact statement and federally fund the project. Our withdrawal does not prevent the project from being reinitiated in the future. NCDOT or other applicant/sponsors may restart the project at any time by requesting a new NOI with sufficient support that all constraints have been relieved to allow compliance with NEPA.

Should you have any questions, please call George Hoops of the FHWA at (919) 747-7001 or Eric Alsmeyer of the Corps at (919) 554-4884, extension 23.

Sincerely,

Sincerely,



For John F. Sullivan, III, P.E.
Federal Highway Administration
Division Administrator



Steven A. Baker
Colonel, U. S. Army
District Commander

Copies Furnished:

Mr. David Joyner
Executive Director
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Mr. Eric Midkiff
North Carolina Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27699-1548

Mr. Mitch Vakerics
Office of Congresswoman Renee Ellmers
1533 Longworth HOB
Washington, DC 20515

Mr. Rob Ridings
Division of Water Quality
Transportation Permitting Unit
North Carolina Department of
Environment and Natural Resources
1650 Mail Service Center
Raleigh, NC 27699-1650

Mr. Chris Lukasina
Capital Area Metropolitan Planning
Organization (CAMPO)
127 West Hargett Street, Ste. 800
Raleigh, NC 27601

Mr. Heinz Mueller
Chief, NEPA Program Office
Office of Policy and Management
US Environmental Protection Agency
61 Forsythe St., SW
Atlanta, GA 30303

Mr. Gary Jordan
US Fish and Wildlife Service
PO Box 33726
Raleigh, NC 27636

Mr. Travis W. Wilson
Eastern Region Highway Project Coordinator
Habitat Conservation Program
NC Wildlife Resources Commission
1718 Hwy 56 West
Creedmoor, NC 27522

Mr. Peter Sandbeck
NC State Historic Preservation Office
4619 Mail Service Center
Raleigh, NC 27699-4619



North Carolina General Assembly
House of Representatives

PAUL STAM
SPEAKER PRO TEMPORE
OFFICE ADDRESS: 612 LEGISLATIVE OFFICE BUILDING
300 N. SALISBURY STREET
RALEIGH, NC 27603-5925
TELEPHONE: (919) 733-2962
(919) 754-3175 FAX
EMAIL: paul.stam@ncleg.net
DISTRICT: SOUTHERN WAKE COUNTY (37)

COMMITTEES:

APPROPRIATIONS, SUB. EDUCATION
EDUCATION
ELECTION LAW
FINANCE
JUDICIARY, SUB. B
REGULATORY REFORM
RULES

October 23, 2013

Secretary Anthony Tata
NC Department of Transportation
1501 Mail Service Center
Raleigh, NC 27699-1501

Re: Southeast Extension/540/Orange Route/Purple Route

Dear Mr. Secretary:

This is to provide comments for the official record of the Southeast Extension project for the completion of the 540 Outer Loop. I understand there are seventeen alternative route alignments being considered to determine the appropriate corridor for the 540 segment between Holly Springs and Knightdale.

A number of these alternative routes continue to cause significant stress to residents and business owners who may be impacted. I realize that the study of some alternatives is required by federal law and that commitments to fund the completion of the Outer Loop will be withdrawn without a thorough environmental assessment of identified potential routes.

Based on my study of all of the potential routes it is my considered opinion that the only feasible corridor would be the "orange corridor". This route has been protected from development since the mid-1990s and would result in the fewest number of dislocations of residents and businesses with significantly lower cost.

In order for this process to have the least negative impact on the affected property owners, it is my strong request that the study of the purple route be completed immediately. Property owners are in limbo until a final corridor is selected and they are entitled to relief from this uncertainty as quickly as possible. I would appreciate your full attention to the need for this study to be completed rapidly.

Thank you for your attention to my concerns. Please include this in your public comments.

Sincerely,


Rep. Paul Stam





North Carolina General Assembly
House of Representatives
State Legislative Building
Raleigh 27601-1096

November 12, 2013

Mr. Eric Midkiff, P.E.
NC Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Re: Complete 540 Project

Mr. Midkiff,

Please accept this letter as my official response in regards to the comment form due November 15, 2013 in regards to the proposed routes for the complete 540 project. Currently serving my third term in a district that includes parts of Garner and eastern Wake County, it is not an exaggeration to say that this project has been the single biggest source of constituent contact I have had in five years. I have literally received hundreds, if not a thousand emails and phone contacts in regard to this proposal. To the best of my recollection, not one person has been in favor of the Red Route proposal.

I have also been able to attend public meetings, both back in 2009, and again in October of this year. I thought the staff of DOT did an excellent job with the presentations and answering questions. At those meetings, I attempted to speak with citizens to find out which proposals they supported or opposed. It is clear to me that the full orange route (dropping purple, blue, and red) is the way most of the people that have contacted me have felt. On the eastern portion, I have gotten little feedback on the green vs. brown vs. tan alternatives. I also live near this area and want to be sure not to base my comments based only on my opinion. It appears to me that DOT should weigh the impact of the routes on the Sheriff's training center and the wastewater treatment much higher than the route that would impact the development planned by the County and City. After all, this route was on the map before the City and County purchased the site.

Finally, it is my understanding that the Red Route was originally proposed due to the potential environmental impact of the Orange Route. As I am sure you are aware, a similar environmental issue was present during the design and construction of the Clayton bypass. Since completion, I believe the environmental mitigation of that project has been deemed successful. It is my sincere hope, that similar mitigations will allow construction of the original Orange Route, so not to greatly impact the residents of this district. I hope the department will expend whatever resources are necessary in an expedited manner, so that we can get this dreaded Red Route removed from consideration once and for all.

With kindest personal regards, I am

Very truly yours,

A handwritten signature in black ink, appearing to read "Darren G. Jackson".

Representative Darren G. Jackson,
North Carolina House of Representatives, 39th District
Wake County Legislative Delegation

DGJ: asm



53091



RECEIVED

NOV 15 2013

N.C. DEPT. OF TRANSPORTATION
OFFICE OF THE SECRETARY

North Carolina General Assembly
House of Representatives

REPRESENTATIVE NELSON DOLLAR
36TH DISTRICT

OFFICE ADDRESS: SUITE 307B LEGISLATIVE OFFICE BUILDING
300 N. SALISBURY STREET
RALEIGH, NC 27603-5925

TELEPHONE: (919) 715-0795
(919) 754-3171 FAX

EMAIL: NELSON.DOLLAR@NCLEG.NET

DISTRICT ADDRESS: POST OFFICE BOX 1369
CARY, NORTH CAROLINA 27512

COMMITTEES:

- APPROPRIATIONS, SENIOR CHAIR
- FINANCE, VICE-CHAIR
- HEALTH AND HUMAN SERVICES, VICE-CHAIR
- COMMERCE AND JOB DEVELOPMENT
- INSURANCE
- TRANSPORTATION
- PUBLIC UTILITIES
- REGULATORY REFORM
- UNC BOARD OF GOVERNORS NOMINATING COMMITTEE

November 12, 2013

Secretary Anthony Tata
NC Department of Transportation
1501 Mail Service Center
Raleigh, NC 27699-1501

Dear Secretary Tata:

As you know, NC 540 is the largest transportation project ever attempted by the State of North Carolina, with a price tag in excess of \$2 billion. Approximately half of the project has been completed as a toll road between the Research Triangle Park and Holly Springs; however, the other half of the project remains to be built linking I-40 east of Garner to the current terminus at NC 55. We support the "Orange route" as the only suitable corridor for completion of this project.

The corridor for the "southern expressway" has been protected for over twenty years with land owners and municipalities planning and building in coordination with the designated "Orange route." As a result, numerous subdivisions, schools, shopping areas, and parks have been built with the protected 540 corridor in mind. Our constituents in Southern Wake County are practically unanimous in their strong opposition to the construction of any route other than the Orange route.

Alternative routes including the Red, Blue, Purple and Lilac would each dramatically impact the lives of hundreds of families and homeowners. Many local businesses would be harmed or placed out of business, jobs would be lost, as well as, the loss of prime business development property. Some routes would also adversely affect parks and properties of historic significance. The tax bases of the Towns of Garner, Holly Spring and Fuquay Varina would be negatively impacted. In short, the human impacts would be considerable, long lasting, and for far too many of our residents, simply devastating.



Secretary Anthony Tata
Page 2

We believe any potential environmental concerns along the orange route can be mitigated as they have on similar projects across the State.

We appreciate the many events NCDOT has hosted to take in public input; having attended several events, we know your staff has heard loud and clear the voice of the people on this issue. It is our hope that this process can be concluded as rapidly as possible, given the significant impacts being experienced by home and business owners in the study area.

We thank you in advance for including these comments in the public record.

Sincerely,



Rep. Nelson Dollar



Sen. Tamara Barringer





November 12, 2013



Eric Midkiff, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Re: Complete I540 Southeast Extension
Town of Holly Springs Comments

Dear Eric,

Thank you for meeting with us several times and for providing information that we have requested on this project. We have attached a spreadsheet of the Town of Holly Springs' comments for the alternative alignments that are presently out for public comment. These comments support the position that we have previously expressed in our meetings and conversations with you, and in our Town Council's recent resolution as well – that Holly Springs supports the orange (originally protected) corridor.

Regards,

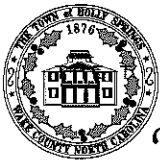
Stephanie L. Sudano, PE
Director of Engineering

SLS/dra

cc: Mayor Sears
Chuck Simmons, Town Manager
Gina Clapp, AICP, Director of Planning & Zoning
Correspondence 13660

P.O. Box 8
128 S. Main Street
Holly Springs, N.C. 27540
www.hollyspringsnc.us

(919) 552-6221



TOWN OF

Holly Springs

Resolution No.: 13-42

Date Adopted: Oct. 1, 2013

RESOLUTION STATING THE TOWN OF HOLLY SPRINGS TOWN COUNCIL'S SUPPORT REGARDING THE ALIGNMENT OF THE SOUTH EAST EXTENSION OF I-540

WHEREAS, the Holly Springs Town Council is expressing its fervent support for the construction of the I-540 Triangle Expressway Southeast Extension; and

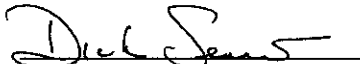
WHEREAS, the proposed I-540 Triangle Expressway Southeast Extension has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions of the Town of Holly Springs and other local governments of southwestern Wake County; and


WHEREAS, the Town of Holly Springs historically has utilized the protected I-540 corridor proposed in earlier designs to plan for both existing and future development in Town; and

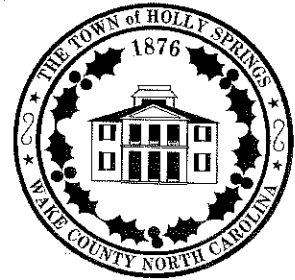
NOW THEREFORE BE IT RESOLVED that the Town Council of the Town of Holly Springs hereby expresses its support of the original protected corridor design as illustrated in orange on N.C. Transit Authority maps for the construction of the I-540 Triangle Expressway Southeast Extension; and

Adopted this, the 1st day of October, 2013.

ATTEST:


Dick Sears, Mayor


 Joni Powell, MMC, NCCMC Town Clerk
 Linda R. Harper, MMC, NCCMC Deputy Town Clerk



Office of the Mayor

128 S. Main Street • P.O. Box 8 • Holly Springs, NC 27540 • (919) 557-3901 • (919) 552-0654 fax
dick.sears@hollyspringsnc.us • www.hollyspringsnc.us

	Comment
ORANGE CORRIDOR	
1	Orange corridor is a much more direct routh for commuters travelling across Wake County from west to east or visa versa.
2.	Corridor has been preserved by the Town since 1997 NCDOT request for Corridor Protection....the corridor protection guidelines have been carefully and stringently followed by the Town to make expense and impact of acquisition and construction less expensive.
3.	Some of the ROW for the facility has already been acquired, and we believe this is of great benefit.
4.	This corridor is consistent with all of the Town's long range plans developed over the past 15 years (since corridor protection began), including: Comprehensive Plan Vision 2010, Long Range Water Master Plan, Long Range Sewer Master Plan, Long Range Reclaimed Master Plan, Holly Springs Pedestrian Transportation Plan, Long Range Greenway Plan, Long Range Bicycle Plan
5.	Town wants to insure that Kildaire Farm Road, which is a major access road, ties into interchange or nearby to preserve full access northward
6	Town has carefully planned and minimized the needed greenway/pedestrian/bike and vehicular connections through this corridor by carefully guiding development of adjacent lands. All of the infrastructure (transportation and other) that has been planned and installed to support these minimal number of crossings would no longer function as designed and infill of the preserved corridor would likely be awkward to develop. This careful planning will reduce construction costs and environmental impacts along this corridor.
7	This corridor and the proposed interchange at Kildaire Farm Road is consistent with the Town's long range planning efforts and locations for activity nodes, development densities, roadway design, and infrastructure to meet the demands of a highway interchange and location. Because Holly Springs is a relatively small town with limited growth potential due to the limiting feature of Progress Energy Lands to the west, the impact of the other corridors on the Town as a whole is proportionally very great. The impact of the orange corridor has been well planned to complement the Town as a whole.
8	Development of the roadway in this corridor complements the past planning and investment (and proposed too) by the Town in this area of water , sewer, and transportation infrastructures
9	The Town believes this corridor alignment has the least environmental impact, based upon our knowledge of the Town; the crossing of Middle Creek is essentially perpendicular which is desired as this is a major stream with a very large drainage basin.
10	This corridor would not impact or require the removal and/or displacement of many homes (maybe none) in Holly Springs
11	Town plans have long centered around this corridor, and the Town has directed development in a manner to make the construction of this through Town minimally invasive to our community. This has been achieved by planning transportation connections to complement I540 at this location and to link property on both sides with connections.
12	This corridor essential runs between Apex and Holly Springs - almost along the municipal boundaries - we see this as a plus as it does not divide a community like at least one of the other proposed corridors.
13	The long range transportation plans - developed carefully and collaboratively by the Town, the county, the MPO, NCDOT, and other municipalities over the past 15 years - have guided development and row dedication of roads to support the orange corridor.
14	This corridor is under corridor protection and development approvals and building permit requests continue to be handled under the corridor protection act, increasing the desirability of this corridor as it is protected
15	This corridor has greater ridership projections

Comment	
ORANGE CORRIDOR	
16	This corridor does not bisect any parks
17	The orange corridor is more direct of a route for people traversing through Wake County from west to east.
18	The orange corridor provides for a much better and more direct interchange further east at I40.
18	Construction cost for this corridor is less than the purple corridor, as it is shorter.

	Comment
PURPLE CORRIDOR	
1	Will impact/eliminate Town parkland south of Sunset Oaks Subdivision, plus planned walking trails and other passive recreation along Middle Creek which is a major water feature and environmental treasure in south Wake County. The park will be eligible for partf funding/classification. The park and trails are covered in numerous Town master plans over the past 10 to 15 years.
2	The long range transportation plans for both the municipality and the county have guided development and row dedication of roads and at intersections to support the current orange alignment - NOT needed intersection road improvements for the orange route.
3	Conflicts with ALL of the Town's long range plans developed over the past 15 years (since corridor protection began), including: Comprehensive Plan Vision 2010, Long Range Water Master Plan, Long Range Sewer Master Plan, Long Range Reclaimed Master Plan, Holly Springs Pedestrian Transportation Plan, Long Range Greenway Plan, Long Range Bicycle Plan, Long Range Park Plans.
4	This corridor would require relocation/elimination of many homes and the possible division of many neighborhoods; in Holly Springs' jurisdiction only is Sunset Oaks ; In addition, there are many other homes not in subdivisions that would be impacted. This is a very negative consequence of this alignment especially when the orange corridor has been protected from development and impacts less homes.
5	The long range transportation plans and land use plans - developed carefully and collaboratively by the Town, the county, the MPO, NCDOT, and other municipalities over the past 15 years - have guided development that would be supported by orange corridor - not the purple corridor
6	This corridor, while on the books, both delays development of properties (this is problematic especially in the recent and continuing unsteady economic climate) AND delays the ability of individuals who happen to own homes in the corridor and need to sell their homes; we would like to encourage quick and expeditious elimination of alternatives in order to alleviate these two scenarios.
7	This alignment would severely impact both vehicular (including bus) and pedestrian transportation to 3 public schools that some Holly Springs children attend in south Cary. The main transportation route to these schools is down Optimist Farm Road which is being bisected by this route.
6	Town has worked hard to created connectivity between neighborhoods - vehicular, bicycle, and pedestrian - through planning and infrastructure construction; this corridor negatively impacts one of the significant neighborhoods that has been planned and developed carefully to create the neighborhood atmosphere that is the Town's goal.
9	Parallels Middle Creek closely, and crosses Middle Creek a total of 3 times. This is a very important protected stream/water feature with a large watershed; paralleling streams has very negative environmental consequences and may be impossible to get a permit.
10	This corridor is not under corridor protection and development approvals and building permits continue to be processed, increasing the undesirability of this corridor as well as the resulting impact of construction in this corridor
11	Plan as shown does not provide transportation connectivity along Optimist Farm Road which is a major transportation route in an area of SW Wake county that is limited in its primary route connectivity.
12	Divides the town and makes provision of trash, police, fire, medical, and other services more difficult and expensive.

	Comment
PURPLE CORRIDOR	
14	Purple Corridor has less ridership projected.
15	This alignment is brand new and there has been no preservation or buffer protection for the neighborhoods that have been developed in the area of the corridor. Neighborhoods nearby the orange corridor have been required to preserve buffers outside the corridor.

53094



**Planning, Development
& Inspections**

TEL (PLANNING) 919 856 6310
TEL (INSPECTIONS) 919 856 6222

A Division of Community Services
P.O. Box 550 • Raleigh, NC 27602
www.wakegov.com

November 12, 2013

Mr. Tony Tata, Secretary
NC Department of Transportation
1501 Mail Service Center
Raleigh, NC 27699-1501

RECEIVED

NOV 18 2013

N.C. DEPT. OF TRANSPORTATION
OFFICE OF THE SECRETARY

RE: I-540 Triangle Expressway Southeast Extension

Dear Secretary Tata,

On behalf of the Wake County Planning, Development and Inspections Division, I want to take this opportunity to express our position on the corridors being considered for the I-540 Triangle Expressway Southeast Extension. Our position mirrors the action taken by the Wake County Board of Commissioners in their October 21, 2013 Resolution whereby support is expressed for the protected "orange" corridor west of I-40 and the "green" corridor east of I-40.

For many years now, Wake County Planning, in collaboration with our municipal partners, has established short and long range urban service areas around the protected 'orange' corridor. These urban service areas are captured in the Wake County Land Use Plan that guides growth as it relates to residential and non-residential development. To be specific, the protected "orange" corridor has played a key role in identifying areas for non-residential development in what are called Activity Centers. These Activity Centers have been designated in key locations along the protected 'orange' corridor and in some instances are already developing according to plan.

The "green" corridor east of I-40, although not protected but on planning maps for some time now, has also been used by the County to make key planning decisions for both existing and future development.

Please take this information into consideration when evaluating the corridors for the new expressway. Should you have any questions, please don't hesitate to contact me. I can be reached at 919-856-6678 or tmaloney@wakegov.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Timothy W. Maloney".

Timothy W. Maloney, RLA, ASLA
Director

cc: Richard W. Hancock, NCDOT Project Development & Environmental Analysis



53010

**Parks, Recreation &
Open Space**

TEL 919 664 7967
FAX 919 856 6181

Wake County Office Building 10th Floor
337 S. Salisbury Street
PO Box 550, Suite 1000
Raleigh, NC 27602
<http://www.wakegov.com/county/parks/default.htm>

November 12, 2013

RECEIVED

NOV 19 2013

N.C. DEPT. OF TRANSPORTATION
OFFICE OF THE SECRETARY

Mr. Tony Tata
North Carolina Department of Transportation
1501 Mail Service Center
Raleigh, North Carolina 27699-1501

Dear Secretary Tata;

On behalf of the Wake County Division of Parks, Recreation and Open Space, I'd like to take this opportunity to provide input on the proposed routes for the Triangle Expressway's Southeast Extension, specifically to support the protected "orange" corridor west of I-40 and the "green" corridor east of I-40.

Since 2000, the citizens of Wake County have approved \$91 million on bond referenda that has gone to purchase property that is devoted to the 1. preservation of natural resources and habitat; 2. managed production of resources (forest and farm land); 3. outdoor recreation; 4. preservation of historic and cultural property; 5. protection of scenic landscapes; and 6. protection of public health, safety and welfare, including the protection of water quality.

In 2003, the Wake County Board of Commissioners formally identified priority stream corridors to protect valuable water resources. In 2008, the Board of Commissioners revisited this issue and at the time reaffirmed the County's intent to protect 11 priority stream corridors. More recently, on October 21, 2013, the Board of Commissioners unanimously passed a resolution endorsing the protected corridor (Orange route) and the planned corridor (Green route) as the preferred choice for the development and construction of the Triangle Expressway Southeast Extension.

Of Wake County's 11 priority stream corridors, two corridors would be negatively impacted by the Purple, Blue and Red alternative routes.

- Middle Creek would be impacted twice if a route is selected using a combination of the Purple and Blue alternatives.
- Middle Creek would be impacted once if a route is selected using only the Blue alternative.

- The priority stream corridor section of Swift Creek (between Lake Wheeler and Lake Benson) would be impacted by the Red alternative.
- The currently protected corridor (Orange route) does not cross Swift Creek in an area identified by Wake County as a priority stream corridor, nor does the Orange route impact Middle Creek.

An additional significant concern that Wake County would like to address is the impact the Blue alternative will have on the County's Southeast Wake County Park. The County has been working to develop this park for the past decade and it is one of three planned parks (in combination with the eight existing parks) that the County is creating to meet the long term needs of the community.

Within the Southeast County Park lie the Middle Creek Aquatic Habitat and the scenic bluffs along Middle Creek that rise 90 feet above the creek, a Natural Heritage site of local significance. Wake County has already invested over \$2 million to acquire 258 acres of land to support this park plan. Additionally, Wake County has also placed Clean Water Management Trust Fund easements over portions of this land. The proposed Blue alternative would impact the proposed park site and possibly result in Wake County abandoning its plans to develop this park.

It is our sincere desire that the Triangle Expressway Southeast Extension remain in the protected corridor (Orange route).

If you would like to receive additional information or if you have any questions, please feel free to contact me via telephone at (919) 856-6677 or via email at csnow@wakegov.com.

Many thanks for your consideration.

Sincerely,



Christopher Snow
Director,
Wake County Parks, Recreation, and Open Space

cc: Richard W. Hancock, NCDOT Project Development & Environmental Analysis

APPENDIX D
Section 6002 Coordination Plan
(Including Notice of Intent)

**Final Section 6002 Coordination Plan
for the Triangle Expressway Southeast Extension Project
(STIP Projects R-2721, R-2828, & R-2829)**

COORDINATION PLAN

1. Purpose of Plan.

1.1. Section 6002 Compliance. This plan is intended to satisfy the requirement for a Coordination Plan under Section 6002 of SAFETEA-LU (23 U.S.C § 139) for the Triangle Expressway Southeast Extension, also known as the Southern and Eastern Wake Expressway, project (North Carolina Department of Transportation [NCDOT] State Transportation Improvement Program [STIP] Projects R-2721, R-2828, and R-2829).

1.2. Integration of NEPA and Section 404 Requirements. The process established in this plan is intended to ensure that the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended, and Section 404 of the Clean Water Act can be satisfied as part of a single process. Specifically, this plan is intended ensure that, to the maximum extent practicable,

- there is regular communication and collaborative discussion among all agencies that have information, experience, and/or expertise relevant to issues considered in Section 404 permitting;
- the North Carolina Department of Environment and Natural Resources (NCDENR) can issue Section 401, Riparian Buffer Authorizations, Isolated Wetland Permits, and State Stormwater Permits based on information developed as part of the NEPA process; and
- the US Army Corps of Engineers (USACE) can issue a Section 404 permit for the project promptly following the end of the NEPA process, without the need for supplemental NEPA studies,
- so that any other required permits or approvals can be obtained without unexpected issues or delays.

1.3. Agency Communication. This plan establishes a framework for regular communication among all of the agencies involved in the environmental review process. This communication will include regular agency coordination meetings. These meetings will provide a forum for open discussion and dialogue among agencies. Meetings with one or more individual agencies also may occur as part of this process. When possible, all Participating Agencies will be informed of a smaller meeting to ensure all appropriate parties are included and will be updated after the meeting.

2. Project Initiation

- 2.1. Project Initiation Notice. The environmental review process for a project is initiated when the North Carolina Turnpike Authority (NCTA) submits a project initiation notice to the Federal Highway Administration (FHWA). This notice was provided in the form of a letter from NCTA to FHWA on November 20, 2009. A draft Notice of Intent was included with this notice.
- 2.2. Notice of Intent. A Notice of Intent to prepare an Environmental Impact Statement (EIS) for this project was published in the Federal Register on November 30, 2009. The project initiation notice and the Notice of Intent are attached as Exhibit 1.

3. Project Schedule

- 3.1. Schedule. The NCTA will prepare a project schedule showing projected dates for completing all environmental studies and permitting. A draft schedule for the Southern and Eastern Wake Expressway project is shown in Table 1.

Table 1: Draft Project Schedule

Notice of Intent	November 2009
Identify Detailed Study Alternatives	Q1 2011
DEIS	Q1 2012
Identify Preferred Alternative	Q2 2012
FEIS	Q1 2013
ROD	Q4 2013
Permit Application(s)	Q1 2014*
Let Contract/Begin Construction	Q2 2014*

*Contingent upon funding.

- 3.2. Agency Consultation. The schedule will be shared with the agencies and discussed at a Turnpike Environmental Agency Coordination (TEAC) meeting. Agency comments will be considered and the schedule may be revised as appropriate.
 - 3.3. Updating Schedules. The project schedule may be revised from time to time by the lead agencies during the environmental review process. Schedule changes will be communicated to all Participating and Cooperating Agencies and the public. Under the statute, the schedule may be extended by the lead agencies for good cause, and may be shortened only with the consent of Cooperating Agencies.
- ## 4. Agency Roles
- 4.1. Lead Federal Agency. FHWA will be the lead Federal agency. As lead Federal agency in the Section 6002 process, FHWA is responsible for making certain decisions as

specified in Section 6002. In addition, FHWA has an overall responsibility for facilitating the expeditious completion of the environmental review process.

- 4.2. Lead State Agency. NCTA, a division of the NCDOT, will be the Lead State Agency, and thus will share with FHWA the responsibilities of the “Lead Agency” under the process defined in Section 6002.
- 4.3. Participating Agencies. NCTA will issue letters inviting Federal and non-Federal agencies to serve as Participating Agencies for each project developed under this plan. Participating Agencies include any Federal, State, or local agencies that may have an interest in the project.
 - 4.3.1. Invitation List. Invitations were sent to Federal and non-Federal agencies that, in the judgment of FHWA and NCTA, may have an interest in the project. Table 2 lists agencies identified as having an interest in the Southern and Eastern Wake Expressway project. With the exception of the NC Department of Environment and Natural Resources (NCDENR), Division of Marine Fisheries, all agencies have agreed to serve as participating agencies for this project. Instead, NCDENR, Division of Marine Fisheries indicated that it will defer to NCDENR, Division of Water Quality. Invitation letters and agency responses thereto are included as Exhibit 2 to this Plan.

Table 2: Agency Roles

	Cooperating Agency	Participating Agency
US Army Corps of Engineers	✓	✓
US Environmental Protection Agency		✓
US Fish and Wildlife Service		✓
NC Department of Cultural Resources – Historic Preservation Office		✓
NC Department of Environment & Natural Resources		✓
Division of Marine Fisheries		✓
Division of Water Quality		✓
Wildlife Resources Commission		✓
Capital Area Metropolitan Planning Organization		✓

- 4.3.2. Deadline. Invitation letters specify a 30-day deadline for agencies to respond to the invitation.
- 4.3.3. Federal Invitees. A Federal agency that is invited to be a Participating Agency will be presumed to have accepted the invitation, unless the agency informs NCTA or FHWA in writing, by the deadline, that it: “(A) has no jurisdiction or

authority with respect to the project; (B) has no expertise or information relevant to the project; and (C) does not intend to submit comments on the project.”

- 4.3.4. Non-Federal Invitees. Non-Federal agencies are not required to accept designation; they become Participating Agencies only if they affirmatively accept the invitation. If a non-Federal agency declines or does not respond to the invitation, the agency will not be considered a Participating Agency.
 - 4.3.5. No Implied Support. Designation as a Participating Agency shall not imply that the Participating Agency supports a proposed project; or has any jurisdiction over, or special expertise with respect to evaluation of, the project.
 - 4.3.6. No Effect on Other Laws. Nothing in Section 6002, or in this Coordination Plan, preempts or interferes with any power, jurisdiction, responsibility, or authority that a Federal, State, or local government agency, metropolitan planning organization, Indian tribe, or project sponsor has with respect to carrying out a project or any other provisions of law applicable to projects, plans, or programs.
- 4.4. Cooperating Agencies. A Participating Agency also may be designated as a Cooperating Agency. The responsibilities of a “Cooperating Agency” are defined in the CEQ regulations and are unchanged by SAFETEA-LU. In general, designation as a Cooperating Agency signifies a somewhat higher level of involvement and responsibility in the environmental review process. Federal, State, or local government agencies can be designated as Cooperating Agencies. As shown in Table 2, the USACE was invited to become a Cooperating Agency for this project. It is recognized that due to other program commitments, Cooperating Agencies will not be responsible for funding or writing portions of the NEPA document.
- 4.5. Local Government Coordination. The Capital Area Metropolitan Planning Organization (CAMPO) will serve as the official local representative for the project. CAMPO staff will be provided the same opportunities for input as other Participating Agencies. Local municipalities will be kept apprised of project developments through their involvement with CAMPO. The following municipalities are represented by CAMPO: City of Raleigh, City of Creedmoor, Town of Angier, Town of Apex, Town of Butner, Town of Cary, Town of Clayton, Town of Franklinton, Town of Fuquay-Varina, Town of Garner, Town of Holly Springs, Town of Knightdale, Town of Morrisville, Town of Rolesville, Town of Wake Forest, Town of Wendell, Town of Youngsville, Town of Zebulon, Wake County, and portions of Franklin, Granville, Harnett, and Johnston Counties.
- 4.5.1. CAMPO Technical Coordinating Committee (TCC). A NCTA staff member will represent NCTA at CAMPO Technical Coordinating Committee (TCC) meetings.
 - 4.5.2. Meeting Summaries. Summaries of monthly TEAC meetings will be provided to CAMPO members.

5. Turnpike-Environmental Agency Coordination (TEAC) Meetings

- 5.1. TEAC Meetings. The principal method for agency coordination on NCTA projects will be TEAC meetings, which will be hosted by NCTA. These meetings will be used as a forum for discussing all NCTA projects, including those being studied under other procedures as well as those being studied under Section 6002. All TEAC meetings will be held at the NCTA office in Raleigh, unless otherwise specified in the meeting invitation.
- 5.2. Meeting Dates. The schedule for the TEAC meetings will be determined by FHWA and NCTA after consultation with NCDOT and the Participating Agencies. This schedule will be established, to the extent possible, for 12-month periods. The schedule will be coordinated with NCDOT interagency meetings to avoid or minimize conflicts and minimize travel. Changes to the schedule will be provided to the Participating Agencies as far in advance as possible. Each year, once available, a new schedule will be distributed.
- 5.3. Meeting Agenda and Objectives. The agenda for each TEAC meeting will be circulated via e-mail to all Participating Agencies. The agenda will identify (a) any specific issues that NCTA would like to resolve at the meeting and (b) any specific issues on which NCTA is seeking comments from the Participating Agencies at the meeting.
- 5.4. Meeting Materials. NCTA will post the agenda and materials for each TEAC meeting on a secure web site accessible to all Participating Agencies. Guidelines for circulating meeting materials are provided below.
 - 5.4.1. Secure Web Site. Meeting materials will be made available to Participating Agencies via NCTA's Constructware Site (<http://ncturnpike.constructware.com>).
 - 5.4.2. Timing of Circulation. To the greatest extent possible, NCTA will post the agenda and materials at least two weeks in advance of the meeting. In some cases, materials will be provided less than two weeks in advance, or will be circulated in the TEAC meeting itself. NCTA will not seek to resolve issues or obtain Participating Agency comments on materials that the Participating Agencies received less than two weeks in advance of the meeting.
 - 5.4.3. Availability of Paper Copies. In addition to posting documents on the TEAC web site, NCTA will make paper copies of meeting materials available to all attendees at each meeting.
 - 5.4.4. Large Documents. Documents that would be difficult or time-consuming for agencies to reproduce (e.g., large maps, lengthy bound documents with color, fold-out pages, etc.) will be made available to Participating Agencies in hard-copy format at a meeting (or by mail two weeks or more in advance) for discussion at a subsequent meeting. NCTA will consult with the Participating Agencies to determine when this type of distribution is appropriate.

- 5.5. Meeting Summaries. After each meeting, the NCTA will prepare a meeting summary. The summary will list the attendees, topics discussed, unresolved issues, and action items. The meeting summary will be posted in draft form to the TEAC web site for review and comment two weeks in advance of the next meeting. Meetings may be recorded on audiotape; the recording may be used in preparing the meeting summaries. The meeting summaries will be included in the administrative record.
- 5.6. Attendees. Participating Agencies (including Cooperating Agencies) will designate primary contacts for each NCTA project. These primary contacts will regularly attend TEAC meetings. Attendance may vary from month to month depending on the issues being discussed. Primary contacts for the Southern and Eastern Wake Expressway project are listed in Table 3.

Table 3: Primary Agency Contacts

US Army Corps of Engineers	Eric Alsmeyer
US Environmental Protection Agency	Chris Militscher
US Fish and Wildlife Service	Gary Jordan
NC Department of Cultural Resources – Historic Preservation Office	Peter Sandbeck
NC Department of Environment & Natural Resources	--
Division of Marine Fisheries	Kevin Hart
Division of Water Quality	Brian Wrenn
Wildlife Resources Commission	Travis Wilson
Capital Area Metropolitan Planning Organization	Chris Lukasina

6. Identification and Resolution of Project Issues

- 6.1. Constraint Mapping and Environmental Data. As early as practicable in project development, NCTA will provide FHWA and the Participating Agencies with mapping that shows key environmental resources, communities, topographic conditions, and other constraints in the project area. This mapping also will identify potential conceptual alternatives for the project, to the extent possible. (An “alternative” at this stage will generally be defined as a corridor.) The mapping may be accompanied by other supporting materials. This mapping may be presented to the Participating Agencies over a series of TEAC meetings and/or field meetings.
- 6.2. Field Visits and Agency Meetings. One or more field visits may be held with Participating Agencies to discuss constraints and obtain early input into development of alternatives. Attendees in field visits may be a sub-set of the Participating Agencies, depending on the issues to be discussed on the field visit; however, all Participating Agencies will be informed of upcoming meetings to determine interest in attending. The results of the field visit(s) will be discussed at a TEAC meeting, which will provide another opportunity for agency input.

- 6.3. General Project Issues. Throughout the process, Participating Agencies will be invited to identify issues that need to be considered by the Lead Agencies in preparing the environmental documentation and making project decisions, including issues that relate to the agencies' ability to approve (or comment favorably on the approval of) any necessary permits for the project. These issues will be referred to as "general project issues."
- 6.4. Issues of Concern. At any time in the process, a Participating Agency may identify an "issue of concern" as defined in SAFETEA-LU, which is an issue that in the agency's judgment could result in denial of a permit or substantial delay in issuing a permit.
- 6.4.1. Format. Participating agencies will be strongly encouraged to submit any "issues of concern" in writing to FHWA and NCTA on agency letterhead. Issues of concern submitted in other formats (e.g., e-mail) will also be considered.
- 6.4.2. Timing. Participating Agencies are required by statute to identify any issues of concern "as early as practicable" in the environmental review process, but this determination is based on information provided by the lead agencies. In some cases, it may not be practicable to identify an issue of concern until late in the process. The statute does not set a specific deadline for raising these issues.
- 6.4.3. Request for Comment. At any point in the process, NCTA may ask the Participating Agencies to state in writing whether there are any issues of concern. If such a request is made, NCTA will consult with the Participating Agencies before setting a deadline for a response. If agreed by the Lead and Participating Agencies, a deadline longer than 30 days could be established.
- 6.5. Monitoring and Updating. NCTA will maintain a record of both "general project issues" and "issues of concern" (if any) identified by the Participating Agencies. Separate meetings may be scheduled to resolve general project issues and/or any issues of concern. Additional issues may be added to the record based on new information or changed circumstances at any point in project development. This record will be posted to the TEAC web site.
- 6.6. Resolving General Project Issues. General project issues that are not resolved among the regular participants in the TEAC meetings can be elevated for consideration by the more senior officials within the relevant agencies. Any agency – Lead or Participating – can invoke the elevation process. The process is intended to be flexible, with specific procedures determined on a case-by-case basis depending on the nature of the issue. In general, the elevation process will involve the following steps:
- A Participating Agency requests elevation on an issue within the jurisdiction of that agency. This request can be made in a TEAC meeting or in a letter or e-mail to the other Participating Agencies and/or Lead Agencies.
 - The request for elevation is placed on the agenda for discussion at a subsequent TEAC meeting.

- If the issue is not resolved at that subsequent TEAC meeting, the issue is elevated to more senior officials within the agencies.
- Each Participating Agency is responsible for identifying the more senior official(s) within his or her agency who will be directly involved in the elevation.
- The Participating Agencies will work together to plan the logistics and timing of the elevation process, including any briefing materials or other documents that need to be prepared prior to a resolution of the issue.

6.7. Resolving Issues of Concern. Under the statute, NCTA or the Governor may request a meeting at any time to resolve issues of concern. If such a meeting is requested, FHWA will convene a meeting in accordance with SAFETEA-LU to resolve the specified issues of concern. If an issue of concern is not resolved within 30 days after such a meeting, a report must be submitted to Congress and to the heads of certain agencies, as provided in SAFETEA-LU. If such a meeting is not requested, FHWA and NCTA will seek to address and resolve the agencies' issues of concern as part of normal agency coordination during the environmental review process, and will resolve the issue before proceeding with subsequent studies. NCTA anticipates that this process will be invoked rarely.

7. Development of Purpose and Need

7.1. Preliminary Purpose and Need Statement with Supporting Information. Early in project development, NCTA will prepare a brief preliminary statement of purpose and need – generally no more than one page in length. The preliminary statement of purpose and need will be distributed to the agencies. This preliminary statement will be accompanied by supporting information to the extent that it is available. This information may include:

- GIS map of study area (with study area identified)
- Summary of local concerns that resulted in project addition to the local transportation plan(s)
- Traffic data related to project needs
- Justification for designation as NCTA project (based on funding needs, etc.)
- Description of how the action will address the need.

7.2. Discussion at TEAC Meeting. The preliminary purpose and need will be discussed with the Participating Agencies at a TEAC meeting. This will provide an early opportunity for agency input into the purpose and need statement for the project. In accordance with Section 6002, the comment period will be 30 days (unless otherwise agreed).

7.3. Determination of Purpose and Need Statement. The purpose and need statement will be refined, as appropriate, based on input from the Participating Agencies and the public. Refinement of the purpose and need statement may be a gradual, iterative process that occurs during the alternatives development and screening process. This process will include an opportunity for agencies and the public to comment on the purpose and need

statement as part of their review of the alternatives screening report. (See Part 8.4 and 8.5 below.) The purpose and need statement will be determined by the time of selection of detailed study alternatives.

8. Development and Screening of Alternatives

- 8.1. Conceptual Alternatives. An initial set of conceptual alternatives will be developed as early as practicable in the process. The conceptual alternatives may be developed concurrently with the preliminary purpose and need statement. These alternatives will be provided to the agencies along with the environmental constraint mapping that provides the basis for identifying issues of concern. (See Part 6.1 above.)
- 8.2. Alternatives Development. Through agency coordination and public involvement, NCTA will develop a range of preliminary alternatives for consideration. This range may extend beyond the initial set of conceptual alternatives. This effort is intended to be comprehensive and inclusive. NCTA will maintain a summary of all alternatives suggested by Participating Agencies and the public.
- 8.3. Alternatives Screening Report. The NCTA will prepare an alternatives screening report that presents the development of alternatives, the justification for eliminating alternatives from further consideration, and identifies alternatives proposed for detailed study. The alternatives screening report will be provided to the Participating Agencies and discussed in a TEAC meeting.
- 8.4. Opportunity for Public Input. A summary of the purpose and need and alternatives screening report will be made available for public review and comment. A public meeting (or meetings) may be held in the project area during the public comment period on this report. This comment period will serve as the public's opportunity for involvement in both developing the purpose and need and determining the range of alternatives to be considered in the EIS. A summary of public input will be provided to Participating Agencies. Agencies will be given notice of the public meeting and will be welcome to attend.
- 8.5. Opportunity for Agency Input. Participating Agencies will be given a 30-day period to provide additional comments on the alternatives screening report following distribution of the report summarizing public comments. Participating Agencies will not be asked to concur on the alternatives screening report. Participating Agencies will be asked to submit any significant objections to the alternatives screening report in writing to FHWA and NCTA on agency letterhead.
- 8.6. Lead Agency Decision. The Lead Agencies identify the detailed study alternatives based on the comments received from Participating Agencies and the public. In general, the NCTA and FHWA will seek to resolve any issues or concerns regarding the range of detailed study alternatives at this stage of the process. Any issues that are not resolved at this stage will need to be resolved prior to issuance of a Section 404 permit by the USACE. It is incumbent on all Participating Agencies to raise issues, concerns, or comments in a timely manner and to also provide suggestions for resolution.

9. Methodologies and Level of Detail for Alternatives Analysis

- 9.1. Proposed Methodologies. Early in project development, NCTA will prepare materials outlining proposed methodologies for analyzing alternatives. The materials will summarize the methodologies intended to be used for each substantive area within the EIS – noise, air, water resources, traffic issues, secondary and cumulative impacts, etc. Standard procedures will simply be referenced, where applicable. Any modifications to standard procedures will be identified and discussed in more depth.
- 9.2. Opportunity for Agency Input. The proposed methodologies that vary from standard procedures will be developed in consultation with agencies having relevant information, experience, or expertise. For example, the USACE and NCDENR and other Participating Agencies as appropriate will be consulted in developing the methodology for analyzing impacts to aquatic resources; the HPO will be consulted in developing methodologies for analyzing impacts to historic sites (including both architectural and archeological resources).
- 9.3. Ongoing Coordination. Methodologies for alternatives analysis may be refined throughout the environmental review process. The Lead Agencies will discuss adjustments, as appropriate, with Participating Agencies at TEAC meetings.
- 9.4. Level of Detail. The Lead Agencies, in consultation with the Participating Agencies, will determine the appropriate level of design detail for preliminary alternatives, for the detailed study alternatives, and for the preferred alternative.
- 9.4.1. Preliminary Alternatives. The level of design for the detailed study alternatives will be determined in consultation with the Participating Agencies. There is no presumption that any specific level of design is needed; this issue will be determined based on the information needed to allow informed decision-making.
- 9.4.2. Detailed Study Alternatives. In general, functional design will be used as the basis for comparing the impacts of the alternatives in the Draft EIS (known as the Detailed Study Alternatives) and will be used for developing the cost estimates presented in the Draft EIS. A higher level of design detail may be developed for Detailed Study Alternatives in some cases; this issue will be discussed with Participating Agencies in accordance with Sections 9.1, 9.2, and 9.3.
- 9.4.3. Bridging Decisions. The Lead Agencies, in consultation with USACE and NCDENR (and, if appropriate, other Participating Agencies) will determine bridge locations and approximate lengths for each of the detailed study alternatives. These issues also will be discussed in TEAC meetings with all Participating Agencies.
- 9.4.4. Preferred Alternative. The Preferred Alternative may be developed to a higher level of detail in the Final EIS, in accordance with procedures specified in FHWA/FTA guidance for the Section 6002 process. If phased construction is anticipated, the higher level of design detail may be developed for a portion of the Preferred Alternative. As allowed under Section 6002, the higher level of design

detail may be prepared for the purpose of developing mitigation measures and/or for complying with permitting requirements (e.g., Section 404 permitting).

9.5. Lead Agency Decision. If there are disagreements about methodology, or about the appropriate level of design detail, FHWA and NCTA will seek to resolve those disagreements with the agencies having the concern and those with relevant expertise – for example, the HPO on historic resource issues. After consultation, the Lead Agencies will determine the methodology to be used in the NEPA document. The basis for that decision will be documented in the project file and provided to the Participating Agencies.

10. Selection of Preferred Alternative/LEDPA

10.1. Recommended Alternative. The NCTA may choose to identify a Recommended Alternative in the Draft EIS. The Recommended Alternative is only a recommendation and is not a final decision.

10.2. Timing for Identifying Preferred Alternative. The following actions will be completed before NCTA selects a Preferred Alternative:

- the Draft EIS has been issued and submitted to the State Clearinghouse;
- a Section 404 Public Notice Request has been submitted to USACE, and the Public Notice has been issued by the USACE;
- a public hearing on the Draft EIS has been held, and the comment period on the Draft EIS has ended.

10.3. Process for Identifying Preferred Alternative. The process for identifying a preferred alternative will include:

- the NCTA will prepare an information package containing an impacts comparison matrix, responses to substantive comments on the Draft EIS that relate to selection of the Preferred Alternative, and other pertinent information;
- the NCTA will provide the information package to the Participating Agencies at least two weeks prior to the TEAC meeting at which the package will be discussed;
- the Participating Agencies will be given a 30-day period following the TEAC meeting to provide comments on the information package, and there will be a discussion of the alternatives comparison package at a TEAC meeting; and
- if requested by the Participating Agencies, the NCTA will arrange for a field review of the alternatives.

10.4. Opportunity for Agency Input. The NCTA will provide FHWA and all Participating Agencies with a copy of the preferred alternative information package. The report will be discussed at a TEAC meeting. Agencies will be provided with a 30-day period to

comment on the report after the meeting (in addition to the comment opportunities provided under Section 10.1 above). Agencies will not be asked to concur on the Preferred Alternative. Agencies will be asked to submit any significant objections in writing to FHWA and NCTA on agency letterhead.

10.5. Lead Agency Decision. The NCTA and FHWA will formally identify the Preferred Alternative after considering all comments received from Participating Agencies, including both written comments and comments provided on the Draft EIS and in TEAC meetings.

11. Avoidance, Minimization, Mitigation, and Enhancement

11.1. Integration into Project Development. Opportunities to avoid, minimize, and mitigate impacts, and to enhance the impacted resources, will be considered throughout the process, including during initial development of alternatives. As allowed under Section 6002, the Preferred Alternative may be developed to a higher level of detail for purposes of developing mitigation measures and meeting permitting requirements.

11.2. Required Compensatory Mitigation. The Lead Agencies will consult with USACE and NCDENR (and other Participating Agencies as appropriate) to determine the type, size, and location of required compensatory mitigation for impacts to waters of the United States.

11.2.1. On-Site Mitigation. The potential for on-site mitigation for impacts to waters of the United States will be considered in the Draft EIS for the detailed study alternatives. This discussion will typically include a discussion of conceptual on-site mitigation locations. The potential for on-site mitigation will be discussed in more detail in the Final EIS.

11.2.2. Off-Site/Ecosystem Enhancement Program (EEP). The NCTA will coordinate with the Ecosystem Enhancement Program (EEP) during project development and design regarding the use of credits from the EEP's off-site mitigation sites to meet mitigation requirements for impacts to waters of the United States. The EEP also may carry out on-site mitigation on behalf of NCTA.

12. Section 404/401 Permitting and Other Permits/Approvals

12.1. Early Coordination. NCTA will conduct early coordination with the Participating Agencies to identify applicable permitting requirements and to determine the analysis and documentation required to satisfy those requirements. See Parts 6 and 9 above. Permits that may be applicable to this project include:

- Section 404/401 Permits
- Successful completion of Section 7 consultation
- Successful completion of Section 106 process (and Section 4(f), if applicable)

- 12.2. Comment Opportunities. The environmental review process includes multiple opportunities for comment by Participating Agencies, as described below:
- 12.2.1. Participating Agencies may submit comments at the TEAC meetings and in other meetings or field visits held during the environmental review process. NCTA will prepare meeting summaries for all substantive meetings with Participating Agencies. The meeting summaries will document comments provided by Participating Agencies.
 - 12.2.2. Participating Agencies also will be invited to provide written comments at various points in the process as noted above. Agencies are encouraged to provide their written comments on agency letterhead; in particular, agencies are strongly encouraged to use letterhead when identifying issues of concern. However, all written comments submitted by agencies, including comments submitted by email, will be accepted and considered in decision-making.
 - 12.2.3. If a Participating Agency raises an issue of concern, the Lead Agencies will confer with that agency, and with other agencies as appropriate, to address those issues.
 - 12.2.4. Meeting summaries and written agency comments (regardless of format) be considered by the Lead Agencies in decision-making and will be included in the project files.
- 12.3. Jurisdictional Delineations. The NCTA will prepare the necessary documentation to obtain preliminary jurisdictional verification by the USACE (and, as appropriate, NCDENR) for all delineated wetlands and streams within a corridor along each of the detailed study alternatives (unless otherwise determined as part of the discussion of methodologies in accordance with Section 9 of this plan). These delineations will be used as the basis for comparing wetlands and stream impacts in the Draft EIS. The width of the corridor within which jurisdictional delineations are made will be determined through coordination with the Participating Agencies. Jurisdictional determination on Detailed Study Alternatives will be performed as preliminary, and once the Preferred Alternative is determined, the final jurisdictional determination will be conducted. NCTA will prepare the necessary documentation to obtain final jurisdictional verification (i.e., Rapanos jurisdictional determination forms) for the Preferred Alternative.
- 12.4. Pre-Application Consultation. The NCTA will engage in pre-application consultation, as appropriate, with each agency that is responsible for making a permit decision on the project.
- 12.5. Request for Public Notice. The NCTA will submit the Section 404 permit application to the USACE at the time the Draft EIS is issued. This application will typically be submitted prior to identification of a Preferred Alternative; therefore, it typically will not identify the specific alternative for which the permit is being requested. This submittal will enable the USACE to issue a public notice and to use the FHWA/NCTA

public hearing on the Draft EIS as the USACE's public hearing on the Section 404 application.

- 12.6. Public Hearing. The public hearing on the Draft EIS will also serve as the public hearing for the Section 404 permit application.
- 12.7. Refining the Permit Application. After selection of a Preferred Alternative, the NCTA will coordinate on a regular basis with the USACE, NCDENR, and other Participating Agencies as appropriate regarding all applicable permit applications for the project. This coordination may occur as part of the TEAC meetings and/or in separate meetings convened to discuss permitting issues. These meetings will include discussions of:
 - avoidance and minimization measures
 - compensatory mitigation
 - review of hydraulic design
 - review of stormwater management plans
 - review of construction methods
 - review of final permit drawings
- 12.8. Permit Application and Decision. After the permitting meetings described above, the NCTA will submit an updated Section 404 permit application to the USACE and a Section 401 certification request to NCDENR. Permit applications under other applicable laws will also be filed. All permit applications shall be filed in accordance with the respective agency permitting requirements in place at the time of application. All respective permitting agencies shall forward the permit applications to other agencies for review as required by the respective agency regulations and/or rules.
- 12.9. Permit Decisions. The permitting agencies will consider and act upon the permit applications in accordance with their procedures.
- 12.10. Permitting Delay. If a Section 404 permit (or any other permit or approval) is not issued within 180 days after the FHWA issues a Record of Decision (ROD) *and* a complete permit application is submitted, the USDOT will be required by Section 6002 to submit a report to the Congress – specifically, to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure in the House of Representatives. Reports must be submitted every 60 days thereafter until the issue is resolved. The same requirement applies to other permitting decisions.
- 12.11. Coordination After Permit Issuance. After permit issuance, NCTA will coordinate directly with permitting agencies and others as required by the terms of project permits. Such coordination may include issues such as reviewing final project plans, tracking compliance with permit conditions, and modifying permits to address changes to the project's design, construction methodology or construction timeframe.

Exhibit 1

**PROJECT INITIATION LETTER
&
NOTICE OF INTENT**



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

BEVERLY E. PERDUE
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

November 20, 2009

John F. Sullivan, III, P.E.
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310 New Bern Avenue, Suite 410
Raleigh, NC 27601-1418

**RE: STIP Projects R-2721, R-2828, and R-2829
Notification of Project Initiation**

Dear Mr. Sullivan,


In accordance with Section 6002 of SAFETEA-LU, the North Carolina Turnpike Authority (NCTA) is notifying the Federal Highway Administration (FHWA) that planning, environmental, and engineering studies for the proposed Southern and Eastern Wake Expressway project are underway. The project is included in the 2009-2015 North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. These three projects are being developed as a single project in a single Environmental Impact Statement (EIS).

NCTA, a division of NCDOT, will prepare an EIS on the proposed southern and eastern portions of the Outer Loop around Raleigh and surrounding communities in Wake and Johnston Counties. The project extends from the vicinity of NC 55 at SR 1172 (Old Smithfield Road) near Apex to the vicinity of US 64/US 264 Bypass in Knightdale, a distance of approximately 28 miles. The proposed project would complete the Outer Loop.

It is anticipated that a Clean Water Act 404 Individual Permit will be required from the US Army Corps of Engineers (Corps). NCTA will coordinate throughout project development with the Corps to ensure that their concerns are addressed and incorporated into the EIS.

Enclosed, please find a Draft Notice of Intent to begin work on the environmental document for the Southern and Eastern Wake Expressway project. If you have any questions or would like to discuss the project in more detail, please contact Jennifer Harris at (919) 571-3004.

Sincerely,


Steven D. DeWitt, P.E.
Chief Engineer

cc: Ms. Deborah Barbour, P.E., NCDOT
Ms. Jennifer Harris, P.E., NCTA

NOTICES

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement; Wake and Johnston Counties, NC

December __, 2009

AGENCY: Federal Highway Administration (FHWA), DOT

ACTION: Notice of Intent (NOI)

SUMMARY: The FHWA is issuing this notice to advise the public that an Environmental Impact Statement (EIS) will be prepared for a proposed project in Wake and Johnston Counties, North Carolina.

FOR FURTHER INFORMATION CONTACT: Mr. George Hoops, P.E., Major Projects Engineer, Federal Highway Administration, 310 Bern Avenue, Suite 410, Raleigh, North Carolina 27601-1418, Telephone: (919) 747-7022.

SUPPLEMENTARY INFORMATION: Pursuant to Title 23, Code of Federal Regulations, Part 771, Environmental Impact and Related Procedures, the FHWA, in cooperation with the North Carolina Turnpike Authority (NCTA), a division of the North Carolina Department of Transportation (NCDOT), will prepare an EIS addressing the proposed completion of the Raleigh Outer Loop. The proposed study area boundary begins in Wake County at NC 55 in the vicinity of Apex and Holly Springs. The boundary extends southward along NC 55 and turns eastward to parallel NC 42, crossing into Johnston County near Benson Road (NC 50). The boundary turns northward near Clayton, extending to US 64/US 264 Bypass, in Knightdale. The study area includes southeastern limits of Raleigh and the southern limits of Garner and Cary. The proposed action is included in the 2035 Long Range Transportation Plan approved by the Capital Area Metropolitan Planning Organization (CAMPO).

This project is designated as three projects in the NCDOT State Transportation Improvement Program (STIP) – Projects R-2721, R-2828, and R-2829. These projects combine to form the southern and eastern portions of the Outer Loop around Raleigh and surrounding communities, completing the Outer Loop. The northern portion of the Outer Loop is open to traffic and the western portion, the Western Wake Freeway, is currently under construction. The southern portion of this project is proposed to tie into the Western Wake Freeway near Apex. The eastern portion of this project is proposed to tie into the northern portion of the Outer Loop at the US 64/US 264 Bypass in Knightdale.

The EIS for the proposed action will consider alternatives that include improving existing roadways as well as alternatives that involve building a new location facility. Multiple alternative

corridors for a new location facility may be evaluated. The analysis will also include a range of non-highway improvement alternatives, including the “No-Build” alternative (continuation of the existing condition), expanding transit service, transportation demand management (TDM), and transportation system management (TSM). As part of the EIS, NCTA will study the feasibility and impacts of developing the proposed project as a tolled facility.

Letters describing the proposed action and soliciting comments will be sent to appropriate Federal, State and local agencies. Scoping will occur over a series of meetings with the agencies and citizens informational workshops with the public. Information on the dates, times, and locations of the citizens informational workshops will be advertised in the local news media and newsletters will be mailed to those on the project mailing list. If you wish to be placed on the mailing list contact Jennifer Harris at the address listed below. The Draft EIS will be available for public and agency review and comment prior to the public hearing.

To ensure the full range of issues related to the proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties. Comments and questions concerning the proposed action should be directed to the FHWA at the address provided above or directed to: Ms. Jennifer Harris, P.E., Staff Engineer, North Carolina Turnpike Authority, at 5400 Glenwood Avenue, Suite 400, Raleigh, North Carolina, 27612. Telephone: (919)571-3000. Email: sewake@ncturnpike.org.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Research, Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation of Federal programs and activities apply to this program.)

Issued on:

George Hoops, P.E. – Major Projects Engineer
Federal Highway Administration
Raleigh, North Carolina

Consumptive Use of up to 1.999 mgd;
Modification Date: October 28, 2009.

31. Novus Operating, LLC, Pad ID:
Wilcox #1, ABR-20090803, Covington
Township, Tioga County, Pa.;

Consumptive Use of up to 0.999 mgd;
Transferred Date: October 22, 2009.

32. Novus Operating, LLC, Pad ID:
Brookfield #1, ABR-20090804,
Brookfield Township, Tioga County,
Pa.; Consumptive Use of up to 0.999
mgd; Transferred Date: October 22,
2009.

Authority: Public Law 91-575, 84 Stat.
1509 et seq., 18 CFR Parts 806, 807, and 808.

Dated: November 17, 2009.

Stephanie L. Richardson,

Secretary to the Commission.

[FR Doc. E9-28514 Filed 11-27-09; 8:45 am]

BILLING CODE 7040-01-P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Wake and Johnston Counties, NC

AGENCY: Federal Highway
Administration (FHWA), DOT.

ACTION: Notice of Intent (NOI).

SUMMARY: The FHWA is issuing this
notice to advise the public that an
environmental impact statement will be
prepared for a proposed project in Wake
and Johnston Counties, North Carolina.

FOR FURTHER INFORMATION CONTACT: Mr.
George Hoops, P.E., Major Projects
Engineer, Federal Highway
Administration, 310 Bern Avenue, Suite
410, Raleigh, North Carolina 27601-
1418, *Telephone:* (919) 747-7022.

SUPPLEMENTARY INFORMATION: Pursuant
to Title 23, Code of Federal Regulations,
Part 771, Environmental Impact and
Related Procedures, the FHWA, in
cooperation with the North Carolina
Turnpike Authority (NCTA), a division
of the North Carolina Department of
Transportation (NCDOT), will prepare
an environmental impact statement
(EIS) addressing the proposed
completion of the Raleigh Outer Loop.
The proposed study area boundary
begins in Wake County at NC 55 in the
vicinity of Apex and Holly Springs. The
boundary extends southward along NC
55 and turns eastward to parallel NC 42,
crossing into Johnston County near
Benson Road (NC 50). The boundary
turns northward near Clayton,
extending to US 64/US 264 Bypass, in
Knightdale. The study area includes
southeastern limits of Raleigh and the
southern limits of Garner and Cary. The
proposed action is included in the 2035

Long Range Transportation Plan
approved by the Capital Area
Metropolitan Planning Organization
(CAMPO).

This project is designated as three
projects in the NCDOT State
Transportation Improvement Program
(STIP)—Projects R-2721, R-2828, and
R-2829. These projects combine to form
the southern and eastern portions of the
Outer Loop around Raleigh and
surrounding communities, completing
the Outer Loop. The northern portion of
the Outer Loop is open to traffic and the
western portion, the Western Wake
Freeway, is currently under
construction. The southern portion of
this project is proposed to tie into the
Western Wake Freeway near Apex. The
eastern portion of this project is
proposed to tie into the northern portion
of the Outer Loop at the US 64/US 264
Bypass in Knightdale. The EIS for the
proposed action will consider
alternatives that include improving
existing roadways as well as alternatives
that involve building a new location
facility. Multiple alternative corridors
for a new location facility may be
evaluated. The analysis will also
include a range of non-highway
improvement alternatives, including the
“No-Build” alternative (continuation of
the existing condition), expanding
transit service, transportation demand
management (TDM), and transportation
system management (TSM). As part of
the EIS, NCTA will study the feasibility
and impacts of developing the proposed
project as a tolled facility.

Letters describing the proposed action
and soliciting comments will be sent to
appropriate Federal, State and local
agencies. Scoping will occur over a
series of meetings with the agencies and
citizens informational workshops with
the public. Information on the dates,
times, and locations of the citizens
informational workshops will be
advertised in the local news media, and
newsletters will be mailed to those on
the project mailing list. If you wish to
be placed on the mailing list, contact
Jennifer Harris at the address listed
below. The Draft EIS will be available
for public and agency review and
comment prior to the public hearing.

To ensure the full range of issues
related to the proposed action are
addressed and all significant issues
identified, comments and suggestions
are invited from all interested parties.
Comments and questions concerning the
proposed action should be directed to
the FHWA at the address provided
above or directed to: Ms. Jennifer Harris,
P.E., Staff Engineer, North Carolina
Turnpike Authority, at 5400 Glenwood
Avenue, Suite 400, Raleigh, North

Carolina 27612. *Telephone:* (919) 571-
3000. *E-mail:* sewake@ncturnpike.org.

(Catalog of Federal Domestic Assistance
Program Number 20.205, Highway Research,
Planning and Construction. The regulations
implementing Executive Order 12372
regarding intergovernmental consultation of
Federal programs and activities apply to this
program.)

Issued on: November 23, 2009.

George Hoops,

*Major Projects Engineer, Federal Highway
Administration, Raleigh, North Carolina.*

[FR Doc. E9-28626 Filed 11-27-09; 8:45 am]

BILLING CODE 4910-22-P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

[WisDOT Project 1206-07-03]

Notice of Intent to Prepare a Supplemental Draft Environmental Impact Statement; USH 18 & 151, CTH PD to USH 12 & 14, Madison Urban Area; Dane County, WI

AGENCY: Federal Highway
Administration (FHWA), DOT.

ACTION: Notice of Intent to Prepare a
Supplemental Draft Environmental
Impact Statement.

SUMMARY: The FHWA is issuing this
notice to advise the public that a
Supplemental Draft Environmental
Impact Statement (SDEIS) is being
prepared for transportation
improvements to the USH 18 & 151
(Verona Rd) corridor from CTH PD to
USH 12 & 14 in the Madison Urban
Area, Dane County, Wisconsin, WisDOT
Project 1206-07-03. The SDEIS is being
prepared in conformance with 40 CFR
1500 and FHWA regulations.

SUPPLEMENTARY INFORMATION: The
Federal Highway Administration
(FHWA), in cooperation with the
Wisconsin Department of
Transportation (WisDOT), is preparing a
Supplemental Draft Environmental
Impact Statement (SDEIS) on
improvements needed to provide
capacity for existing and projected
traffic demand, to reduce high crash
rates, and to provide better connectivity
between land areas adjacent to the
highways on approximately 2 miles of
existing USH 18 & 151 (Verona Road)
from CTH PD (McKee Rd) to USH 12 &
14 (Madison South Beltline Hwy). The
previous DEIS corridor included three
focus areas: (1) The West Madison
Beltline Hwy (USH 12 & 14 from USH
14 in Middleton to Todd Dr in
Madison), (2) Interchange upgrades and
new grade separations on the West
Madison Beltline, and (3) the same

Exhibit 2

**PARTICIPATING AGENCY INVITATIONS
&
AGENCY RESPONSES**



U.S. Department
of Transportation

**Federal Highway
Administration**

North Carolina Division

August 17, 2010

310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

In Reply Refer To:
HDA-NC

Mr. Eric Alsmeyer
US Army Corps of Engineers
Raleigh Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

RE: Invitation to Become Participating Agency and Cooperating Agency
Triangle Expressway Southeast Extension
Wake & Johnston Counties/STIP Projects: R-2721, R-2828, R-2829

Dear Mr. Alsmeyer:

The Federal Highway Administration (FHWA) in cooperation with the North Carolina Turnpike Authority (NCTA), a division of North Carolina Department of Transportation (NCDOT), is initiating the project development, environmental, and engineering studies for the proposed Triangle Expressway Southeast Extension project, also known as the Southern and Eastern Wake Expressway, in Wake and Johnston Counties. This project is included in the 2009-2015 NCDOT State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. The study area boundary begins in Wake County at NC 55 in the vicinity of Apex and Holly Springs. The boundary extends southward along NC 55 and turns eastward to parallel NC 42, crossing into Johnston County near Benson Road (NC 50). The boundary turns northward near Clayton, extending to US 64/US 264 Bypass, in Knightdale. The study area includes southeastern limits of Raleigh and the southern limits of Garner and Cary. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published on November 30, 2009 (Federal Register Vol. 74, No. 228, page 62629).

Your agency was identified as an agency that may have an interest in the project. With this letter, we are extending to your agency an invitation to be a participating agency with the FHWA in the development of the EIS for the subject project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

FHWA also requests the participation of the US Army Corps of Engineers as a cooperating agency in the preparation of the Draft EIS and Final EIS, in accordance with 40 CFR 1501.6 of the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provision of the National Environmental Policy Act.

Pursuant to Section 6002 of SAFETEA-LU, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project. We suggest that your agency's role in the development of the above project include the following as they relate to your area of expertise:

**MOVING THE
AMERICAN
ECONOMY**



- 1) Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
- 2) Participate in coordination meetings and joint field reviews as appropriate.
- 3) Timely review and comment on documents provided for your agency's input during the environmental review process.

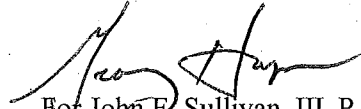
A federal agency who does not respond to this letter will automatically be designated as a participating agency. If you wish to decline, we ask that your agency submit a separate letter stating your reason for declining the invitation to Ms. Jennifer Harris, P.E., NCTA Director of Planning and Environmental Studies, at 5400 Glenwood Avenue, Suite 400, Raleigh, North Carolina 27612 by September 15, 2010. Pursuant to SAFETEA-LU Section 6002, any federal agency that chooses to decline the invitation to be a participating agency must specifically state in its response that it:

- Has no jurisdiction or authority with respect to the project;
- Has no expertise or information relevant to the project; and
- Does not intend to submit comments on the project.

If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of the EIS, please contact Mr. George Hoops, FHWA Major Projects Engineer, at (919) 747-7022 or Ms. Harris at (919) 571-3004.

Thank you for your cooperation and interest in this project.

Sincerely,



For John E. Sullivan, III, P.E.
Division Administrator

cc: Mr. George Hoops, P.E., FHWA
Ms. Jennifer Harris, P.E., NCTA
Mr. Scott McLendon, USACE



REPLY TO
ATTENTION OF:

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

September 15, 2010

Regulatory Division

SUBJECT: Action ID 2009-02240; TIP Project Nos. R-2721, R-2828 and R-2829,
Triangle Expressway Southeast Extension

Mr. John F. Sullivan, III, P.E.
Division Administrator, North Carolina Division
US Department of Transportation
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

Dear Mr. Sullivan:

Please reference your August 17, 2010 letter requesting the participation of the US Army Corps of Engineers as a cooperating agency in the preparation of the Draft Environmental Impact Statement (EIS) and Final EIS for the proposed TIP Project Nos. R-2721, R-2828 and R-2829, Triangle Expressway Southeast Extension, in Wake and Johnston Counties, North Carolina. It is our understanding that this project is being developed and will likely be constructed under authority of the North Carolina Turnpike Authority (NCTA) as a toll facility.

Pursuant to the Council on Environmental Quality, (40 CFR 1501.6 Cooperating Agencies), we would be pleased to participate in the development of the necessary environmental document as a Cooperating Agency as you have requested, with the understanding that the Federal Highway Administration (FHWA) will act as the lead Federal agency. It is our intention to formally adopt the FHWA National Environmental Policy Act (NEPA) document, in whole or in part, provided it meets our requirements relative to Section 404 of the Clean Water Act and NEPA, when the Record of Decision (or Finding of No Significant Impact, as appropriate) is completed. Please note that other program commitments will preclude us from funding or writing any portion of the subject document. However, it is our intention to fully participate in the development of the necessary document throughout the EIS development process.

Should you have any questions, please contact the undersigned in the Raleigh Field Office at (919) 554-4884, extension 23.

Sincerely,



Eric C. Alsmeyer
Regulatory Project Manager

Copies Furnished:

Mr. Steven D. DeWitt
Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Mr. Brian Wrenn
NCDENR-DWQ
Wetlands Section
585 Waughtown Street
Winston-Salem, NC 27107

Mr. Gary Jordan
United States Fish & Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, NC 27636-3726

Mr. Christopher Militscher
USEPA Raleigh Office
Office of Environmental Assessment
310 New Bern Avenue, Room 206
Raleigh, NC 27601

Mr. Travis Wilson
Highway Coordinator
North Carolina Wildlife Resources Commission
1142 I-85 Service Road
Creedmoor, NC 27522



U.S. Department
of Transportation

**Federal Highway
Administration**

North Carolina Division

August 17, 2010

310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

In Reply Refer To:
HDA-NC

Mr. Gary Jordan
US Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636

RE: Invitation to Become Participating Agency and Cooperating Agency
Triangle Expressway Southeast Extension
Wake & Johnston Counties/STIP Projects: R-2721, R-2828, R-2829

Dear Mr. Jordan

The Federal Highway Administration (FHWA) in cooperation with the North Carolina Turnpike Authority (NCTA), a division of North Carolina Department of Transportation (NCDOT), is initiating the project development, environmental, and engineering studies for the proposed Triangle Expressway Southeast Extension project, also known as the Southern and Eastern Wake Expressway, in Wake and Johnston Counties. This project is included in the 2009-2015 NCDOT State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. The study area boundary begins in Wake County at NC 55 in the vicinity of Apex and Holly Springs. The boundary extends southward along NC 55 and turns eastward to parallel NC 42, crossing into Johnston County near Benson Road (NC 50). The boundary turns northward near Clayton, extending to US 64/US 264 Bypass, in Knightdale. The study area includes southeastern limits of Raleigh and the southern limits of Garner and Cary. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published on November 30, 2009 (Federal Register Vol. 74, No. 228, page 62629).

Your agency was identified as an agency that may have an interest in the project. With this letter, we are extending to your agency an invitation to be a participating agency with the FHWA in the development of the EIS for the subject project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to Section 6002 of SAFETEA-LU, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project. We suggest that your agency's role in the development of the above project include the following as they relate to your area of expertise:

- 1) Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
- 2) Participate in coordination meetings and joint field reviews as appropriate.
- 3) Timely review and comment on documents provided for your agency's input during the environmental review process.

**MOVING THE
AMERICAN
ECONOMY**



A federal agency who does not respond to this letter will automatically be designated as a participating agency. If you wish to decline, we ask that your agency submit a separate letter stating your reason for declining the invitation to Ms. Jennifer Harris, P.E., NCTA Director of Planning and Environmental Studies, at 5400 Glenwood Avenue, Suite 400, Raleigh, North Carolina 27612 by September 15, 2010. Pursuant to SAFETEA-LU Section 6002, any federal agency that chooses to decline the invitation to be a participating agency must specifically state in its response that it:

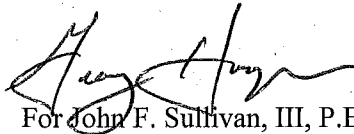
- Has no jurisdiction or authority with respect to the project;
- Has no expertise or information relevant to the project; and
- Does not intend to submit comments on the project.

A federal agency that does not decline the invitation by the date specified above will automatically be designated as a participating agency.

If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of the EIS, please contact please contact Mr. George Hoops, FHWA Major Projects Engineer, at (919) 747-7022 or Ms. Harris at (919) 571-3004.

Thank you for your cooperation and interest in this project.

Sincerely,



For John F. Sullivan, III, P.E.
Division Administrator

cc: Mr. George Hoops, PE, FHWA
Ms. Jennifer Harris, PE, NCTA
Mr. Brian Cole, USFWS



U.S. Department
of Transportation

**Federal Highway
Administration**

North Carolina Division

August 17, 2010

310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

In Reply Refer To:
HDA-NC

Mr. Chris Militscher
US Environmental Protection Agency
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

RE: Invitation to Become Participating Agency and Cooperating Agency
Triangle Expressway Southeast Extension
Wake & Johnston Counties/STIP Projects: R-2721, R-2828, R-2829

Dear Mr. Militscher:

The Federal Highway Administration (FHWA) in cooperation with the North Carolina Turnpike Authority (NCTA), a division of North Carolina Department of Transportation (NCDOT), is initiating the project development, environmental, and engineering studies for the proposed Triangle Expressway Southeast Extension project, also known as the Southern and Eastern Wake Expressway, in Wake and Johnston Counties. This project is included in the 2009-2015 NCDOT State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. The study area boundary begins in Wake County at NC 55 in the vicinity of Apex and Holly Springs. The boundary extends southward along NC 55 and turns eastward to parallel NC 42, crossing into Johnston County near Benson Road (NC 50). The boundary turns northward near Clayton, extending to US 64/US 264 Bypass, in Knightdale. The study area includes southeastern limits of Raleigh and the southern limits of Garner and Cary. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published on November 30, 2009 (Federal Register Vol. 74, No. 228, page 62629).

Your agency was identified as an agency that may have an interest in the project. With this letter, we are extending to your agency an invitation to be a participating agency with the FHWA in the development of the EIS for the subject project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to Section 6002 of SAFETEA-LU, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project. We suggest that your agency's role in the development of the above project include the following as they relate to your area of expertise:

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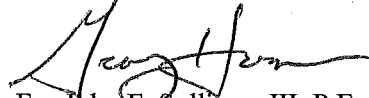
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If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of the EIS, please contact Mr. George Hoops, FHWA Major Projects Engineer, at (919) 747-7022 or Ms. Harris at (919) 571-3004.

Thank you for your cooperation and interest in this project.

Sincerely,



For John F. Sullivan, III, P.E.
Division Administrator

cc: Mr. George Hoops, P.E., FHWA
Ms. Jennifer Harris, P.E., NCTA
Mr. Ted Bisterfield, EPA-Atlanta



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

BEVERLY E. PURDUE
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

August 10, 2010

Mr. Travis Wilson
NC Wildlife Resources Commission
1142 I-85 Service Road
Creedmoor, NC 27522

RE: Invitation to Become Participating Agency and Cooperating Agency
Triangle Expressway Southeast Extension
Wake & Johnston Counties/STIP Projects: R-2721, R-2828, R-2829

Dear Mr. Wilson:

The Federal Highway Administration (FHWA) in cooperation with the North Carolina Turnpike Authority (NCTA), a division of North Carolina Department of Transportation (NCDOT), is initiating the project development, environmental, and engineering studies for the proposed Triangle Expressway Southeast Extension project, also known as the Southern and Eastern Wake Expressway, in Wake and Johnston Counties. This project is included in the 2009-2015 NCDOT State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. The study area boundary begins in Wake County at NC 55 in the vicinity of Apex and Holly Springs. The boundary extends southward along NC 55 and turns eastward to parallel NC 42, crossing into Johnston County near Benson Road (NC 50). The boundary turns northward near Clayton, extending to US 64/US 264 Bypass, in Knightdale. The study area includes southeastern limits of Raleigh and the southern limits of Garner and Cary. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published on November 30, 2009 (Federal Register Vol. 74, No. 228, page 62629).

Your agency was identified as an agency that may have an interest in the project. With this letter, we are extending to your agency an invitation to be a participating agency with the FHWA in the development of the EIS for the subject project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to Section 6002 of SAFETEA-LU, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project. We suggest that your agency's role in the development of the above project include the following as they relate to your area of expertise:

- 1) Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
- 2) Participate in coordination meetings and joint field reviews as appropriate.
- 3) Timely review and comment on documents provided for your agency's input during the environmental review process.

Please respond to this invitation prior to September 15, 2010. If you wish to accept this invitation, please sign in the space below and return a copy to Ms. Jennifer Harris, P.E., NCTA Director of Planning and Environmental Studies, at 5400 Glenwood Avenue, Suite 400, Raleigh, North Carolina 27612. If you wish to decline, we ask that your agency submit a separate letter stating your reason for declining the invitation.

If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of the EIS, please contact Ms. Harris at (919) 571-3004 or Mr. George Hoops, FHWA Major Projects Engineer, at (919) 747-7022.

Thank you for your cooperation and interest in this project.

Sincerely,

Jennifer Harris

for Steven D. DeWitt, P.E.
Chief Engineer

cc: Mr. George Hoops, PE, FHWA
Ms. Jennifer Harris, PE, NCTA

We accept the invitation to become a participating agency.

Francis W. Wilson

Print Name

[Signature]

Signature

8-10-2010

Date



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

BEVERLY E. PURDUE
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

August 10, 2010

Mr. Brian Wrenn
NCDENR-Division of Water Quality
1650 Mail Service Center
Raleigh, NC 27699-1650

RE: Invitation to Become Participating Agency and Cooperating Agency
Triangle Expressway Southeast Extension
Wake & Johnston Counties/STIP Projects: R-2721, R-2828, R-2829

Dear Mr. Wrenn:

The Federal Highway Administration (FHWA) in cooperation with the North Carolina Turnpike Authority (NCTA), a division of North Carolina Department of Transportation (NCDOT), is initiating the project development, environmental, and engineering studies for the proposed Triangle Expressway Southeast Extension project, also known as the Southern and Eastern Wake Expressway, in Wake and Johnston Counties. This project is included in the 2009-2015 NCDOT State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. The study area boundary begins in Wake County at NC 55 in the vicinity of Apex and Holly Springs. The boundary extends southward along NC 55 and turns eastward to parallel NC 42, crossing into Johnston County near Benson Road (NC 50). The boundary turns northward near Clayton, extending to US 64/US 264 Bypass, in Knightdale. The study area includes southeastern limits of Raleigh and the southern limits of Garner and Cary. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published on November 30, 2009 (Federal Register Vol. 74, No. 228, page 62629).

Your agency was identified as an agency that may have an interest in the project. With this letter, we are extending to your agency an invitation to be a participating agency with the FHWA in the development of the EIS for the subject project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to Section 6002 of SAFETEA-LU, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project. We suggest that your agency's role in the development of the above project include the following as they relate to your area of expertise:

- 1) Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
- 2) Participate in coordination meetings and joint field reviews as appropriate.
- 3) Timely review and comment on documents provided for your agency's input during the environmental review process.

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If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of the EIS, please contact Ms. Harris at (919) 571-3004 or Mr. George Hoops, FHWA Major Projects Engineer, at (919) 747-7022.

Thank you for your cooperation and interest in this project.

Sincerely,

Jennifer Harris

for

Steven D. DeWitt, P.E.
Chief Engineer

cc: Mr. George Hoops, PE, FHWA
Ms. Jennifer Harris, PE, NCTA

We accept the invitation to become a participating agency.

Brian Wenn

Print Name

B. Wenn

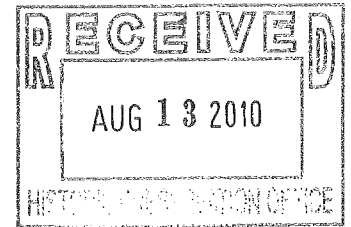
Signature

1/20/11

Date



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY



BEVERLY E. PURDUE
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

August 10, 2010

CH 98-0457

Mr. Peter Sandbeck
State Historic Preservation Office
North Carolina Department of Cultural Resources
4610 Mail Service Center
Raleigh, NC 27699-4610

RE: Invitation to Become Participating Agency and Cooperating Agency
Triangle Expressway Southeast Extension
Wake & Johnston Counties/STIP Projects: R-2721, R-2828, R-2829

Dear Mr. Sandbeck:

The Federal Highway Administration (FHWA) in cooperation with the North Carolina Turnpike Authority (NCTA), a division of North Carolina Department of Transportation (NCDOT), is initiating the project development, environmental, and engineering studies for the proposed Triangle Expressway Southeast Extension project, also known as the Southern and Eastern Wake Expressway, in Wake and Johnston Counties. This project is included in the 2009-2015 NCDOT State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. The study area boundary begins in Wake County at NC 55 in the vicinity of Apex and Holly Springs. The boundary extends southward along NC 55 and turns eastward to parallel NC 42, crossing into Johnston County near Benson Road (NC 50). The boundary turns northward near Clayton, extending to US 64/US 264 Bypass, in Knightdale. The study area includes southeastern limits of Raleigh and the southern limits of Garner and Cary. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published on November 30, 2009 (Federal Register Vol. 74, No. 228, page 62629).

Your agency was identified as an agency that may have an interest in the project. With this letter, we are extending to your agency an invitation to be a participating agency with the FHWA in the development of the EIS for the subject project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

Pursuant to Section 6002 of SAFETEA-LU, participating agencies are responsible to identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project. We suggest that your agency's role in the development of the above project include the following as they relate to your area of expertise:

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If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of the EIS, please contact Ms. Harris at (919) 571-3004 or Mr. George Hoops, FHWA Major Projects Engineer, at (919) 747-7022.

Thank you for your cooperation and interest in this project.

Sincerely,

Jennifer Harris

for Steven D. DeWitt, P.E.
Chief Engineer

cc: Mr. George Hoops, PE, FHWA
Ms. Jennifer Harris, PE, NCTA
Ms. Renee Gledhill-Early, SHPO

We accept the invitation to become a participating agency.

Renee Gledhill-Early, ERC/SHPO

Print Name

Renee Gledhill-Early

Signature

8.31.10

Date



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

BEVERLY E. PURDUE
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578



August 10, 2010

Mr. Ed Johnson
Director
Capital Area Metropolitan Planning Organization
127 West Hargett Street, Suite 800
Raleigh, NC 27601

RE: Invitation to Become Participating Agency and Cooperating Agency
Triangle Expressway Southeast Extension
Wake & Johnston Counties/STIP Projects: R-2721, R-2828, R-2829

Dear Mr. Johnson:

The Federal Highway Administration (FHWA) in cooperation with the North Carolina Turnpike Authority (NCTA), a division of North Carolina Department of Transportation (NCDOT), is initiating the project development, environmental, and engineering studies for the proposed Triangle Expressway Southeast Extension project, also known as the Southern and Eastern Wake Expressway, in Wake and Johnston Counties. This project is included in the 2009-2015 NCDOT State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. The study area boundary begins in Wake County at NC 55 in the vicinity of Apex and Holly Springs. The boundary extends southward along NC 55 and turns eastward to parallel NC 42, crossing into Johnston County near Benson Road (NC 50). The boundary turns northward near Clayton, extending to US 64/US 264 Bypass, in Knightdale. The study area includes southeastern limits of Raleigh and the southern limits of Garner and Cary. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published on November 30, 2009 (Federal Register Vol. 74, No. 228, page 62629).

Your agency was identified as an agency that may have an interest in the project. With this letter, we are extending to your agency an invitation to be a participating agency with the FHWA in the development of the EIS for the subject project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

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Thank you for your cooperation and interest in this project.

Sincerely,

Jennifer Harris

for

Steven D. DeWitt, P.E.
Chief Engineer

cc: Mr. George Hoops, PE, FHWA
Ms. Jennifer Harris, PE, NCTA

We accept the invitation to become a participating agency.

EDISON JOHNSON

Print Name

Edison Johnson
Signature

AUG. 17, 2010
Date



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

BEVERLY E. PURDUE
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

August 10, 2010

Mr. Sean McKenna
NCDENR-Division of Marine Fisheries
Pamlico District Office
943 Washington Square Mall
Washington, NC 27889

RE: Invitation to Become Participating Agency and Cooperating Agency
Triangle Expressway Southeast Extension
Wake & Johnston Counties/STIP Projects: R-2721, R-2828, R-2829

Dear Mr. McKenna:

The Federal Highway Administration (FHWA) in cooperation with the North Carolina Turnpike Authority (NCTA), a division of North Carolina Department of Transportation (NCDOT), is initiating the project development, environmental, and engineering studies for the proposed Triangle Expressway Southeast Extension project, also known as the Southern and Eastern Wake Expressway, in Wake and Johnston Counties. This project is included in the 2009-2015 NCDOT State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. The study area boundary begins in Wake County at NC 55 in the vicinity of Apex and Holly Springs. The boundary extends southward along NC 55 and turns eastward to parallel NC 42, crossing into Johnston County near Benson Road (NC 50). The boundary turns northward near Clayton, extending to US 64/US 264 Bypass, in Knightdale. The study area includes southeastern limits of Raleigh and the southern limits of Garner and Cary. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published on November 30, 2009 (Federal Register Vol. 74, No. 228, page 62629).

Your agency was identified as an agency that may have an interest in the project. With this letter, we are extending to your agency an invitation to be a participating agency with the FHWA in the development of the EIS for the subject project. This designation does not imply that your agency either supports the proposal or has any special expertise with respect to evaluation of the project.

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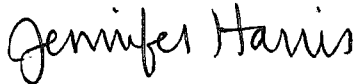
- 1) Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives analysis.
- 2) Participate in coordination meetings and joint field reviews as appropriate.
- 3) Timely review and comment on documents provided for your agency's input during the environmental review process.

Please respond to this invitation prior to September 15, 2010. If you wish to accept this invitation, please sign in the space below and return a copy to Ms. Jennifer Harris, P.E., NCTA Director of Planning and Environmental Studies, at 5400 Glenwood Avenue, Suite 400, Raleigh, North Carolina 27612. If you wish to decline, we ask that your agency submit a separate letter stating your reason for declining the invitation.

If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities during the preparation of the EIS, please contact Ms. Harris at (919) 571-3004 or Mr. George Hoops, FHWA Major Projects Engineer, at (919) 747-7022.

Thank you for your cooperation and interest in this project.

Sincerely,



for Steven D. DeWitt, P.E.
Chief Engineer

cc: Mr. George Hoops, PE, FHWA
Ms. Jennifer Harris, PE, NCTA

We accept the invitation to become a participating agency.

Print Name

Signature

Date

Giugno, Kiersten R

From: Hart, Kevin
Sent: Tuesday, January 25, 2011 3:56 PM
To: Giugno, Kiersten R
Cc: Deaton, Anne
Subject: RE: Southeast Extension (participating agency invitation)

Kiersten,
At this time the NCDMF will defer to the NCWRC on this project.
If you have any questions please let me know.
Kevin Hart

From: Giugno, Kiersten R
Sent: Wednesday, January 19, 2011 11:54 AM
To: Mckenna, Sean
Subject: Southeast Extension (participating agency invitation)

Sean - attached is an invitation for DMF to serve as a participating agency pursuant to Section 6002 of SAFETEA-LU. I do not believe NCTA has received a response from DMF. Please review and respond for our records.

Thank you,

Kiersten R. Giugno
Senior Transportation Planner

NCTA General Engineering Consultant
5400 Glenwood Ave., Suite 400
Raleigh, NC 27612

1578 Mail Service Center
Raleigh, NC 27699-1578

Tel 919.420.7558

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

APPENDIX E
Scoping Letters and Responses



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

BEVERLY E. PERDUE
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

January 25, 2010

Ms. Chrys Baggett
North Carolina Department of Administration
1301 Mail Service Center
Raleigh, NC 27699-1301

RE: Start of Study and Agency Scoping Meeting Notification
Southern & Eastern Wake Expressway, Wake and Johnston Counties
STIP Projects R-2721, R-2828, and R-2829

Dear Ms. Baggett,

The North Carolina Turnpike Authority (NCTA), a division of the North Carolina Department of Transportation (NCDOT), has initiated the project development, environmental, and engineering studies for the proposed Southern and Eastern Wake Expressway in Wake and Johnston Counties (see attached figure). As it is currently defined, the project would address the proposed completion of the Raleigh 540 Outer Loop, from NC 55 in Wake County in the vicinity of the Towns of Apex and Holly Springs, east to the US 64/US 264 Bypass, in the Town of Knightdale, a distance of approximately 28 miles. The proposed study area also includes the southeastern limits of the City of Raleigh, the southern limits of the Towns of Garner and Cary, and portions of the Town of Clayton and Johnston County. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) was published on November 30, 2009 (Federal Register Vol. 74, No. 228, page 62629).

This project is included in the 2009-2015 NCDOT State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. These three projects are being developed as a single project in a single EIS. The three projects combine to form the southern and eastern portions of the Outer Loop around Raleigh and surrounding communities, completing the Outer Loop. The northern portion of the Outer Loop is open to traffic and the western portion, the Western Wake Freeway, is currently under construction. The southern portion of this project is proposed to tie into the Western Wake Freeway near Apex. The eastern portion of this project is proposed to tie into the northern portion of the Outer Loop in Knightdale.

While much of the project area is rural and agricultural in nature, the area's proximity to employment centers in Raleigh and Research Triangle Park is stimulating a transition to suburban land uses. Based on previous studies and natural systems screening, the project corridor includes a number of streams, wetlands, and floodplains, as well as potential habitat for four federally protected species: dwarf wedgemussel (*Alasmidonta heterodon*), Tar River spiny mussel (*Elliptio steinstansana*), Michaux's sumac (*Rhus michauxii*), and the red-cockaded woodpecker (*Picoides borealis*).

NCTA plans to prepare an EIS for the Southern and Eastern Wake Expressway project in accordance with the National Environmental Policy Act (NEPA). The EIS will consider

alternatives that include improving existing roadways, alternatives that involve building a new location facility, and various non-highway alternatives. We would appreciate any information you might have that would be helpful in establishing the study area and project purpose and need, identifying preliminary corridors, evaluating the potential environmental impacts of those corridors, and establishing a viable range of alternatives for consideration. Also, please identify any permits or approvals or other requirements of your agency.

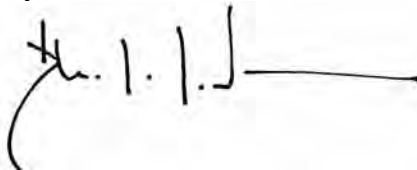
In lieu of strictly following the NCDOT's merger process, this project will follow coordination procedures authorized under Section 6002 of SAFETEA-LU for the environmental review process. The key difference in the two approaches is that under the Section 6002 process formal agency concurrence is not required at decision points in the study. However, NCTA still expects agencies to highlight issues of concern, particularly those that could affect later permitting decisions.

An agency scoping meeting will be held at the Turnpike Environmental Agency Coordination Meeting on February 16, 2010 in the NCTA Board Room (Address: 5400 Glenwood Avenue, Suite 400, Raleigh, NC 27612). This meeting will be from 8:30 AM to 10:30 AM. The purpose of the meeting will be to identify significant issues related to the proposed action that should be considered during the study process. We strongly encourage you or a representative of your agency to participate in this meeting; however, if your agency can not be represented, please provide written comments by March 31, 2010. Your response should be mailed to the following:

Ms. Jennifer Harris, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

If you have any questions concerning the proposed project, please call Ms. Harris at (919) 571-3004. Public inquiries about the project can also be made via e-mail at sewake@ncturnpike.org.

Sincerely,

A handwritten signature in black ink, appearing to read "S.D. DeWitt", followed by a horizontal line extending to the right.

Steven D. DeWitt, P.E.
Chief Engineer

Attachment: Project Study Area Figure

cc: Mr. David Joyner, NCTA
Ms. Jennifer Harris, P.E., NCTA
Ms. Reid Simons, NCTA
Mr. Roy Bruce, P.E., H.W. Lochner



STATE OF NORTH CAROLINA
TURNPIKE AUTHORITY

BEVERLY E. PURDUE
GOVERNOR

1578 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1578

DAVID W. JOYNER
EXECUTIVE DIRECTOR

February 4, 2010

ADDRESS

RE: Start of Study and Local Officials Scoping Meeting Notification
Triangle Expressway Southeast Connector
Wake and Johnston Counties

Dear ADDRESSEE,

The North Carolina Turnpike Authority, a division of the North Carolina Department of Transportation (NCDOT), is moving forward with planning, environmental and engineering studies for the proposed Triangle Expressway Southeast Connector, also known as the Southern and Eastern Wake Expressway, project in Wake and Johnston Counties.

This project is included in the 2009-2015 NCDOT State Transportation Improvement Program (STIP) as Projects R-2721, R-2828, and R-2829. These three projects are being developed as a single project in a single planning study. This project combines to form the southern and eastern portions of the Outer Loop around Raleigh and surrounding communities, completing the Outer Loop. The northern portion of the Outer Loop is open to traffic and the western portion, the Triangle Expressway, is currently under construction.

Construction of the Southeast Connector is currently scheduled to be completed in phases. Phase I is between NC 55 in Apex and Interstate 40 near the Johnston County line. Phase II continues the project at I-40 and ends at US 64/US 264 Bypass in Knightdale. The entire project is nearly 30 miles long.

The Turnpike Authority anticipates preparing an environmental impact statement (EIS) for the Southeast Connector project in accordance with the National Environmental Policy Act (NEPA). The EIS will consider alternatives that include improving existing roadways, alternatives that involve building a new location facility and various non-highway alternatives.

Beginning this month, the Turnpike Authority will provide monthly updates on the project at Capital Area Metropolitan Planning Organization (CAMPO) Transportation Advisory Committee (TAC) meetings, as well as at monthly Technical Coordinating Committee (TCC) meetings. At the February 17, 2010 TAC meeting, the Authority will provide an overview of the project, the proposed project study area and preliminary purpose and need for the project. In addition, the Authority will seek input from local representatives to identify potential issues related to the proposed action that should be considered during the study process.

The CAMPO TAC meeting is scheduled for February 17, 2010 at 4:00 P.M. in Suite 800 of The Professional Building, 127 West Hargett Street. We strongly encourage you or a representative to participate in this meeting and/or to provide written comments. Written comments are appreciated by March 26, 2010. Your response should be mailed to the following:

Ms. Jennifer Harris, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

If you have any questions concerning the proposed project, please call Ms. Harris at (919) 571-3000.

Sincerely,

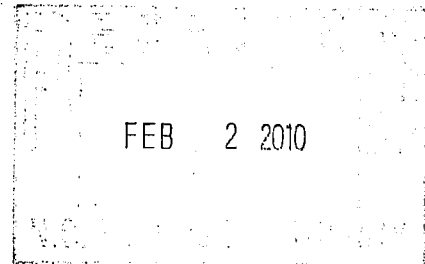
Steven D. DeWitt, P.E.
Chief Engineer

cc: Mr. David Joyner, NCTA
Ms. Jennifer Harris, P.E., NCTA
Mr. George Hoops, P.E., FHWA
Mr. Roy Bruce, P.E., H.W. Lochner
Mr. Beau Memory, NCDOT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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



January 25, 2010

Ms. Jennifer Harris, P.E.
North Carolina Turnpike Authority/NCDOT
5400 Glenwood Avenue
Suite 400
Raleigh, North Carolina 27612

SUBJECT: EPA Comments on the Pre-Scoping Information, Notice of Intent to Prepare an Environmental Impact Statement and Section 6002 Draft Coordination Plan for R-2721/R-2828/R-2829, Southern and Eastern Wake Expressway Project, Wake and Johnston Counties

Dear Ms. Harris:

The U.S. Environmental Protection Agency (EPA) Region 4 Office is providing scoping comments for the above referenced project consistent with Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA). The North Carolina Turnpike Authority (NCTA) as part of the North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) are proposing to construct an approximately 30-mile, multi-lane toll facility between NC 55 near the towns of Apex and Holly Springs and US 64/US 264 Bypass in Knightdale. The proposed project is considered to be the completion of the Raleigh Outer Loop. The Southern and Eastern Wake Expressway projects are also referred to by some entities as the Raleigh Southern Outer Loop or Interstate 540. EPA notes that Exhibit 28 of the September 2, 2004, Strategic Highway Corridor Vision Plan that was adopted by the NCDOT shows the proposed projects as Interstate 640.

The NCTA presented information at a Corridor Study and EIS pre-scoping meeting on December 8, 2009, in which Mr. Christopher Militscher of my staff participated. The presentation included a project history that began in 1996 with NCDOT filing for a Protected Corridor for Southern Wake Expressway. The project was put on hold several times due to traffic forecasts. Thirty (30) parcels in Wake County have been purchased by NCDOT for a preferred corridor. EPA requested that the identification of the parcels and acreage be provided in the Draft Environmental Impact Statement (DEIS). Mr. Militscher also requested that NCTA and FHWA consider expanding the proposed Project Study Area to include areas between Lake Wheeler, Lake Benson, and the Town of Garner and existing Interstate 40/440.

The proposed project is expected to have significant direct impacts to jurisdictional wetlands and streams, protected water supply areas, protected mussel species, residences and businesses, prime and unique farmlands, air quality, etc. The proposed project is also anticipated to have significant indirect and cumulative effects to human and natural environmental resources in southern Wake County and western Johnston County.

The Notice of Intent to prepare a DEIS dated November 30, 2009, identifies that NCTA and FHWA will also examine the "No-build", expanding transit service, transportation demand management (TDM) and transportation system management (TSM) as non-highway improvement alternatives. The Notice of Intent does not state that these non-highway alternatives will be examined in combination with one another or combined with interim improvements or upgrades to other existing roadways in the project study area. Other NCDOT Transportation Improvement Program (TIP) projects should be identified and evaluated during scoping including I-5111, I-40 Widening in Johnston County and R-2609, US 401 Widening in southern Wake County (Part of Strategic Highway Corridor #42, NC 210 to I-40). EPA notes that improvements (e.g. Widening to multi-lanes) to several existing east-west routes in southern Wake County have not been identified in area transportation plans. Ten-Ten Road (State Route 1010) which is a major east-west route in southern Wake County starts in Apex and US 1 and ends at NC 50. It is mostly a two-lane facility. NC 42 begins at US 401 and NC 55 near Fuquay-Varina and joins with US 70 Business in Clayton. Except for a small segment around Exit 312 at I-40, most of NC 42 in southern Wake County and western Johnston County is a two-lane roadway. EPA believes that these routes are in need of improvements and upgrades, including additional turn lanes and possible extended multi-lane sections.

Overall, there appears to have been very few highway improvements to existing major roadways in southern Wake County in more than a decade. EPA acknowledges improvements to Tryon Road, the proposed extension of Timber Drive in Garner, the ongoing I-540 toll road that terminates at NC 55 north of Holly Springs, and the US 70 Clayton Bypass. EPA recommends that improvements to Ten-Ten Road, including a new location extension from NC 50 to the new I-40 Interchange for the US 70 Clayton Bypass be evaluated as a 'highway build alternative' combined with other non-highway measures as identified in the Notice of Intent.

Under the Section 6002 draft Coordination Plan dated December 1, 2009, EPA notes that in Section 10.3, Process for Identifying Preferred Alternative or Section 10.4, Opportunity for Agency Input, there is no reference to the U.S. Army Corps of Engineers (USACE) determination of the Least Environmentally Damaging Practicable Alternative (LEDPA). As with other NCTA-lead projects, EPA continues to recommend that the transportation agencies make better use of the well-established NEPA/Section 404 Merger 01 Process. EPA plans to be a Participating Agency as per Section 4.3 of the draft Coordination Plan.

EPA will continue to stay involved with this proposed project and will offer more specific scoping comments when additional information, such as traffic forecasts, are available for review. Please contact Mr. Christopher A. Militscher of my staff at 919-856-4206 or by e-mail at militscher.chris@epa.gov should you have any questions concerning these comments.

Sincerely,

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

Heinz J. Mueller, Chief
NEPA Program Office

Cc: J. Sullivan, FHWA
D. Barbour, NCDOT
S. McClendon, USACE
B. Wrenn, NCDWQ



United States Department of the Interior

FEB 5 2010

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

February 3, 2010

Ms. Jennifer Harris, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, North Carolina 27699-1578

Dear Ms. Harris:

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 Southern and Eastern Wake Expressway in Wake and Johnston Counties (TIP No. R-2721, R-2828, R-2829). 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 (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

Overall, the project will have significant impacts on fish and wildlife resources, including impacts to streams, wetlands, upland forest and other habitat types. These impacts will be in the form of direct loss of habitat and fragmentation effects on remaining habitat. Although these habitats are already fragmented by multiple land uses, additional cumulative habitat fragmentation effects will occur. The negative effects of habitat fragmentation usually extend well beyond the project footprint. Forest fragmentation can lead to increased predation of some species and increased brown-headed cowbird (*Molothrus ater*) parasitism of the nests of neotropical migrant birds. Habitat fragmentation can also facilitate invasive and/or nonnative species colonization of fragmented lands. Roads also act as physical barriers to wildlife movement and cause significant wildlife mortality in the form of road-killed animals.

Section 7(a)(2) of the Endangered Species Act requires that all federal action agencies (or their designated non-federal representatives), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally threatened or endangered species. The North Carolina Natural Heritage Program (NCNHP) database lists four federally listed species for Johnston and Wake Counties: dwarf wedgemussel (*Alasmidonta heterodon*), Tar River spiny mussel (*Elliptio steinstansana*), red-cockaded woodpecker (*Picoides borealis*) and Michaux's sumac (*Rhus michauxii*). While the Tar River spiny mussel and red-cockaded woodpecker are unlikely to occur within the project study area, the dwarf wedgemussel and Michaux's sumac are both known to occur within the study area.

The Service is particularly concerned about impacts to the dwarf wedgemussel population in Swift Creek. The protected southern corridor and preliminary eastern corridor cross Swift Creek and its tributaries. This population of dwarf wedgemussel is at risk from direct effects associated

with construction of the project (e.g. erosion and siltation from construction area), and from indirect effects associated with the degradation of water quality from secondary development induced by the new road. Increased impervious surface and storm water runoff from additional development would likely further degrade the water quality within Swift Creek and its tributaries. The rapid development in the last 10-15 years within the watershed of Swift Creek below the Lake Benson Dam has already severely impacted the dwarf wedgemussel, with the result that the species is increasing more difficult to find. Additional cumulative impacts may occur in conjunction with the proposed widening of I-40 within this same study area (TIP No. I-5111). The Turnpike Authority should begin to develop a strategy to avoid contributing to the degradation of the water quality of the Swift Creek watershed.

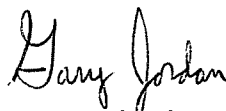
The protected southern corridor and the preliminary eastern corridor appear to connect with I-40 at a particularly unfavorable location with regard to potential impacts to the dwarf wedgemussel. This location puts the interchanges with I-40 and US 70 Bypass on top of several tributaries to Swift Creek and also in close proximity to Swift Creek mainstem. The Service recommends additional alternatives be considered which locate the interchange(s) farther away from Swift Creek and its tributaries. In addition, the Turnpike Authority should explore innovative conservation measures to minimize effects to the species. Additional mussel survey data would be useful in assessing the current status of the dwarf wedgemussel within Swift Creek.

The Service anticipates a formal Section 7 consultation for this project. Sufficient time must be allowed for the completion of this process. From the time that a complete consultation initiation package is received, the Service has 135 days to provide a final Biological Opinion. However, communication regarding the consultation should be occurring long before formal consultation is initiated.

Since Michaux's sumac is known to occur within the project study area, surveys should be conducted within suitable habitat to determine the presence or absence of this species. The survey window for Michaux's sumac is May – October.

The Service appreciates the opportunity to comment on this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520, ext. 32.

Sincerely,


for Pete Benjamin
Field Supervisor

cc: Eric Alsmeyer, USACE, Wake Forest, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC
John Sullivan, FHWA, Raleigh, NC



North Carolina Department of Administration

Beverly Eaves Perdue, Governor

Moses Carey, Jr., Secretary

March 30, 2010

Ms. Jennifer Harris
State of N.C. Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Re: SCH File # 10-E-4220-0283; SCOPING; Scoping notice for the Southern and Eastern Wake Expressway, STIP Projects R-2721,-2828 and R-2829. Completion of the 540 Outer Loop from NC 55 in Wake County to the US 64/US 264 bypass in Knightdale, approximate distance of 29 miles.

Dear Ms. Harris:

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 that reads "Chrys Baggett (576)".

Ms. Chrys Baggett
State Environmental Review Clearinghouse

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

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: Valerie McMillan
State Clearinghouse

FROM: Melba McGee *MM*
Environmental Review Coordinator

RE: 10-0283 Scoping, Southern and Eastern Wake Expressway in Wake
County to US 64/264 Bypass in Knightdale

DATE: March 26, 2010

The Department of Environment and Natural Resources has reviewed the proposed project. The attached comments are for the applicant's consideration. More specific comments will be provided during the environmental review process.

Thank you for the opportunity to respond. If during the preparation of the environmental document, additional information is needed, the applicant is encouraged to notify our respective divisions.

Attachments



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

March 22, 2010



MEMORANDUM

TO: Melba McGee, DENR Environmental Coordinator

FROM: ^{HL} Harry LeGrand, Natural Heritage Program

SUBJECT: Scoping – Southern and Eastern Wake Expressway (Completion of the 540 Outer Loop from NC 55 in Wake County to the US 64/264 Bypass in Knightdale), Wake County; STIP Projects R-2721, R-2828, and R-2829

REFERENCE: Project No. 10-0283

The Natural Heritage Program has a number of records of rare species, significant natural heritage areas, and conservation/managed areas within the project area. The comments below are arranged from west (NC 55) to east (US 64-264 Bypass), and they only relate to features in our database located within a mile of the proposed corridor, not for the entire study area boundary. Several maps are enclosed that show such features.

The proposed corridor would be located several tenths of a mile north of Middle Creek Park, owned and operated by Wake County. It appears that the park will not be impacted, if the highway is built where shown in the scoping notice.

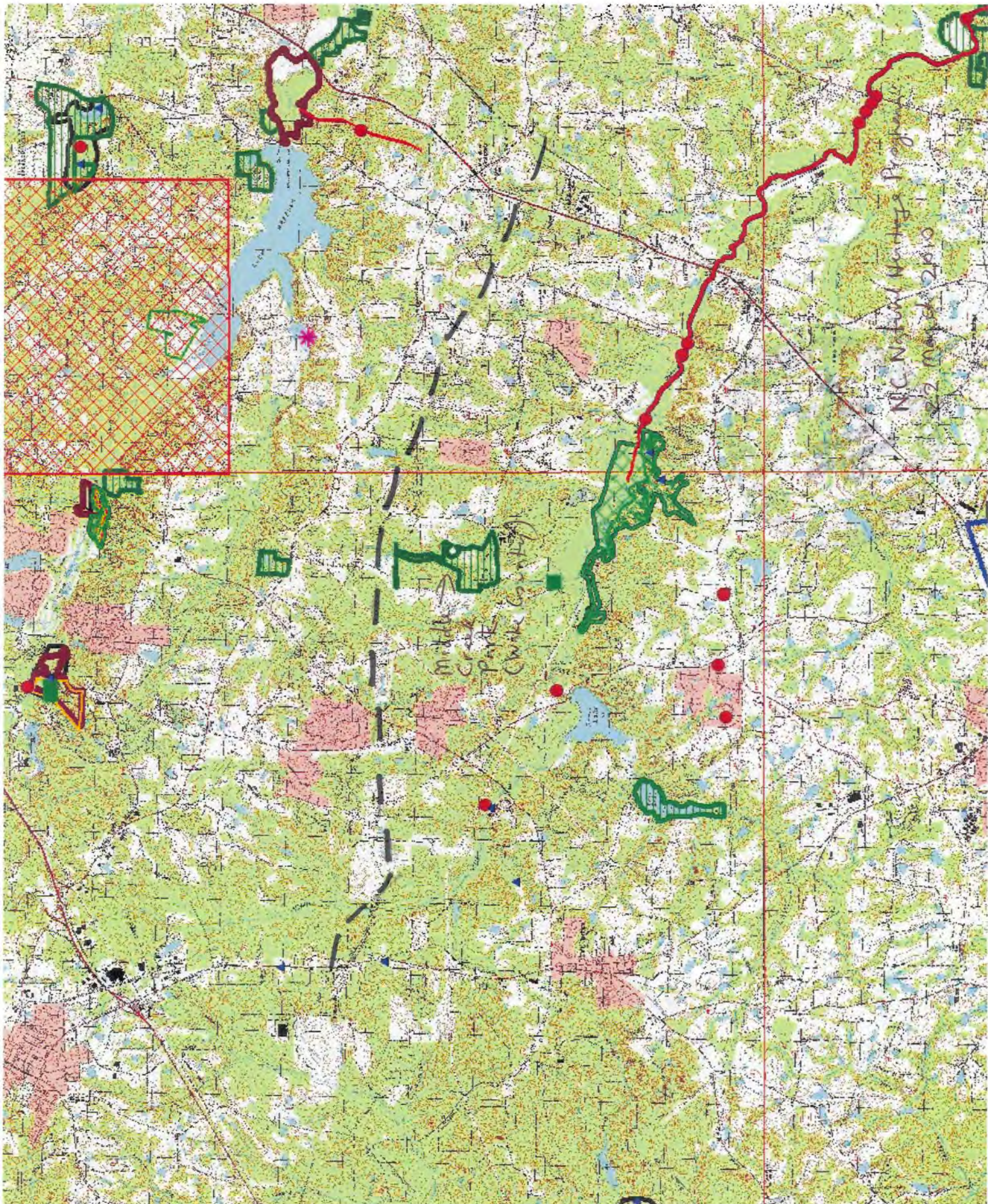
The proposed highway will cross the Nationally significant Swift Creek (Wake/Johnston) Aquatic Habitat. This body of water contains numerous existing records of rare mussel species (see attached Swift Creek Aquatic Habitat material), including the Federally Endangered dwarf wedgemussel (*Alasmidonta heterodon*). Thus, it is extremely important that consultation with the U.S. Fish and Wildlife Service about the project and potential impacts to this species, as well as to other rare species, be done early in the planning process.

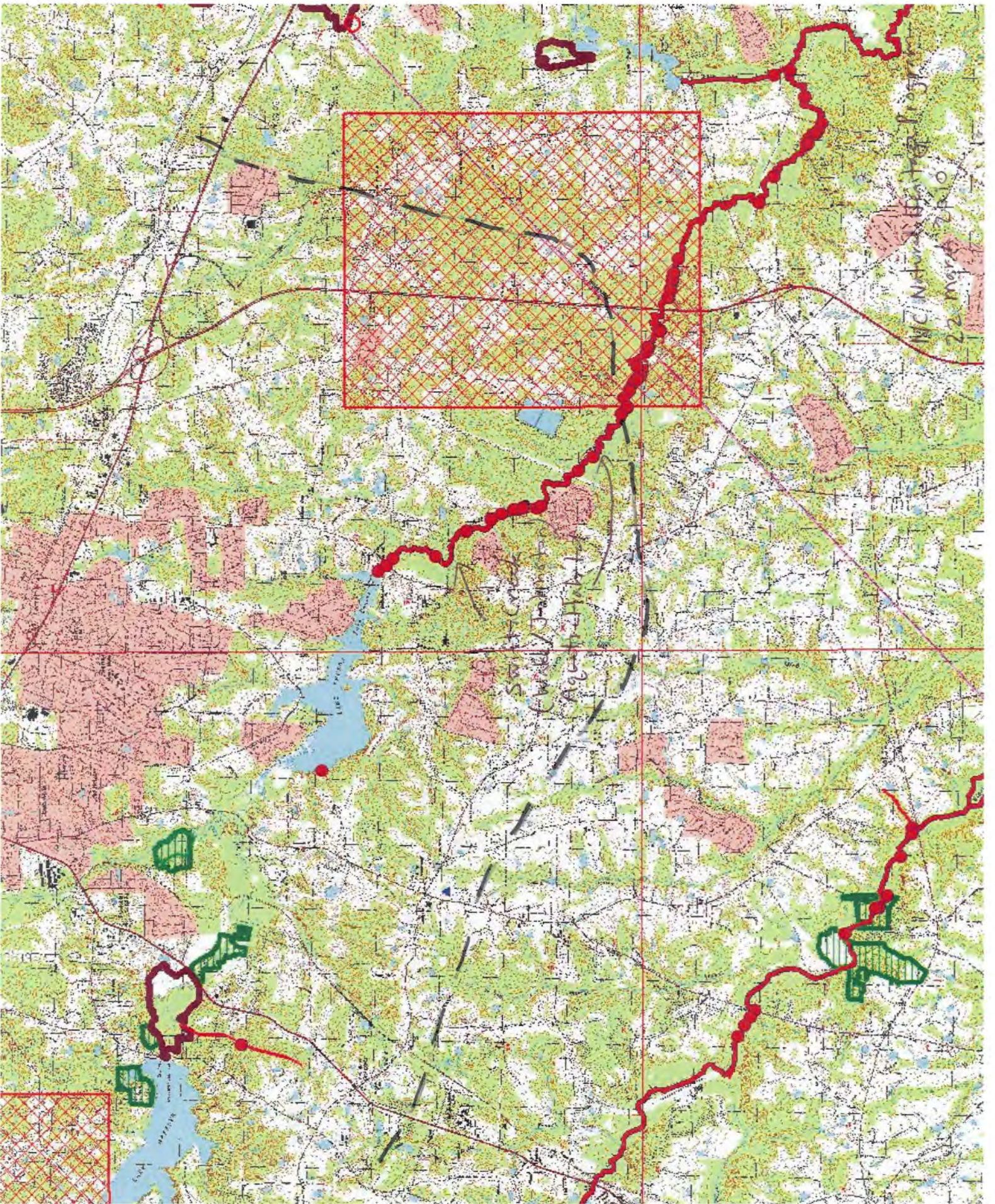
The proposed highway will also cross the Neuse River, near a small tract owned by Wake County, as open space land. In addition, there is a County-significant natural area identified as the Neuse River (Clayton) Forests that lies along a considerable stretch of the river. Though the impacts to the natural area are inevitable with a new bridge crossing, impacts to the river itself do not appear to be of Natural Heritage concern because of the apparent absence of rare species near the crossing and for a number of miles downstream. Nonetheless, it is important to keep sediment from reaching the river, as there are rare aquatic species locations in the river much farther south toward Clayton.

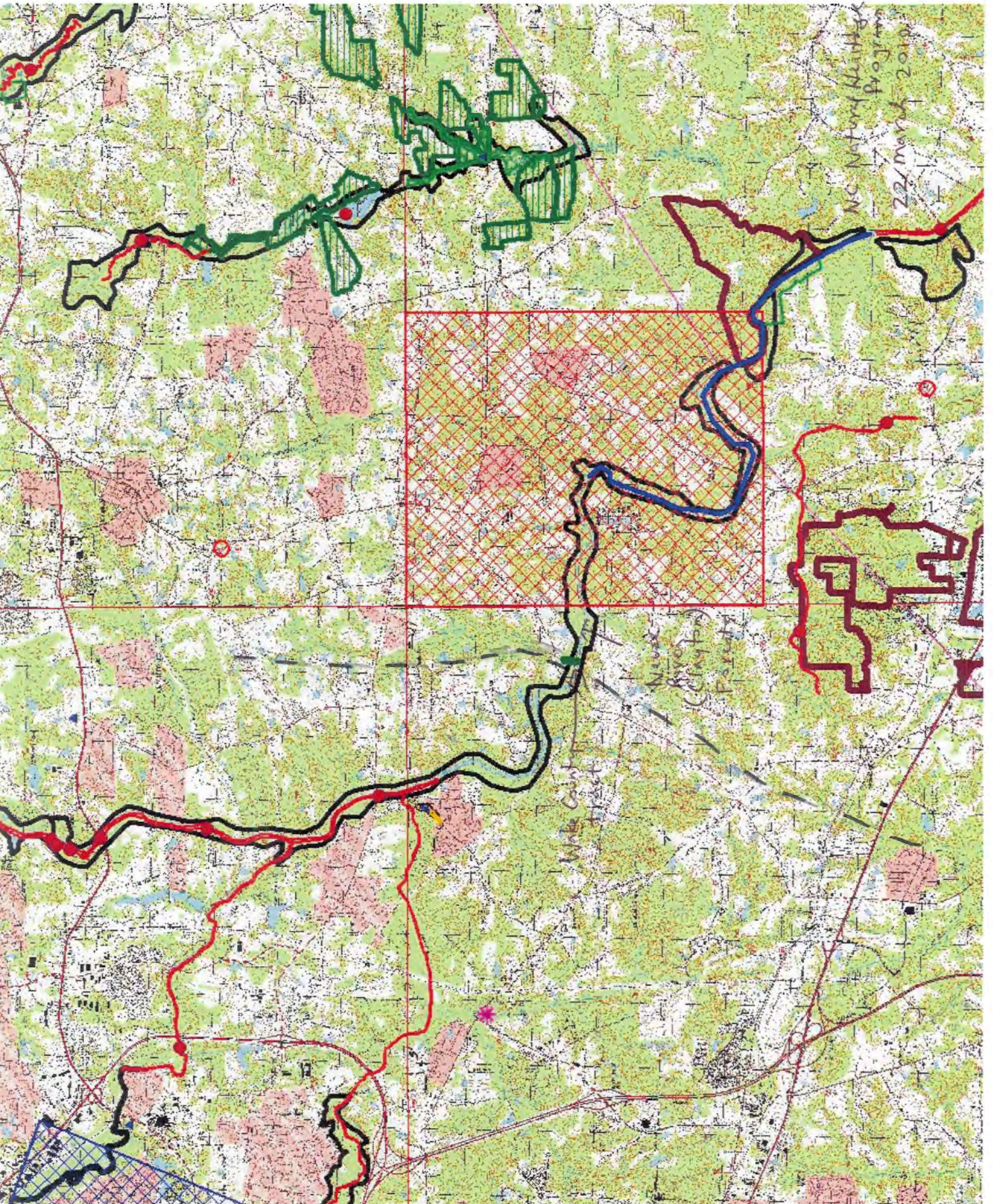
In general, the proposed route does not appear to impact any significant sites and rare species, away from Swift Creek and the Neuse River. However, there will likely be impacts to the forests along the Neuse River, and there is considerable concern for impacts to the waters of Swift Creek.

Please do not hesitate to contact me at 919-715-8697 if you have questions or need further information.

Enclosures







NC Natural Heritage Program
22 March 2010

White County
New River (Catawbas)

UNIVERSITY OF NORTH CAROLINA

Significant Natural Heritage Area Report

22 March 2010

Name Swift Creek (Wake/Johnston) Aquatic Habitat

IDENTIFIERS

Site ID 781

Site Alias

Macro Site Name

Mega Site Name

Site Relations



Owner Abbr.

Owner

Owner Comments

PW NC PUBLIC WATERS

LOCATORS

County Johnston (NC)

Wake (NC)

Latitude 353455N

Longitude 0783029W

Quad Powhatan
Edmondson
Garner

Watershed Upper Neuse

Directions This portion of Swift Creek is located in the Neuse River Basin of Johnston and Wake counties. The significant portion of the aquatic habitat includes the reach below Lake Benson Dam in Wake County to the confluence with Middle Creek in Johnston County. Also includes portion of White Oak Creek from the confluence with Swift Creek upstream to Austin Pond.

SITE DESCRIPTION

Minimum Elevation:

Feet

Meters

Survey P

Maximum Elevation:

Feet

Meters

Site Description

This aquatic habitat is contained entirely in the Piedmont Province. The rare species located in the creek include: dwarf wedge mussel, yellow lance, Atlantic pigtoe, green floater, triangle floater, Roanoke slabshell, squawfoot, eastern lampmussel, notched rainbow, Neuse River waterdog, and Carolina madtom.

Key Enviro Factors

Climate Description

Land Use History

Cultural Features

Additional Topics

NW->SE

VECTOR

SITE DESIGN

Site Mapped

Mapped Date

Designer

Boundary Justification

Primary and Secondary Area

242.45 Acres

Primary Area

242.45 Acres

Site Comments

Ground Survey Date 1998

Aerial Survey Date

SITE SIGNIFICANCE

Significance National

Site Significance Comments

Endangered animal species; high quality aquatic ecosystem.

Biodivsig rating

B1 - Outstanding

Biodivsig Comments

Other Values

Other Values Comments

Significant Natural Heritage Area Report

22 March 2010

Name Swift Creek (Wake/Johnston) Aquatic Habitat

Protection Urgency

Protection Urgency Comments

Management Urgency

Management Urgency Comments

REAL ESTATE/PROTECTION

Conservation Intentions High Quality Waters designation

Number of Tracts

Designation

Protection Comments No protection status

MANAGEMENT

Land Use Comments

Natural Hazard Comments

Exotics Comments

Offsite

Information Needs

Management Needs

Managed Area Relations

ELEMENT OCCURRENCES

<u>Scientific Name</u>	<u>Common Name</u>	<u>G Rank</u>	<u>S Rank</u>	<u>EO Rank</u>	<u>EO ID</u>
Noturus furiosus	Carolina Madtom	G2	S2	H?	9621
Alasmidonta heterodon	Dwarf Wedgemussel	G1G2	S1	BC	13799
Alasmidonta undulata	Triangle Floater	G4	S2	E	8700
Elliptio lanceolata	Yellow Lance	G2G3	S1	BC	21894
Elliptio lanceolata	Yellow Lance	G2G3	S1	BC	21890
Elliptio roanokensis	Roanoke Slabshell	G3	S1	E	6291
Elliptio roanokensis	Roanoke Slabshell	G3	S1	E	26000
Fusconaia masoni	Atlantic Pigtoe	G2	S1	AB	11695
Lasmigona subviridis	Green Floater	G3	S1	X?	15369
Strophitus undulatus	Creeper	G5	S2	E	14759
Strophitus undulatus	Creeper	G5	S2	E	6567
Villosa constricta	Notched Rainbow	G3	S3	E	5097

REFERENCES

<u>Reference Code</u>	<u>Full Citation</u>
U93SMI01NCUS	Smith, I.K., H.E. LeGrand, S.P. Hall, Z.E. Murrell, C.W. Nordman, and M.P. Schafale. 1993. Regional inventory for critical natural areas, wetland ecosystems, and endangered species habitats, of the Albemarle-Pamlico Estuarine region: Phase 3. NC Natural Heritage Program, Div. of Parks and Recreation, Dept. of Environment, Health, and Natural Resources, Raleigh, NC.
U92ALD01NCUS	Alderman, J.M. 1992. Station locations by species for proposed critical habitats. NC Wildlife Resources Report. Nongame and Endangered Wildlife Program, NC Wildlife Resources Commission, Division of Wildlife Management, Raleigh, NC.
U91ALD01NCUS	Alderman, J.M. 1991. North Carolina Status Surveys for Fusconaia masoni, Elliptio lanceolata, and Toxolasma pullus. Nongame Project Report to U.S. Fish and Wildlife Service. Nongame and Endangered Wildlife Program, NC Wildlife Resources Commission, Division of Wildlife Management, Raleigh, NC.

VERSION

Significant Natural Heritage Area Report

22 March 2010

Name Swift Creek (Wake/Johnston) Aquatic Habitat

Version Date 2003-02-24

Version Author Kopplin

NC NHP County Element Search Results

Returned Elements: 92 using: WAKE ALL

 [Animal Assemblage 1] [Invertebrate Animal 17] [Natural Community 17] [Nonvascular Plant 4] [Vascular Plant 39]
 [Vertebrate Animal 14]

Major Group	Scientific Name	Common Name	State Status	Federal Status	State Rank	Global Rank	County - Status	Map - Habitat
Animal Assemblage	<i>Colonial Wading Bird Colony</i>	None	None	None	S3	G5	Wake - Current	Link
* Invertebrate Animal	<i>Alasmidonta heterodon</i>	Dwarf Wedgemussel	E	E	S1	G1G2	Wake - Current	Link
* Invertebrate Animal	<i>Alasmidonta undulata</i>	Triangle Floater	T	None	S2	G4	Wake - Current	Link
Invertebrate Animal	<i>Cambarus davidi</i>	Carolina Ladle Crayfish	SR	None	S2S3	G3	Wake - Current	Link
Invertebrate Animal	<i>Dibusa angata</i>	A Caddisfly	SR	None	S2	G5	Wake - Current	Link
* Invertebrate Animal	<i>Elliptio lanceolata</i>	Yellow Lance	E	FSC	S1	G2G3	Wake - Current	Link
* Invertebrate Animal	<i>Elliptio roanokensis</i>	Roanoke Slabshell	T	None	S1	G3	Wake - Current	Link
Invertebrate Animal	<i>Erynnis martialis</i>	Mottled Duskywing	SR	None	S2S3	G3	Wake - Obscure	Link
* Invertebrate Animal	<i>Fusconaia masoni</i>	Atlantic Pigtoe	E	FSC	S1	G2	Wake - Current	Link
Invertebrate Animal	<i>Gomphus septima</i>	Septima's Clubtail	SR	FSC	S1S2	G2	Wake - Obscure	Link
Invertebrate Animal	<i>Lampsilis radiata</i>	Eastern Lampmussel	T	None	S1S2	G5	Wake - Current	Link
Invertebrate Animal	<i>Lasmigona subviridis</i>	Green Floater	E	FSC	S1	G3	Wake - Current	Link
Invertebrate Animal	<i>Lithophane lemmeri</i>	Lemmer's Pinion	SR	None	S1S3	G3G4	Wake - Obscure	Link
Invertebrate Animal	<i>Orconectes carolinensis</i>	North Carolina Spiny Crayfish	SC	None	S3	G3	Wake - Historical	Link
Invertebrate Animal	<i>Papilio cresphontes</i>	Giant Swallowtail	SR	None	S2	G5	Wake - Obscure	Link
Invertebrate Animal	<i>Schizura sp. 1</i>	A New Prominent Moth	SR	None	S1S3	GU	Wake - Obscure	Link
* Invertebrate Animal	<i>Strophitus undulatus</i>	Creeper	T	None	S2	G5	Wake - Current	Link
* Invertebrate Animal	<i>Villosa constricta</i>	Notched Rainbow	SC	None	S3	G3	Wake - Current	Link
Natural Community	<i>Basic mesic forest (piedmont subtype)</i>	None	None	None	S2	G5T3	Wake - Current	Link
Natural Community	<i>Coastal plain semipermanent impoundment</i>	None	None	None	S4	G5	Wake - Current	Link
Natural Community	<i>Coastal plain small stream swamp (brownwater subtype)</i>	None	None	None	S2S3	G5T3T4	Wake - Current	Link
Natural Community	<i>Dry-mesic oak--hickory forest</i>	None	None	None	S5	G5	Wake - Current	Link
Natural Community	<i>Floodplain pool</i>	None	None	None	S2S3	G3?	Wake - Current	Link
Natural Community	<i>Granitic flatrock</i>	None	None	None	S2	G3	Wake - Current	Link

Natural Community	<i>Low elevation seep</i>	None	None	None	S3	G4?	Wake - Current	Link
Natural Community	<i>Mesic mixed hardwood forest (piedmont subtype)</i>	None	None	None	S4	G5T5	Wake - Current	Link
Natural Community	<i>Piedmont longleaf pine forest</i>	None	None	None	S1	G1?	Wake - Current	Link
Natural Community	<i>Piedmont monadnock forest</i>	None	None	None	S4	G5	Wake - Current	Link
Natural Community	<i>Piedmont/coastal plain acidic cliff</i>	None	None	None	S2?	G4	Wake - Current	Link
Natural Community	<i>Piedmont/coastal plain heath bluff</i>	None	None	None	S3	G4?	Wake - Current	Link
Natural Community	<i>Piedmont/low mountain alluvial forest</i>	None	None	None	S5	G5	Wake - Current	Link
Natural Community	<i>Piedmont/mountain bottomland forest</i>	None	None	None	S3?	G5	Wake - Current	Link
Natural Community	<i>Piedmont/mountain levee forest</i>	None	None	None	S3?	G5	Wake - Current	Link
Natural Community	<i>Piedmont/mountain semipermanent impoundment</i>	None	None	None	S4	G5	Wake - Current	Link
Natural Community	<i>Ultramafic outcrop barren</i>	None	None	None	S1	G1	Wake - Current	Link
Nonvascular Plant	<i>Campylopus oerstedianus</i>	Oersted's Campylopus	SR-D	None	S1	G1G3	Wake - Historical	Link
Nonvascular Plant	<i>Cleistocarpidium palustre</i>	Prairie Pleuridium	SR-D	None	S1	G5?	Wake - Current	Link
Nonvascular Plant	<i>Sphagnum subsecundum</i>	Orange Peatmoss	SR-P	None	S1	G5	Wake - Historical	Link
Nonvascular Plant	<i>Tortula plinthobia</i>	A Chain-teeth Moss	SR-O	None	S1?	G4G5	Wake - Historical	Link
Vascular Plant	<i>Acmispon helleri</i>	Carolina Birdfoot-trefoil	SR-T	FSC	S3	G3	Wake - Current	Link
Vascular Plant	<i>Agastache nepetoides</i>	Yellow Giant-hyssop	SR-P	None	S1	G5	Wake - Historical	Link
Vascular Plant	<i>Buchnera americana</i>	American Bluehearts	SR-P	None	SH	G5?	Wake - Historical	Link
Vascular Plant	<i>Cardamine douglassii</i>	Douglass's Bittercress	SR-P	None	S2	G5	Wake - Current	Link
Vascular Plant	<i>Carex reniformis</i>	Kidney Sedge	SR-P	None	S1	G4?	Wake - Historical	Link
Vascular Plant	<i>Carex tetanica</i>	Rigid Sedge	SR-P	None	S1	G4G5	Wake - Historical	Link
Vascular Plant	<i>Cirsium carolinianum</i>	Carolina Thistle	SR-P	None	S2	G5	Wake - Historical	Link
Vascular Plant	<i>Clematis catesbyana</i>	Coastal Virgin's-bower	SR-P	None	S2	G4G5	Wake - Historical	Link
Vascular Plant	<i>Cyperus granitophilus</i>	Granite Flatsedge	SR-T	None	S2	G3G4Q	Wake - Current	Link
Vascular Plant	<i>Dichantheium annulum</i>	Ringed Witch Grass	SR-P	None	S1	GNR	Wake - Historical	Link
Vascular Plant	<i>Dichantheium sp. 9</i>	A Witch Grass	SR-L	None	S2	G2G3	Wake - Historical	Link
Vascular Plant	<i>Didiplis diandra</i>	Water Purslane	SR-P	None	S1	G5	Wake - Current	Link
Vascular Plant	<i>Fothergilla major</i>	Large Witch-alder	SR-T	None	S3	G3	Wake - Current	Link
Vascular Plant	<i>Gillenia stipulata</i>	Indian Physic	SR-P	None	S2	G5	Wake - Current	Link

Vascular Plant	<i>Helenium brevifolium</i>	Littleleaf Sneezeweed	E	None	S2	G4	Wake - Historical	Link
Vascular Plant	<i>Isoetes piedmontana</i>	Piedmont Quillwort	T	None	S2	G3	Wake - Current	Link
Vascular Plant	<i>Liatris squarrulosa</i>	Earle's Blazing-star	SR-P	None	S2	G4G5	Wake - Current	Link
Vascular Plant	<i>Lindera subcoriacea</i>	Bog Spicebush	T	FSC	S2S3	G2G3	Wake - Current	Link
Vascular Plant	<i>Magnolia macrophylla</i>	Bigleaf Magnolia	SR-P	None	S2	G5	Wake - Current	Link
Vascular Plant	<i>Matelea decipiens</i>	Glade Milkvine	SR-P	None	S2	G5	Wake - Current	Link
Vascular Plant	<i>Micranthes pensylvanica</i>	Swamp Saxifrage	SR-P	None	S1	G5	Wake - Current	Link
Vascular Plant	<i>Monotropsis odorata</i>	Sweet Pinesap	SR-T	FSC	S3	G3	Wake - Historical	Link
Vascular Plant	<i>Polygala senega</i>	Seneca Snakeroot	SR-D	None	S2	G4G5	Wake - Current	Link
Vascular Plant	<i>Portulaca smallii</i>	Small's Portulaca	T	None	S2	G3	Wake - Current	Link
Vascular Plant	<i>Pseudognaphalium helleri</i>	Heller's Rabbit-Tobacco	SR-P	None	S3	G3G4	Wake - Current	Link
Vascular Plant	<i>Pycnanthemum virginianum</i>	Virginia Mountain-mint	SR-P	None	S1?	G5	Wake - Current	Link
Vascular Plant	<i>Rhus michauxii</i>	Michaux's Sumac	E-SC	E	S2	G2G3	Wake - Current	Link
Vascular Plant	<i>Ruellia humilis</i>	Low Wild-petunia	T	None	S1	G5	Wake - Historical	Link
Vascular Plant	<i>Ruellia purshiana</i>	Pursh's Wild-petunia	SR-O	None	S2	G3	Wake - Historical	Link
Vascular Plant	<i>Sagittaria weatherbiana</i>	Grassleaf Arrowhead	SR-T	FSC	S2	G3G4	Wake - Historical	Link
Vascular Plant	<i>Scutellaria australis</i>	Southern Skullcap	SR-P	None	S1	G47Q	Wake - Historical	Link
Vascular Plant	<i>Scutellaria nervosa</i>	Veined Skullcap	SR-P	None	S1	G5	Wake - Historical	Link
Vascular Plant	<i>Silphium terebinthinaceum</i>	Prairie Dock	SR-P	None	S2	G4G5	Wake - Historical	Link
Vascular Plant	<i>Solidago radula</i>	Western Rough Goldenrod	SR-P	None	S1	G5?	Wake - Historical	Link
Vascular Plant	<i>Symphotrichum laeve</i> var. <i>concinnum</i>	Narrow-leaf Aster	SR-P	None	S2	G5T4	Wake - Historical	Link
Vascular Plant	<i>Thermopsis mollis</i>	Appalachian Golden-banner	SR-P	None	S2	G3G4	Wake - Current	Link
Vascular Plant	<i>Tradescantia virginiana</i>	Virginia Spiderwort	SR-P	None	S1	G5	Wake - Current	Link
Vascular Plant	<i>Trifolium reflexum</i>	Buffalo Clover	SR-T	None	S1S2	G3G4	Wake - Current	Link
Vascular Plant	<i>Trillium pusillum</i> var. <i>virginianum</i>	Virginia Least Trillium	E	FSC	S1	G3T2	Wake - Current	Link
Vertebrate Animal	<i>Aimophila aestivalis</i>	Bachman's Sparrow	SC	FSC	S3B, S2N	G3	Wake - Historical	Link
Vertebrate Animal	<i>Ambloplites cavifrons</i>	Roanoke Bass	SR	FSC	S2	G3	Wake - Current	Link
Vertebrate Animal	<i>Ambystoma tigrinum</i>	Eastern Tiger Salamander	T	None	S2	G5	Wake - Current	Link
Vertebrate Animal	<i>Condylura cristata</i> pop. 1	Star-nosed Mole - Coastal Plain Population	SC	None	S2	G5T2Q	Wake - Current	Link
Vertebrate Animal	<i>Haliaeetus leucocephalus</i>	Bald Eagle	T	None	S3B, S3N	G5	Wake - Current	Link

Vertebrate Animal	<i>Hemidactylium scutatum</i>	Four-toed Salamander	SC	None	S3	G5	Wake - Current	Link
Vertebrate Animal	<i>Heterodon simus</i>	Southern Hognose Snake	SC	FSC	S2	G2	Wake - Obscure	Link
Vertebrate Animal	<i>Lampetra aepyptera</i>	Least Brook Lamprey	T	None	S2	G5	Wake - Current	Link
Vertebrate Animal	<i>Lanius ludovicianus</i>	Loggerhead Shrike	SC	None	S3B,S3N	G4	Wake - Current	Link
Vertebrate Animal	<i>Myotis austroriparius</i>	Southeastern Myotis	SC	FSC	S2	G3G4	Wake - Historical	Link
Vertebrate Animal	<i>Necturus lewisi</i>	Neuse River Waterdog	SC	None	S3	G3	Wake - Current	Link
Vertebrate Animal	<i>Noturus furiosus</i>	Carolina Madtom	T	FSC	S2	G2	Wake - Current	Link
Vertebrate Animal	<i>Picoides borealis</i>	Red-cockaded Woodpecker	E	E	S2	G3	Wake - Historical	Link
Vertebrate Animal	<i>Sciurus niger</i>	Eastern Fox Squirrel	SR	None	S3	G5	Wake - Current	Link

NC NHP database updated on Friday, February 12th, 2010.
 Search performed on Monday, 22 March 2010 @ 10:15:47 EDST
[Explanation of Codes](#)



North Carolina Department of Environment and Natural Resources

Division of Water Quality
Coleen H. Sullins
Director



March 23, 2010

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

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

From: Brian Wrenn, Transportation Permitting Unit, NC Division of Water Quality *BLW*

Subject: Scoping comments on proposed Southern and Eastern Wake Expressway from NC55 to US 64/US 264 Bypass in Wake County, TIP Project Nos. R-2721, R-2828, and R-2829, State Clearinghouse Project No. 10-0283.

Reference your correspondence dated January 25, 2010 in which you requested comments for the referenced project. Preliminary analysis of the project reveals the potential for multiple impacts to perennial streams and jurisdictional wetlands in the project area. More specifically, impacts to:

Stream Name	River Basin	Stream Classification(s)	Stream Index Number	303(d) Listing
Lake Wheeler	Neuse	WS-III;NSW	27-43-(1)	
Lake Benson	Neuse	WS-III;NSW;CA	27-43-(5.5)	
Swift Creek	Neuse	C;NSW	27-43-(8)	Biological Integrity
Dutchman's Branch	Neuse	WS-III;NSW	27-43-4.5	
Sunset Lake	Neuse	B;NSW	27-43-15-(2)	
Bass Lake	Neuse	B;NSW	27-43-15-3	
Camp Branch	Neuse	C;NSW	27-43-15-5	
Rocky Branch	Neuse	C;NSW	27-43-15-4.5	
Bells Lake	Neuse	C;NSW	27-43-15-6	
Panther Branch	Neuse	C;NSW	27-43-15-9	
Terrible Creek	Neuse	B;NSW	27-43-15-8	
Middle Creek	Neuse	C;NSW	27-43-15	Biological Integrity, Low DO, Turbidity
White Oak Creek	Neuse	C;NSW	27-43-11	
Mahlers Creek	Neuse	C;NSW	27-43-9	
Walnut Creek	Neuse	C;NSW	27-34-(4)	Biological Integrity, Copper, PCB, Turbidity
Big Branch	Neuse	C;NSW	24-34-11	
Neuse River	Neuse	C;NSW	27-(36)	
Little Creek	Neuse	C;NSW	27-43-15-10	Biological Integrity
Gully Branch	Neuse	C;NSW	27-43-15-10-2	

Transportation Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
Location: 2321 Crabtree Blvd., Raleigh, North Carolina 27604
Phone: 919-733-1786 | FAX: 919-733-6893
Internet: <http://h2o.enr.state.nc.us/h2owetlands/>

One
North Carolina
Naturally

Buffalo Creek	Neuse	C;NSW	27-43-15-11	
---------------	-------	-------	-------------	--

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 NC Turnpike Authority (NCTA) consider the following environmental issues for the proposed project:

Project Specific Comments:

1. All of the named streams in the study area have a supplemental classification of 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 these streams. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in NCDOT's NPDES BMP Toolbox.
2. Swift Creek, Middle Creek, Walnut Creek, and Little Creek are listed as 303(d) waters of the State. They are listed for a variety of reasons including biological integrity, low dissolved oxygen, copper, PCBs, and turbidity. 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* to reduce the risk of nutrient runoff to these creeks. Of particular concern is the listing for Middle Creek due to copper. A recent NCDOT study on stormwater runoff from bridges has shown that copper is a pollutant in stormwater runoff that frequently exceeds state standards. NCDWQ requests that road design plans provide treatment of the storm water runoff through structural best management practices as detailed in NCDOT's NPDES BMP Toolbox.
3. Review of the project reveals the presence of surface waters classified as Water Supply Critical Area (WS CA) in the project study area. Given the potential for impacts to these resources during the project implementation, NCDWQ requests that NCDOT strictly adhere to North Carolina regulations entitled *Design Standards in Sensitive Watersheds* (15A NCAC 04B .0124) throughout design and construction of the project. This would apply for any area that drains to streams having WS CA classifications. Should a crossing be located within the WS CA, NCDOT will be required to design, construct, and maintain hazardous spill catch basins in the project area. The number of catch basins installed shall be determined by the design of the crossing. Runoff shall enter the basin(s) prior to flowing into the stream. The basin(s) shall be designed in consultation with NCDWQ.
4. This project 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.
5. Due to the fact that this project is a new location road being constructed in areas with impaired streams and water supply watershed critical areas, NCDWQ will require a quantitative secondary and cumulative impacts analysis. This analysis shall quantitatively model impacts to water quality from secondary and cumulative development resulting from this road project. This analysis shall be conducted in consultation with NCDWQ.
6. It is NCDWQ's understanding that NCTA intends to develop this project using FHWA's SAFETEA-LU 6002 process. NCDWQ would prefer that NCTA, as a division of NCDOT, develop this project and all future projects under the multi-agency Merger Process. NCDOT along with its partnering and participating agencies, and under the direction of the Interagency Leadership Team, has expended considerable time and money to develop, implement, and streamline the Merger Process. Furthermore, NCDWQ is of the opinion that the Merger Process is a more accountable process that

results in projects that hold up under scrutiny of the NEPA process and Sections 404 and 401 of the Clean Water Act.

General Project Comments:

1. The environmental document shall 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 assessment 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 *Stormwater Best Management Practices*, 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, NCDOT 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 perennial 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. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDOT 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.
6. If a bridge is being replaced with a hydraulic conveyance other than another bridge, NCDWQ believes the use of a Nationwide Permit may be required. Please contact the US Army Corp of Engineers to determine the required permit(s).
7. If the old bridge is removed, no discharge of bridge material into surface waters is allowed unless otherwise authorized by the US ACOE. Strict adherence to the Corps of Engineers guidelines for bridge demolition will be a condition of the 401 Water Quality Certification.
8. 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) shall not be placed in the stream when possible.
9. 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*.

10. 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.
11. 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 should 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.
12. Placement of culverts and other structures in waters, streams, and wetlands shall be 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 disequilibrium 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.
13. 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 shall 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.
14. If foundation test borings are necessary; it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3624/Nationwide Permit No. 6 for Survey Activities.
15. 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.
16. All work in or adjacent to stream waters shall be conducted in a dry work area unless otherwise approved by NCDWQ. 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 should be used to prevent excavation in flowing water.
17. Sediment and erosion control measures shall not be placed in wetlands and streams.
18. Borrow/waste areas shall avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas could precipitate compensatory mitigation.

19. 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.
20. Heavy equipment shall 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.
21. In most cases, NCDWQ prefers the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure shall be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed and restored to the natural ground elevation. The area shall be stabilized with grass and planted with native tree species. Tall fescue shall not be used in riparian areas.
22. 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.

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

cc: Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office
Clarence Coleman, Federal Highway Administration
Chris Militscher, Environmental Protection Agency (electronic copy only)
Travis Wilson, NC Wildlife Resources Commission
File Copy



☒ North Carolina Wildlife Resources Commission ☒

Gordon Myers, Executive Director

MEMORANDUM

TO: Melba McGee
Office of Legislative and Intergovernmental Affairs, DENR

FROM: Travis Wilson, Highway Project Coordinator
Habitat Conservation Program

DATE: March 16, 2010

SUBJECT: Response to the start of study notification from the N. C. Turnpike Authority regarding fish and wildlife concerns for the proposed Southern and Eastern Wake Expressway, Wake and Johnston Counties, North Carolina. TIP Nos. R-2721, R-2828, and R-2829, SCH Project No. 10-0283

This memorandum responds to a request 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).

NCTA is proposing to construct a multilane facility on new location. We have review the project study area and identified multiple resources that should be considered for avoidance and minimization during the planning of this project. Potential impacts include new crossings of Swift Creek, Middle Creek and the Neuse River. Our records indicate the following state and federal listed species are located in these drainages:

<i>Alasmidonta heterodon</i>	Dwarf Wedgemussel
<i>Alasmidonta undulata</i>	Triangle Floater
<i>Elliptio lanceolata</i>	Yellow Lance
<i>Elliptio roanokensis</i>	Roanoke Slabshell
<i>Fusconaia masoni</i>	Atlantic Pigtoe
<i>Lampsilis radiata</i>	Eastern Lampmussel
<i>Strophitus undulatus</i>	Creeper
<i>Villosa constricta</i>	Notched Rainbow
<i>Noturus furiosus</i>	Carolina Madtom
<i>Necturus lewisi</i>	Neuse River Waterdog

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

Memo

2

March 16, 2010

The Neuse River at this location is also designated as an Anadromous Fish Spawning Area as well as an Inland Primary Nursery Area.

Furthermore we will reiterate the benefits of utilizing the NEPA/404 Merger Process for the planning and development of this project. The Merger process is the product of years of interagency coordination that has resulted in a valuable method for progressing transportation projects through planning by outlining expectations for the level of information and feedback provided by all parties at specific points in the process. Having participated in both the Section 6002 and Merger processes, the Merger process presents a consistent and predictable platform for decision making and documentation. However to help further 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

and,

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 (COE). If the COE 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.

Memo

Page 3

March 16, 2010

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.

cc: Gary Jordan, U.S. Fish and Wildlife Service, Raleigh
Rob Ridings, DWQ, Raleigh
Eric Alsmeyer, USACE, Raleigh
Chris Militscher, EPA

DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Inter-Agency Project Review Response

FEB 18 2010

NC PWSS

Project Number
10-0283

County
Wake, Johnston

Project Name NC Turnpike Authority/NCDOT

Type of Project

Scoping - Scoping notice for Southern & Eastern Wake Expressway, STIP Projects R-2721, R-2828 & R-2829. Complete 540 Outer Loop from NC55 to US 64/US 264 bypass, approx 29 miles

Comments provided by:

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

Name Michael Douglas-Raleigh RO

Date: 02/12/2010

Telephone number: 919-791-4200

Program within Division of Environmental Health:

Public Water Supply

Other, Name of Program: _____

Response (check all applicable):

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



Any relocation of water mains must be approved by the Public Water Supply Section - Technical Services Branch prior to construction or relocation.

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

FEB 15

DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH



Project Number	10-0283
County	Wake, Johnston

Inter-Agency Project Review Response

Project Name NC Turnpike Authority/NCDOT Type of Project Scoping - Scoping notice for Southern & Eastern Wake Expressway, STIP Projects R-2721, R-2828 & R-2829. Complete 540 Outer Loop from NC55 to US 64/US 264 bypass, approx 29 miles

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

Jim McRight
Reviewer

PWSS
Section/Branch

02/12/2010
Date

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: WAKE
JOHNSTON

F02: HIGHWAYS AND ROADS

STATE NUMBER: 10-E-4220-028
DATE RECEIVED: 02/03/2010
AGENCY RESPONSE: 03/23/2020
REVIEW CLOSED: 03/27/2020

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

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DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION
TRIANGLE J COG

PROJECT INFORMATION

APPLICANT: State of N.C. Turnpike Authority
TYPE: National Environmental Policy Act
Scoping

DESC: Scoping notice for the Southern and Eastern Wake Expressway, STIP Projects R-2721, -2828 and R-2829. Completion of the 540 Outer Loop from NC 55 in Wake County to the US 64/US 264 bypass in Knightdale, approximate distance of 29 miles.

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.



RECEIVED

FEB 4 2010

NC Floodplain Mapping Program

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

SIGNED BY:

Jennifer Shee

DATE: 2/22/2010

The proposed alignment crosses multiple special flood hazard areas and FEMA regulated floodways. Each crossing within areas

a floodway will require, prior to construction, either a:

(1) no-rise certification for crossings that do not cause an increase in base flood elevations; or

(2) submittal and approval of Conditional Letter of Map Revision for projects that increase base flood elevations.

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: WAKE
JOHNSTON

F02: HIGHWAYS AND ROADS

STATE NUMBER: 10-E-4220-0283
DATE RECEIVED: 02/03/2010
AGENCY RESPONSE: 03/23/2020
REVIEW CLOSED: 03/27/2020

MS HOLLY GILROY
CLEARINGHOUSE COORDINATOR
DEPT OF AGRICULTURE
1001 MSC - AGRICULTURE BLDG
RALEIGH NC

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

SIGNED BY:

Holly Gilroy

DATE:

2/19/2010



Steven W. Troxler
Commissioner

North Carolina Department of Agriculture
and Consumer Services
Agricultural Services

Dewitt Hardee
Environmental Program
Manager

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

February 19, 2010



State #: 10-E-4220-0283
RE: Southern and Eastern Wake Expressway

Dear Ms McMillan:

The footprint of the proposed Southern and Eastern Wake Expressway has potential of irreversible damage and increases the loss of prime farm and forest land thereby negatively impacting agricultural environmental balance in the immediate area. The US DOT and the NCDOT should give due consideration of routing and / or designs that reduce to loss of farm and forest land activities due to potential negative environmental and economic impacts by the placement of the road's footprint. Providing friendly and accessible agricultural crossover points for agricultural equipment and livestock in conjunction with the use of agricultural easements at access points and along the proposed right ways would lessen the negative impacts on the adjacent farms and forest land.

Farm and forest lands are natural resources with no mitigation process. These agribusiness resources cannot be replaced nor relocated once converted to other uses. Placement of the Expressway should give consideration of farms near existing Voluntary Agricultural Districts (VAD) designed to recognize and protect key agricultural production centers. Transportation planning priorities should be considered highway placement and its potential negative impact on VAD and land resources. These plans should also negate the formation of incompatible and inaccessible land units that degrades agricultural production capabilities.

Agricultural production incomes from locally grown products have a considerable multiplier influence. It is estimated that for every 40 acres converted from agricultural production, one agribusiness job and its associated economic activity is lost indefinitely. Additional acreage loss is most likely to occur beyond the Southern and Eastern Wake Expressway footprint due to the subdivision and reduced agricultural production capacity from development pressures. Furthermore the costs of community services used by agricultural business are minimal and therefore are net contributors to county budgets. Both current and future cost for the conversion land from production agriculture is needed for an accurate evaluation which is not accurately recognized by the Farmland Conversion Impact Rating using Form AD 1006.

Based on the secondary, cumulative, and direct impacts, this project has potential to adversely impact the agricultural environmental and economic resources in the proposed area. The total negative impact on the environmental and agribusiness economy will be proportionately related to the total acres of farm and forest land taken out of production.

Respectfully,

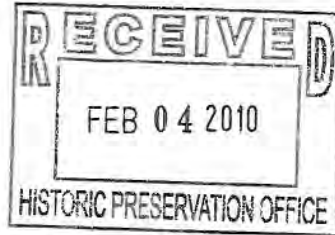
Dewitt Hardee
Environmental Program Manager

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: WAKE
JOHNSTON

F02: HIGHWAYS AND ROADS

STATE NUMBER: 10-E-4220-0283
DATE RECEIVED: 02/03/2010
AGENCY RESPONSE: 03/23/2020
REVIEW CLOSED: 03/27/2020



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

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DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION
TRIANGLE J COG

PROJECT INFORMATION

APPLICANT: State of N.C. Turnpike Authority
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:

2.10.10

CH 98-0457

A - DAA
2/5/10

S - PSL 2/11/10

Dis = 2/11/10

FEB 05 2010



North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, 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

February 15, 2010

MEMORANDUM

TO: Jennifer Harris
North Carolina Turnpike Authority

FROM: Peter Sandbeck *PBS for PBS*

SUBJECT: Start of Study and Agency Scoping Meeting Notification, Southern And Eastern Wake Expressway, R-2721, R-2828 and R-2829, Wake and Johnston Counties, CH 98-0457

Thank you for your letter of January 25, 2010, concerning the above project. We have reviewed the information that accompanied your letter and offer the following comments.

The proposed study area for the Southern and Eastern Expressway contains numerous Native American and historic period archaeological sites, some of which may be eligible for inclusion in the National Register of Historic Places. In addition, much of the study area has never been surveyed to determine the presence or significance of archaeological resources. We recommend that you or your cultural resource consultants contact us as project corridors and alternates are developed for the project. We will then be able better able to evaluate the potential effects upon archaeological resources and the need for any additional archaeological investigations prior to project implementation.

In terms of historic buildings and districts, we urge your consultants to consult our maps and files for the latest updates to the Wake County inventory.

We look forward to working with you and your staff on this project. Representatives of our agency plan to attend the scoping meeting on February 16, 2010.

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.

cc: Steven D. DeWitt, NC Turnpike Authority
Matt Wilkerson, NCDOT
State Clearinghouse



OFFICE OF THE MAYOR

TOWN of CARY

P.O. Box 8005

316 North Academy Street

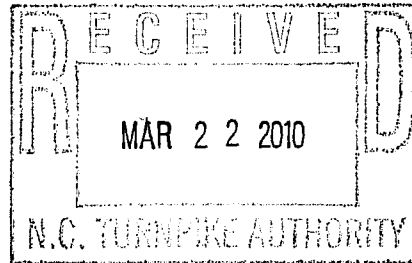
Cary, NC 27512-8005

tel: 919-469-4011

fax: 919-460-4910

www.townofcary.org

March 17, 2010



Ms. Jennifer Harris, P.E.
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699

Subject: Comments on the Study of the Triangle Expressway Southeast Connector

Dear Ms. Harris:

On behalf of the Cary Town Council, I respectfully submit the following comments in response to your February 4, 2010 request for comments on the environmental impact study (EIS) process for the Triangle Expressway Southeast Connector from NC 55 in Apex to the US 64/US 264 Bypass in Knightdale. The comments are listed below and include phases of the project such as the environmental impact study process, design, and construction.

- The NCTA should work closely with the Town to establish a thorough and proactive communications plan. The NCTA should implement an aggressive public information and educational initiative for the potentially impacted residents and neighborhoods. The NCTA should hold regular meetings with the Town of Cary to present the communications plan and discuss concerns with the environmental impact study, construction effects on the quality of life, and traffic flow impacts among other issues. The NCTA should provide ample time for press releases such as community meetings, detours, and other pertinent information.
- The NCTA should investigate providing an interchange within the Town of Cary Comprehensive Planning Area. An interchange is currently proposed at the intersection of Kildaire Farm Road and Holly Springs Road. Due to growth and development, there may be too much traffic at a single point and an additional interchange may be needed in this area.
- The NCTA should closely investigate any impacts of moving the corridor off the protected alignment. This could negatively impact residential communities, proposed greenways, proposed parks, and proposed thoroughfare improvements. The NCTA should avoid impacting four current and proposed parks within the study area, including the existing Middle Creek Park and the proposed Barley Park. In addition, there are three greenways existing and proposed that cross perpendicular to the protected corridor. The greenway names are: Middle Creek Greenway, Camp

Ms. Jennifer Harris, P.E.
March 17, 2010

Branch Greenway, and Optimist Farm Greenway. There is an existing historical farm, the Olive Farm, located south of the protected corridor. In addition, there are several small historical buildings within the study area. There is an existing water treatment facility, the South Cary Water Reclamation Facility, located at the southern end of West Lake Road. Future thoroughfare improvements and development site plans have been planned with respect to the location of the protected corridor.

- The NCTA should address Town of Cary concerns about how changes to the protected corridor could impact the recently adopted Cary Comprehensive Transportation Plan. The Comprehensive Transportation Plan (CTP) was adopted by Town Council in 2008. The transportation network in Cary was analyzed for connectivity, social, economic, ecological, and traffic data with respect to the location of the protected corridor. Potential impacts to these components of the CTP should be considered through the EIS.
- The NCTA should work closely with Town of Cary to review and provide comments for the alternate alignments that will be included in the draft EIS. The NCTA should contact the Town of Cary in a reasonable amount of time prior to releasing the draft EIS for review and comments. The Town will review and provide comments to proactively form a communications plan to respond to the anticipated release of the draft EIS. The NCTA should continue to accept and review stakeholder comments throughout the EIS, design, and construction stages of the project.
- The NCTA should plan for and address noise impacts before, during and after construction. The NCTA should revise the NCDOT Traffic Noise Abatement Policy to plan for and provide noise barriers for all subdivisions approved, not just properties with building permits, prior to the record of decision (ROD). The NCDOT should revise this policy prior to the final EIS for the Triangle Expressway Southeast Connector, and the revised policy should apply for this project.
- The NCTA should work closely with the Town of Cary early in the process to identify and mitigate utility conflicts. Excavations and heavy construction operations over and around utility infrastructure have the potential to damage lines and disrupt service. Potential proposed and existing Town of Cary utility conflicts within the study area include: the South Cary Water Reclamation Facility, water towers, fiber optic cable, traffic signal cable, water and sanitary sewer service (see Attachment A for approximate existing and proposed water and sewer locations). Potential proposed and existing external utility conflicts include Progress Energy distribution lines, substations, and transmission lines. Other possible proposed and existing conflicts include Time Warner Cable, gas lines, and cellular towers, among others.

Ms. Jennifer Harris, P.E.
March 17, 2010

- The Town of Cary requests that the NCTA evaluate traffic impacts associated with construction. The NCTA should evaluate emergency response routes to ensure that service can be maintained. Traffic detour routes can lead to increased congestion and delays, which would increase driver inconvenience, confusion, and frustration. It is standard practice at the Town of Cary to give ample notice to drivers and residents of when, where, and how long a detour will be in place. In addition, the NCTA should give consideration to coordinating with schools and bus routes, coordinating signal work with the Town of Cary, coordinating the C-Tran bus route with the Town of Cary, and ensure that mobility is maintained through the construction area. The NCTA should evaluate and study the corridor for transit improvements, such as an HOV lane, buses, and rail.
- The NCTA should consider impacts to existing and proposed subdivision and site plans. Subdivisions and site plans will continue to be approved and lots platted throughout the EIS process. Subdivisions and site plans that are within 500' of the Triangle Expressway Southeast Connector protected corridor and the Town of Cary Comprehensive Planning Area as of March 8, 2010 are listed below (see Attachment B for the map of locations).

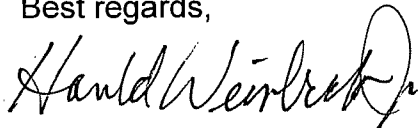
Subdivisions within 500' of the Protected Corridor and the Town of Cary Comprehensive Planning Area (List as of March 8, 2010)		
Subdivision Name	Acres	Lots
South Lake PH3	13.9398	15
Oxford Greene	32.6973	24
Clancy-Morrison	19.4583	5
Langston	77.802	72
Betty Truelove Daniels	6.81494	3
Belle Point	40.138	26
Brookshire Manor	23.4825	17
Jamison Park PH1	53.4068	136
Jamison Park PH2	78.0921	73
South Lake PH2	11.9468	12

Ms. Jennifer Harris, P.E.
March 17, 2010

Site Plans within 500' of the Protected Corridor and the Town of Cary Comprehensive Planning Area (List as of March 8, 2010)				
Site Plan Number	Project Name	Status	Acres	Use
00-SP-034	Middle Creek Park Softball Fields	Complete	90.23	Softball Fields
99-SP-153	Middle Creek High School	Complete	203	High School
99-SP-247	Middle Creek Park	Complete	203	Park

The Town would appreciate advance notification of any opportunities for additional public input on the EIS, including public workshops and hearings so that we may alert our citizens. We appreciate your consideration of our comments on this important matter. Please feel free to contact Kristen Dwiggin in our Engineering Department at (919) 462-3930 or via email at kristen.dwiggin@townofcary.org should you have any further questions relating to this issue. The Town of Cary looks forward to working with the Turnpike Authority on this important study process.

Best regards,



Harold Weinbrecht, Jr.
Mayor



**TOWN OF HOLLY SPRINGS
ENGINEERING DEPARTMENT
PO Box 8 Holly Springs, NC 27540
(919) 557-3938 • FAX (919) 552-9881**

**I-540 SOUTHEAST CONNECTOR
1st COMMENTS
3/25/2010**

Please feel free contact Kendra Parrish, PE, CFM at 557-3931 or Kendra.Parrish@hollyspringsnc.us with any questions or comments regarding these comments.

Comments:

- 1. Holly Springs supports the completion of the I-540 Southeast Connector!**
2. The Town of Holly Springs supports the location of the I-540 Southeast Connector in the current corridor protection area. If for some reason the location of I-540 cannot be located in this area we request that the new location be south of Holly Springs due to all of the existing development within the town limits.
3. Holly Springs is getting ready to embark upon a major multimodal Transportation Plan Update. We would like to meet with the Turnpike Authority a couple times throughout the process for coordination.
4. The planned interchange at Holly Springs Rd/Kildare Farm Road/I-540 needs special evaluation. What is in the corridor protection plan is not adequate to NCDOT design standards for on and off ramps. This presents a problem for Holly Springs because as development plans come in we know there needs to be more right of way however, NCDOT can not endorse a design due to NEPA.
5. Holly Springs requests a copy of the environmental investigation in our area for documentation.
6. Holly Springs prefers that the grade separated bridge over Sunset Lake Road be an overpass.
7. There are 3 greenway connections planned that cross I-540 and will need to be accommodated. These greenways are major connectors between adjacent municipalities. 1-behind the Scott's Laurel Subdivision off of Kildare Farm Rd, 2-Woodcreek Subdivision on Sunset Lake Road, 3-Area that runs parallel to Pierce Olive Road.
8. Adjacent to Middle Creek the Town has a major existing sewer trunk line. This will need to be preserved and factored into the road design.



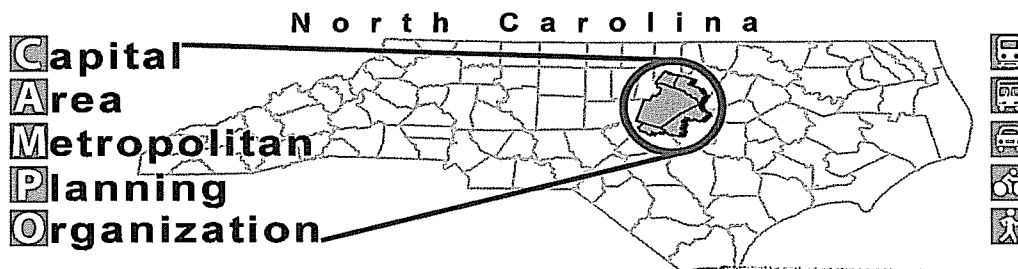
**TOWN OF HOLLY SPRINGS
ENGINEERING DEPARTMENT
PO Box 8 Holly Springs, NC 27540
(919) 557-3938 • FAX (919) 552-9881**

9. The overpass of Main Street (east of NC 55 Bypass) shall accommodate 100 ft right of way for a 4 lane median divided facility.
10. Sunset Lake Rd and Kildare Farm Rd are both 100 ft right of way with 4 lane median divided facilities as well.
11. Holly Springs would like to discuss noise walls and when the warrants will be evaluated. If needed what materials and height would be evaluated.

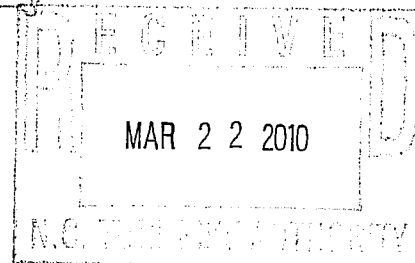
Questions:

1. If I-540 is relocated outside of the corridor protection area onto existing facilities that will be upgraded, will it still remain a toll road?
2. Will transit corridor be included with the I-540 design?

Thank you for the opportunity to comment on the process.



March 18, 2010



Ms. Jennifer Harris, PE
Staff Engineer
North Carolina Turnpike Authority
5400 Glenwood Avenue
Raleigh, NC 27612

Re: Southern & Eastern Wake Expressway (STIP Projects R-2721, R-2828, and R-2829)
Notice of Intent Agency Response

Dear Ms Harris,

In reference to the Notice of Intent published in the Federal Register on November 30, 2009, this letter is to inform the North Carolina Turnpike Authority (NCTA) that the Capital Area Metropolitan Planning Organization (MPO) is supportive of the development of an environmental impact statement for the proposed action.

The Capital Area MPO wishes to continue to build upon the cooperative planning relationship established in the Memorandum of Understanding dated May 13th, 2007 (attached). As the designated agency responsible for the 3-C planning process under Section 134 of Title 23 United State Code and Chapter 136 of the North Carolina General Statutes, CAMPO looks forward to the opportunity to serve as a participating agency in the planning and design development process for this project.

The MPO encourages NCTA to develop and designate a preferred corridor and alignment in a timely manner in order to assist in proper transportation planning and coordination of development activities in this rapidly growing area. A designated corridor is also essential to expedite the acquisition of necessary right of way for the project, thus keeping overall project costs to a minimum.

Planning and design of this major transportation facility should be in harmony with the adopted regional Long Range Transportation Plan and Triangle Regional Model. This should include consideration for the long term needs of the transportation corridor by accommodating the ultimate cost effective design of this facility rather than incorporating design elements to minimize initial construction costs that will result in higher retrofits in the future such as resizing of bridges or interchanges once tolls are removed from the facility. The MPO recognizes that the current regional model has produced traffic volumes that are lower than the initial model that included this project. The MPO wishes to express the need for continued coordination with NCTA to ensure reasonable traffic volumes are included in an update of the Triangle Regional Model currently under development.

The Southern and Eastern Wake Expressways are portions of the larger 540 Outer Loop project. As such these projects should be developed as a single design and right-of-way acquisition project to the extent possible. This will minimize long term project costs and result in an overall savings for the taxpayers. Any study of financial, economic and congestion impacts should include an analysis of the full completion of the Outer Loop.

The Southern and Eastern Wake Expressway will serve as the backbone of the transportation network in this area and should provide a balanced transportation facility design that includes multimodal considerations such as:

- Park and Ride facilities at major interchanges and other appropriate locations.
- Transit Vehicle toll exemption and priority.
- Transit vehicle and High Occupancy Vehicle priority through the use of designated lanes, toll stalls or other means.
- Coordination with existing and proposed bicycle and pedestrian facilities in the project corridor.

The MPO supports the inclusion of Intelligent Transportation System (ITS) components in the project design that are consistent with the adopted regional ITS architecture. This will maximize the transportation investment by enabling the most efficient management of traffic operations within the corridor.

The design of this new facility should minimize negative impacts to the Swift Creek Watershed and water supply area. To accomplish this, the ultimate facility design should include a toolbox of sustainable design elements such as use of BMPs throughout the project and consideration of onsite storm water treatment such as sustainable landscaping elements that are compatible with local soil type and drainage capability and that are native to the region.

The staff at CAMPO looks forward to working with NCTA to develop this vital transportation facility for the future. If you need any further assistance or have questions please contact my office at (919) 996-4400.

Sincerely,



Edison H. Johnson, Jr., PE, FITE
Executive Director, N.C. Capital Area MPO

cc: George Hoops, P.E. - Federal Highway Administration

APPENDIX F

Newsletters



Triangle Expressway
**SOUTHEAST
EXTENSION**



PLANNING STUDY *and* ENVIRONMENTAL IMPACT STATEMENT

MARCH 2010

SOUTHEAST EXTENSION: FINDING A SOLUTION ■

The North Carolina Turnpike Authority has embarked on a study to explore options for addressing transportation needs with the proposed Triangle Expressway Southeast Extension project. Rapid population growth in Wake and Johnston counties is forecast to increase strain on existing roads. As part of this study, the Turnpike Authority will investigate potential solutions for meeting current and future transportation needs in this area.

The Triangle Expressway, from Interstate 40 at NC 147 in Durham County south to NC 55 Bypass near Apex, is currently under construction and is scheduled to open to traffic in late 2012. The Southeast Extension would

extend the Triangle Expressway and complete the 540 Outer Loop. It will be studied as a toll facility and likely would be constructed in phases. Phase I is between NC 55 in Apex and Interstate 40 near the Johnston/Wake County line. Phase II continues the project at Interstate 40, ending at US 64/US 264 Bypass in Knightdale. The entire project is nearly 30 miles long.

The Southeast Extension study will consider various solutions for addressing area transportation needs. These studies will consider several options, including improving existing roads and building a new roadway, along with non-roadway options such as mass transit. With extensive community participation, the Turnpike Authority expects to identify and finalize a route for the Southeast Extension and begin construction of Phase I in 2014.

What is an EIS?

The National Environmental Policy Act (NEPA) requires federal agencies to prepare an Environmental Impact Statement (EIS) for major federal actions that are expected to significantly impact the environment.

(For more information go to <http://environment.fhwa.dot.gov/index.asp>.)

An EIS is a detailed report that defines the transportation problem, discusses the range of possible solutions considered, discloses the impacts possible solutions would have on the human and natural environments, summarizes involvement with the public and other stakeholders, and aids in making decisions about the project.

The EIS process includes the following four major milestones:

- 1 Notice of Intent (NOI):** The NOI is published in the Federal Register, signaling the initiation of the EIS process (Nov. 2009 for this project).
- 2 Draft EIS:** After publication of the Draft EIS, there are public hearings and a formal comment period.
- 3 Final EIS:** The Final EIS addresses comments received on the Draft EIS and identifies the preferred route for the project.
- 4 Record of Decision (ROD):** The ROD identifies the selected route for the project, explains why it was chosen, and provides information on ways to minimize and compensate for project impacts.



COMMUNITY PARTICIPATION: THE KEY TO A SUCCESSFUL OUTCOME ■

Community participation is a core element of the transportation planning process. A successful Southeast Extension study will depend on engaging community members and stakeholders to identify area transportation needs, quality of life concerns, community values and potential project solutions.

We encourage you to participate actively in the Southeast Extension study. There are several different ways you can participate and stay informed:

- **Participate in public workshops and events.** The Turnpike Authority will hold public workshops and events throughout the study process to provide information and receive your input about the project. We plan to hold the first series of workshops this summer.
- **Request a small group meeting.** The Turnpike Authority is available to meet with interested community organizations, neighborhood associations and others throughout the project's development. Please contact the Turnpike Authority to arrange a small group meeting.
- **Contact us with questions and comments.** You can contact the Turnpike Authority by phone, e-mail or traditional mail. You are also welcome to discuss the project with us via our project blog. *(Please see back page for contact information.)*

WHERE IS THE PROJECT STUDY AREA? ■

The map (below/above) shows the study area for the Southeast Extension project. The Turnpike Authority will consider a range of project routes within this study area. The complete study area includes parts of southern and eastern Wake County and northern Johnston County, as well as parts of eight municipalities—Apex, Holly Springs, Cary, Fuquay-Varina, Garner, Raleigh, Knightdale and Clayton—along with several rural communities, such as Willow Spring and McCullers Crossroads.

The route shown for Phase I is the protected corridor for this part of the project. Phase II does not have a protected corridor; the route shown for Phase II is one potential route and is shown for reference.

PROTECTED CORRIDOR: ONE OF SEVERAL POSSIBLE ROUTES ■

A protected corridor preserves the location of a new road from encroaching development. In the mid-1990s, the North Carolina Department of Transportation (NCDOT), under the Transportation Corridor Official Map Act, established a protected corridor for Phase I of the Southeast Extension between NC 55 in Apex and Interstate 40 near the Johnston/Wake County line. The Turnpike Authority will evaluate the protected corridor, as well as other possible routes, as part of this study. The study area map on the opposite page shows the location of the protected corridor for Phase I.

WHAT'S NEXT? ■

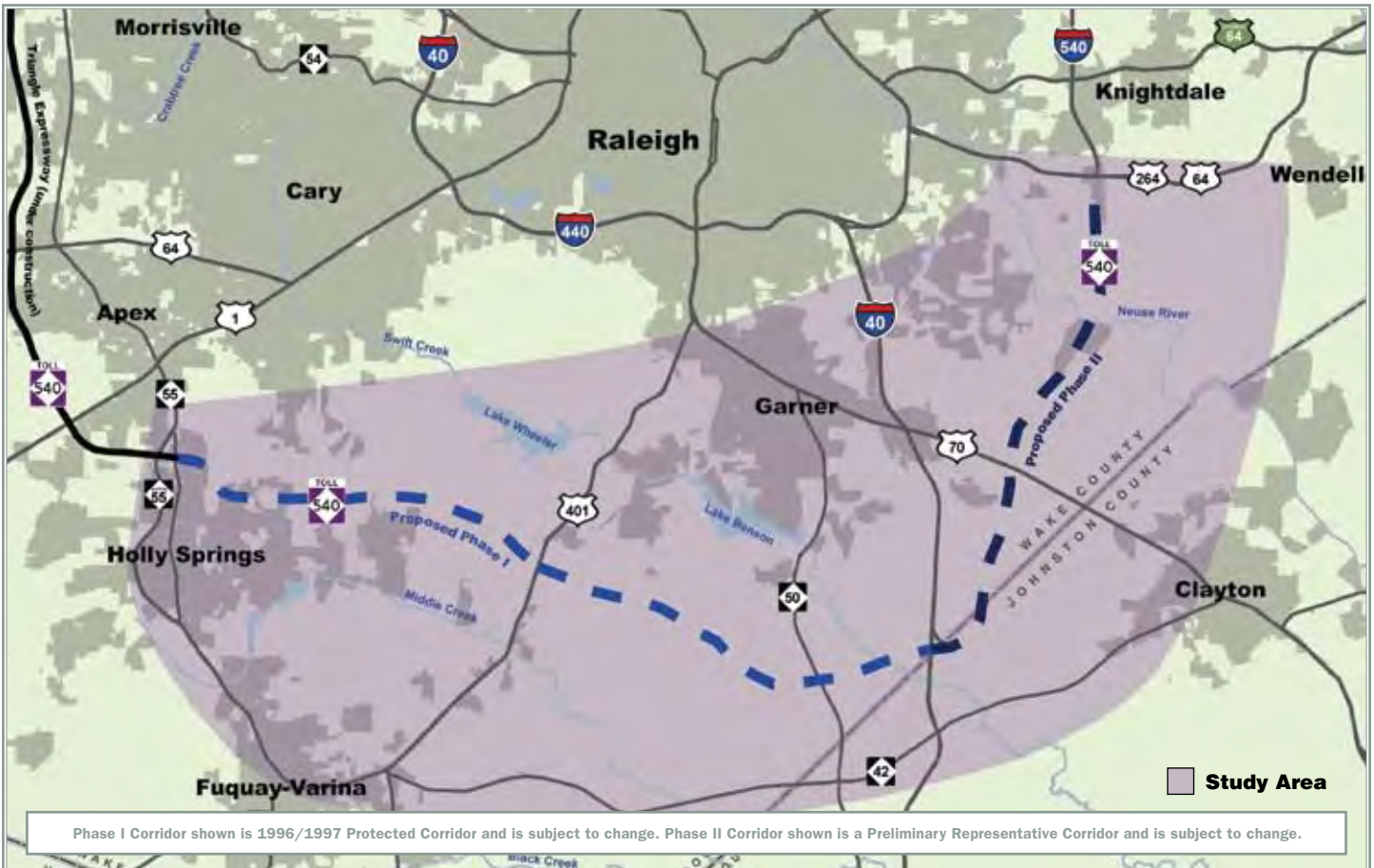
The Turnpike Authority is currently collecting project area data, identifying local needs and beginning to develop concepts shaping the project's purpose. The study team will soon begin identifying possible routes, conducting environmental field studies and documenting community characteristics. The Turnpike Authority will hold public input events throughout this study and plans to hold the first series of public workshops this summer.

The Turnpike Authority expects to identify the most reasonable routes for the project later this year and will document the potential impacts of these routes in a Draft Environmental Impact Statement (EIS). The publication of the Draft EIS and the remaining project milestones are tentatively scheduled as follows:

• Draft Environmental Impact Statement	2012
• Final Environmental Impact Statement	2013
• Final Approval of Project Route (Record of Decision)	2013
• Phase I Construction Begins*	2014
• Phase II Corridor Protection	2014
• Phase I of Southeast Extension Open to Traffic	2019

* Contingent upon availability of funding.

Study Area Map





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Triangle Expressway Southeast Extension

P. O. Box 30923
Raleigh, NC 27622



Let Us Know What You Think!

Your thoughts and questions are important to us. We encourage your input and there are many ways you can reach us:

Web | Visit our website at www.ncturnpike.org/projects/southeast/ and our project blog at southeastextension.blogspot.com.

E-mail | Send us a comment via e-mail to southeast@ncturnpike.org.

Telephone | Call our toll-free hotline at **1-800-554-7849**.

Letter | Send your letter to: **Ms. Jennifer Harris, P.E.**
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578



JOIN US FOR INFORMATIONAL MEETINGS ON THE SOUTHEAST EXTENSION! *N.C. Turnpike Authority schedules three meetings to update residents*

IN JANUARY, the N.C. Turnpike Authority (NCTA) began studying the possibility of a new toll road called the “Southeast Extension” that would connect to the Triangle Expressway, another toll road currently under construction in Wake and Durham counties. This new road would span nearly 30 miles through southeastern Wake County and connect the NC 55 Bypass near Apex to the US 64/264 Bypass in Knightdale.

NCTA engineers and other representatives would like to update you on this proposed new road, answer your questions, and hear what you think. Please plan to attend one of the meetings.

These meetings will be in an open-house format, so you can arrive at your convenience. The same information will be presented at each of the three workshops, which are being held in different parts of the project study area.

Tuesday, Sept. 21, 2010, 4pm–7pm
Wake Technical Community College
Student Services Building, Rooms 213/214
Raleigh, NC 27603

Wednesday, Sept. 22, 2010, 6pm–9pm
Holly Springs High School
5329 Cass Holt Road
Holly Springs, NC 27540

Thursday, Sept. 23, 2010, 4:30pm–7:30pm
Barwell Road Community Center
3935 Barwell Road
Raleigh, NC 27610

Project Schedule

• Draft Environmental Impact Statement	2012
• Final Environmental Impact Statement	2013
• Final Approval of Project Route (Record of Decision)	2013
• Phase I Construction Begins	Contingent on funding
• Phase II Corridor Protection	Contingent on funding
• Phase I of Southeast Extension Open to Traffic	To be determined

In compliance with the Americans with Disabilities Act (ADA), NCTA will provide auxiliary aids and services for disabled persons who wish to participate in these workshops. To receive special services, please contact the project team by phone (800) 554-7849 or email southeast@ncturnpike.org. Please provide adequate notice prior to the date of the meeting so that arrangements can be made.



WHAT IS BEING STUDIED? ■

Three different plans that involve building or expanding roads to address growing traffic in southern Wake County are under consideration by NCTA at this time. There is also the fourth option of not building a new road or expanding existing roads, which is under consideration as well.

OPTIONS

1 Build a New Roadway

Construct a new roadway between NC 55 near Apex to the US 64/US 264 Bypass in Knightdale. Several possible routes are under consideration as new location build alternatives (see map, opposite page).

2 Improve Existing Roadways

Widen Interstate 40 from west of Raleigh to the Clayton area, Interstate 440 from Interstate 40 to the US 64/US 264 Bypass, and the US 64/US 264 Bypass from Interstate 440 to the eastern study area boundary.

3 New Road Construction/Improve Existing Road Option

Construct a new roadway between NC 55 near Apex to Interstate 40 near the Wake/Johnston County line; and widen Interstate 40 from Interstate 440 to the Clayton area, Interstate 440 from Interstate 40 to the US 64/US 264 Bypass, and the US 64/US 264 Bypass from Interstate 440 to the eastern study area boundary.

NEXT STEPS ■

Each of these options is being studied. Some of the study criteria include:

- *What is the potential impact to existing homes, businesses, parks and other places people live, work, learn or play?*
- *How will building or expanding roads impact the natural environment?*
- *Will these options help reduce traffic congestion?*
- *What do residents, elected officials, government agencies and others think?*

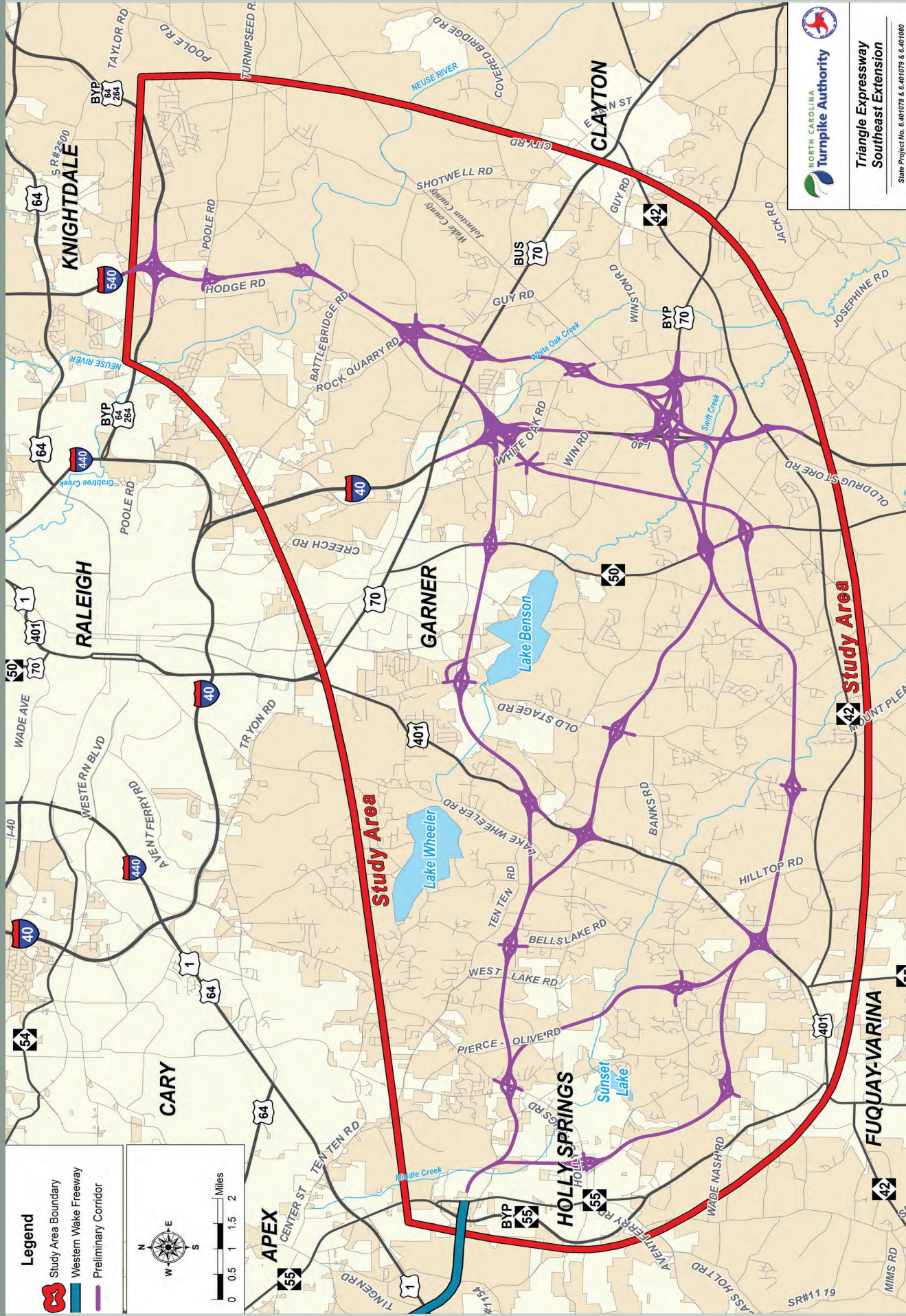
***Your input is important in this step!
Join us for the informational meetings to offer your thoughts and opinions.***

After this initial study, a smaller number of options will be studied in greater depth. More information about which options were selected, and the reasons why they were selected, will be available after November 1 on the NCTA website www.ncturnpike.org/projects/southeast/documents.asp.

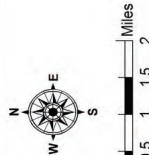
In-depth studies of each option will begin in early 2011. Once all the research is done, a recommendation of which option best meets the needs of the community will be made. This information will be described in the Draft Environmental Impact Statement (EIS), which should be released in 2012. During this process, and even after the Draft EIS is released, public input will be accepted.

Potential New Location Build Alternatives

(As of September 2010)



- Legend**
- Study Area Boundary
 - Western Wake Freeway
 - Preliminary Corridor



**Triangle Expressway
Southeast Extension**

State Project No. 6-401078 & 6-401079 & 6-401080
S.T.I.P. No. R-2774 & R-2825 & R-2829

Preliminary New Location Corridors

NOTE: If a build option is selected, only one of the potential build alternatives would be constructed.



Triangle Expressway Southeast Extension

P. O. Box 30923
Raleigh, NC 27622



Let Us Know What You Think!

Your thoughts and questions are important to us. We encourage your input and there are many ways you can reach us:

Web | Visit our website at www.ncturnpike.org/projects/southeast/
and our project blog at southeastextension.blogspot.com.

E-mail | Send us a comment via e-mail to southeast@ncturnpike.org.

Telephone | Call our toll-free hotline at **1-800-554-7849**.

Letter | Send your letter to: **Ms. Jennifer Harris, P.E.**
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578



Complete 540

Triangle Expressway Southeast Extension
PO Box 30923
Raleigh, NC 27622



PLANNING STUDY *and* ENVIRONMENTAL IMPACT STATEMENT

ISSUE 3 ■ SEPTEMBER 2013

STUDY RESUMES TO COMPLETE 540

The Complete 540 study for the Southeast Extension of the Triangle Expressway has resumed following a delay of more than two years.

The N.C. General Assembly recently enacted new legislation (NCSL 2013-94 and 2013-183) that reversed NCSL 2011-7, which placed the study on hold, limiting the ability of the North Carolina Department of Transportation (NCDOT) to comply with certain federal requirements.

The Complete 540 project would provide a more direct route and quicker access to Research Triangle Park, the Raleigh-Durham International Airport, and major employment and activity centers along 540 for rapidly growing communities south and east of Raleigh.

In early August, the NCDOT study team resumed work

on the project to collect information about how the various route locations proposed for completing 540 would affect the area environment. Information about future traffic volumes, development patterns, community features, natural resources, possible noise impacts, and other features is being collected and studied. NCDOT will also collect information from area residents and other local stakeholders to get local perspectives on the project.

The overall goal of the study is to understand how the project would benefit the region, and how the various routes proposed for it would impact the area and those who live and work there. With this information at hand, the best possible route location for completing 540 can be determined.



Let Us Know What You Think!

Your thoughts and questions are important to us. We encourage your input and there are many ways you can reach us:

Web | Visit our website at www.ncdot.gov/complete540

and our project blog at complete540.blogspot.com

E-mail | Send us a comment via e-mail to complete540@ncdot.gov

Telephone | Call our toll-free hotline at **1-800-554-7849**

Letter | Send your letter to: **Mr. Eric Midkiff, P.E.**
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Fall 2013 Public Meetings

Mon., Oct. 14, 2013, 4:00 pm–7:00 pm
Wake Tech Community College
9101 Fayetteville Road
Raleigh, NC 27603

Tues., Oct. 15, 2013, 4:00 pm–7:00 pm
Barwell Road Community Center
3935 Barwell Road
Raleigh, NC 27610

Wed., Oct. 16, 2013, 6:00 pm–9:00 pm
Holly Springs High School
5329 Cass Holt Road
Holly Springs, NC 27540

Share Your Thoughts!

Three separate public meetings are being held in the project study area. The purpose of these meetings is to provide the latest information about the Complete 540 study. NCDOT staff and consultants will be there to receive your comments and answer your questions. These meetings will be in an open-house format, meaning you may attend at any time during the posted hours. Formal presentations will not be made at the meetings. The same information will be available at each of the three meetings, which are being held in different parts of the project study area for the convenience of all who would like to attend.

In compliance with the Americans with Disabilities Act (ADA), NCDOT will provide auxiliary aids and services for disabled persons who wish to participate in these meetings. To receive special services, please contact the study team by phone 1-800-554-7849 or email complete540@ncdot.gov. Please provide adequate notice prior to the date of the meeting so that arrangements can be made.

Si desea recibir una copia de este boletín en Español, por favor llame al número de teléfono 1-800-481-6494, o envíe un correo electrónico a complete540@ncdot.gov. Servicios de intérprete estarán disponibles en la junta para las personas que hablan Español y no hablan Inglés o si tienen una capacidad limitada para leer, hablar o entender el Inglés. Para obtener más información sobre estos servicios, por favor llame al número de teléfono 1-800-481-6494.



ROUTE ALTERNATIVES CURRENTLY UNDER CONSIDERATION

At public meetings held in September and December of 2010, several color-coded route location alternatives were presented for review and comment. Following those meetings, some of those alternatives were dropped from further consideration. Since that time, four new alternatives have been developed, and a portion of two that were dropped in 2010 have been reintroduced.

The map on the facing page shows the route alternatives that are currently recommended by NCDOT for further study. The paragraphs below explain the new routes that have been added since 2010. They also explain why the two previous routes needed to be reintroduced.

Lilac Corridor — NCDOT worked with the Capital Area Metropolitan Planning Organization and other local and agency stakeholders to see if they could identify any other route locations that could minimize wetland impacts similar to the Red Corridor. A new corridor—designated as the Lilac Corridor—showed the potential to accomplish this.

Mint Green Corridor — Compared to the Green Corridor, this option reduces impacts to a proposed development known as Randleigh Farm and would displace fewer homes and businesses than the nearby Tan Corridor.

Brown Corridor — This option completely avoids the Randleigh Farm property, but would impact a public wastewater treatment facility and a police training center.

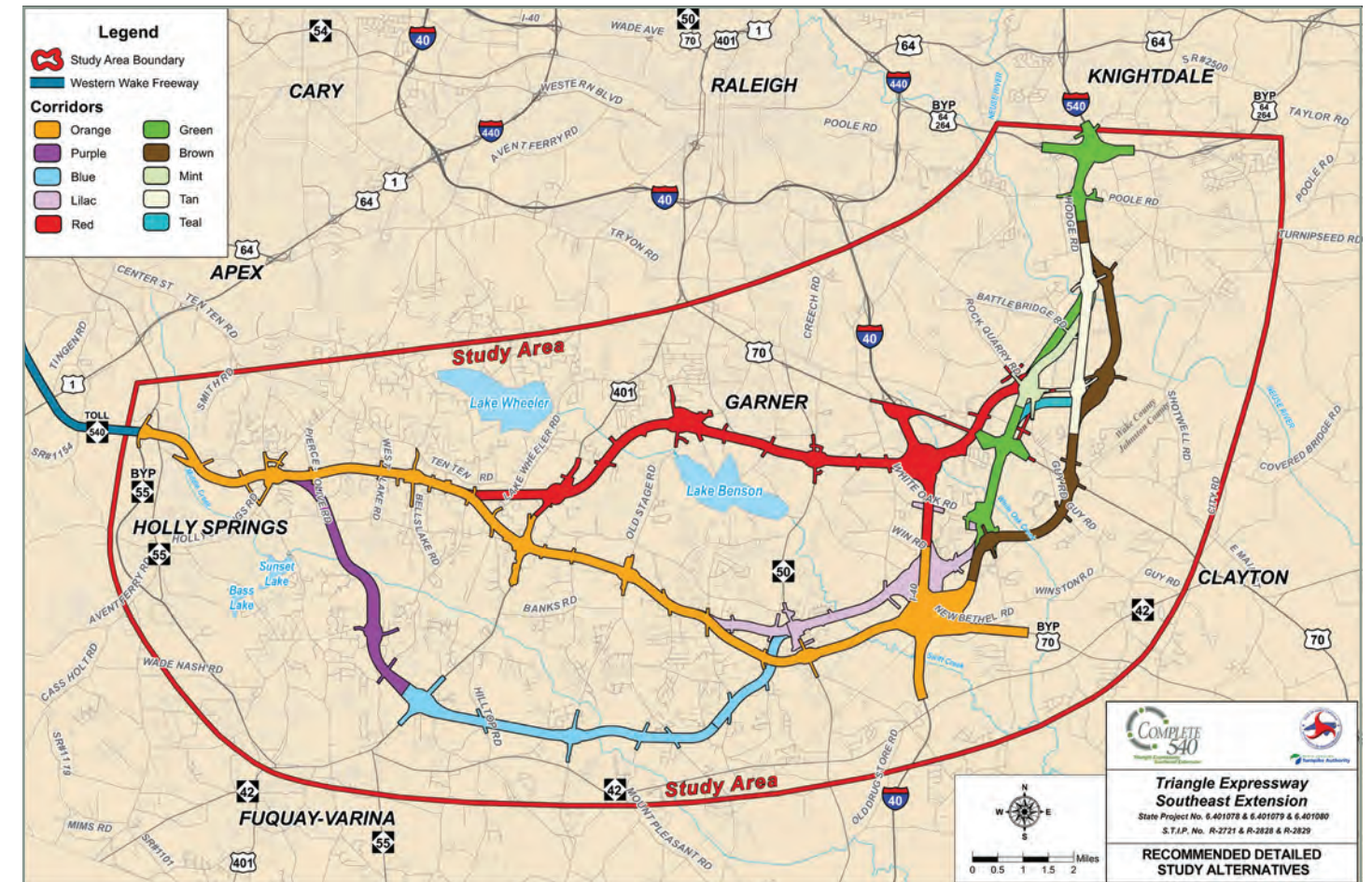
Teal Corridor — This is a short connector between the Green corridor and the Brown corridor, creating another route for 540 between I-40 and US 64/US 264 Bypass.

Purple-Blue-Lilac Corridor — The Blue and Purple Corridors were removed from consideration in November 2010 because the original connection did not provide enough benefit over other options under consideration at that time. With the development of the Lilac Corridor, however, it was found that connecting the Purple Corridor to the Blue Corridor, and then to the new Lilac Corridor, created an option that minimizes wetland impacts similar to the Red Corridor. For this reason, the combination known as the Purple-Blue-Lilac Corridor is under consideration.

Red Corridor — After NCSL 2011-7 was enacted, preventing full evaluation of the Red Corridor, NCDOT worked extensively with environmental agencies and local stakeholders to find a way to move the study forward without the Red Corridor. Despite that effort, the US Army Corps of Engineers determined that the federal laws they administer require the Red Corridor be studied at the same level of detail as the other route locations, and that the State law enacted in 2011 does not supersede federal law.

Route Alternatives Recommended for Detailed Study

September 2013



NOTE: If the project is approved for construction, only one of the potential routes would be built.

WHAT HAPPENS NEXT?

After consideration of all public and agency comments received on these recommended alternatives, NCDOT and the Federal Highway Administration will decide on the final set of “Detailed Study Alternatives.” Once this decision is made, the study team will proceed with the required in-depth evaluations and comparisons. The results of these studies will be documented in the project’s Draft Environmental Impact Statement, along with a possible recommendation of which alternative best meets the project purpose. The current schedule calls for this document to be published in the spring of 2015.

Once this document is published, public hearings will be scheduled at several locations in the project study area. Following the public hearings, NCDOT will again review all public and agency comments and then make a final decision about the best route, or “Preferred Alternative” for the project.

Anticipated Project Time Frame

Hold Public Meetings on Alternatives	Fall 2013
Finalize Detailed Study Alternatives	Winter 2013
Complete Required Technical Studies	Fall 2014
Receive Approval of the Draft EIS*	Spring 2015
Draft EIS Review Period and Public Hearings ..	Summer 2015
Selection of the Preferred Alternative	Fall 2015
Approval of the Final EIS*	Spring 2016
Publication of the Record of Decision	Summer 2016
Complete Environmental Study Process	Fall 2016

*Environmental Impact Statement

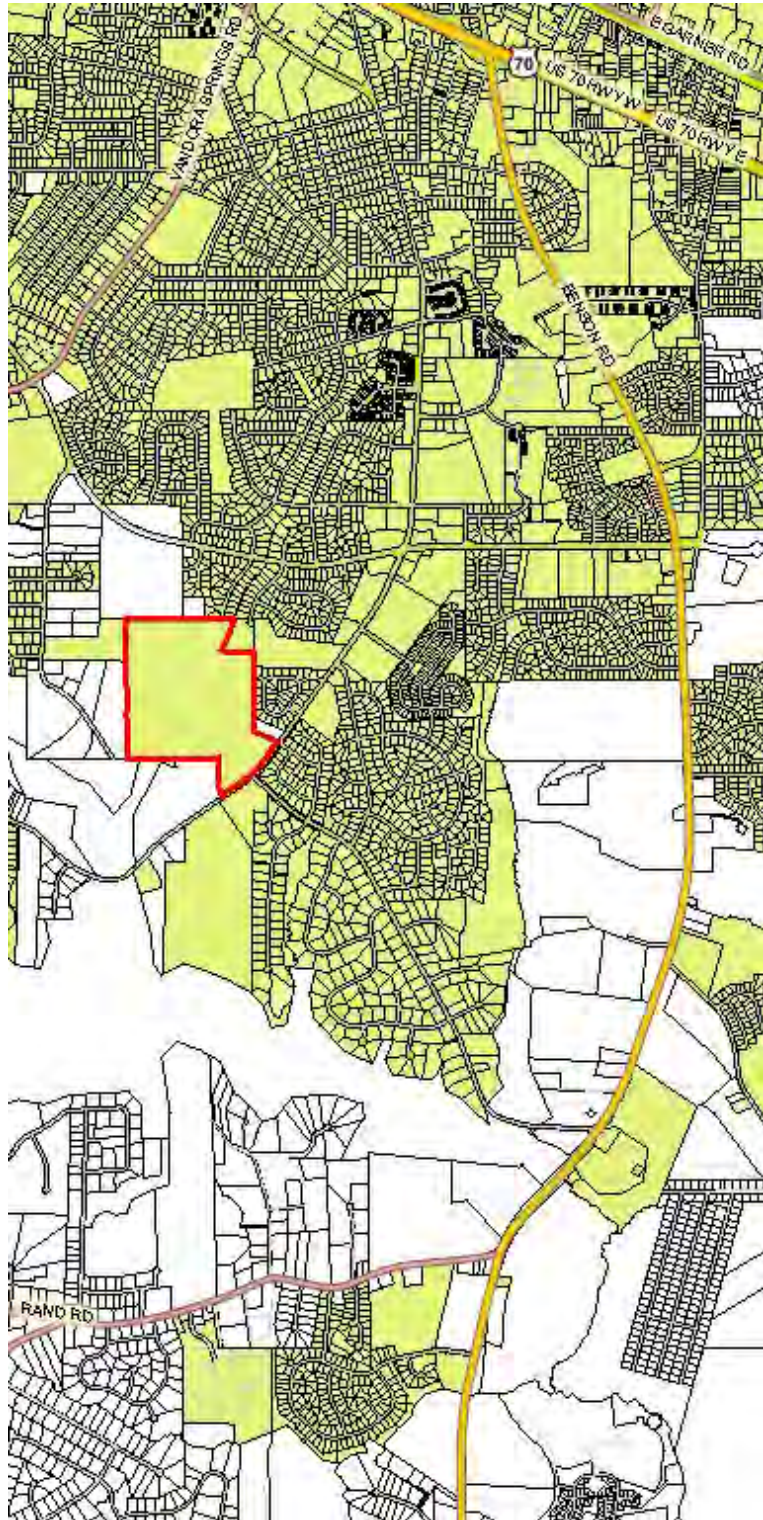
If the Study results in project approval, the following is expected, subject to availability of funding:

Complete Financial Feasibility.....	Spring 2017
Begin Right-of-Way Acquisition	Summer 2017
Begin Construction	Spring 2018
Open to Traffic	Spring 2022

APPENDIX G
Garner Parks – Property Records



White Deer Park



Parcel Number: 1710035130

REID: 0020111
 OWNER1: GARNER TOWN OF
 ADDR1: PO BOX 446
 ADDR2: GARNER NC 27529-0446
 ADDR3:
 DEED BOOK: 08713
 DEED PAGE: 1826
 DEED DATE: 10/23/2000
 DEED ACRES: 96.3
 BLDG VAL: 715561
 LAND VAL: 2359800
 TOTAL VALUE: 3075361
 BILLING CLASS: EXEMPT
 DESCRIPTION: BUFFALO LAND
 MAP NAME: 171013
 PIN NUM: 1710035130
 PIN EXT: 000
 CITY: GAR
 TOWNSHIP: ST. MARYS
 YEAR BUILT: 2009
 SALEPRICE: 0
 SALEDATE:
 TYPE USE: Club House
 DESIGN STYLE: Conventional
 UNITS: 0
 LAND CLASS: EXEMPT
 OLD PARCEL NUMBER: 726-00000-0010
ADDRESS
 ST NUM: 2458
 ST MISC:
 DIR PREFIX:
 ST NAME: AVERSBO RD
 ST TYPE:
 DIR SUFFIX:

- Interstates/Highways
- Major Roads
- Streets
- Parcels
- Corporate Limit Boundary

- ANGIER
- APEX
- CARY
- CLAYTON
- DURHAM
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE
- RALEIGH
- ROLESVILLE
- WAKE FOREST
- WENDELL
- ZEBULON

Planning Jurisdiction Boundary

- ANGIER
- APEX
- CARY
- CLAYTON
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE
- RALEIGH
- RDU
- ROLESVILLE
- WAKE FOREST
- WENDELL
- ZEBULON

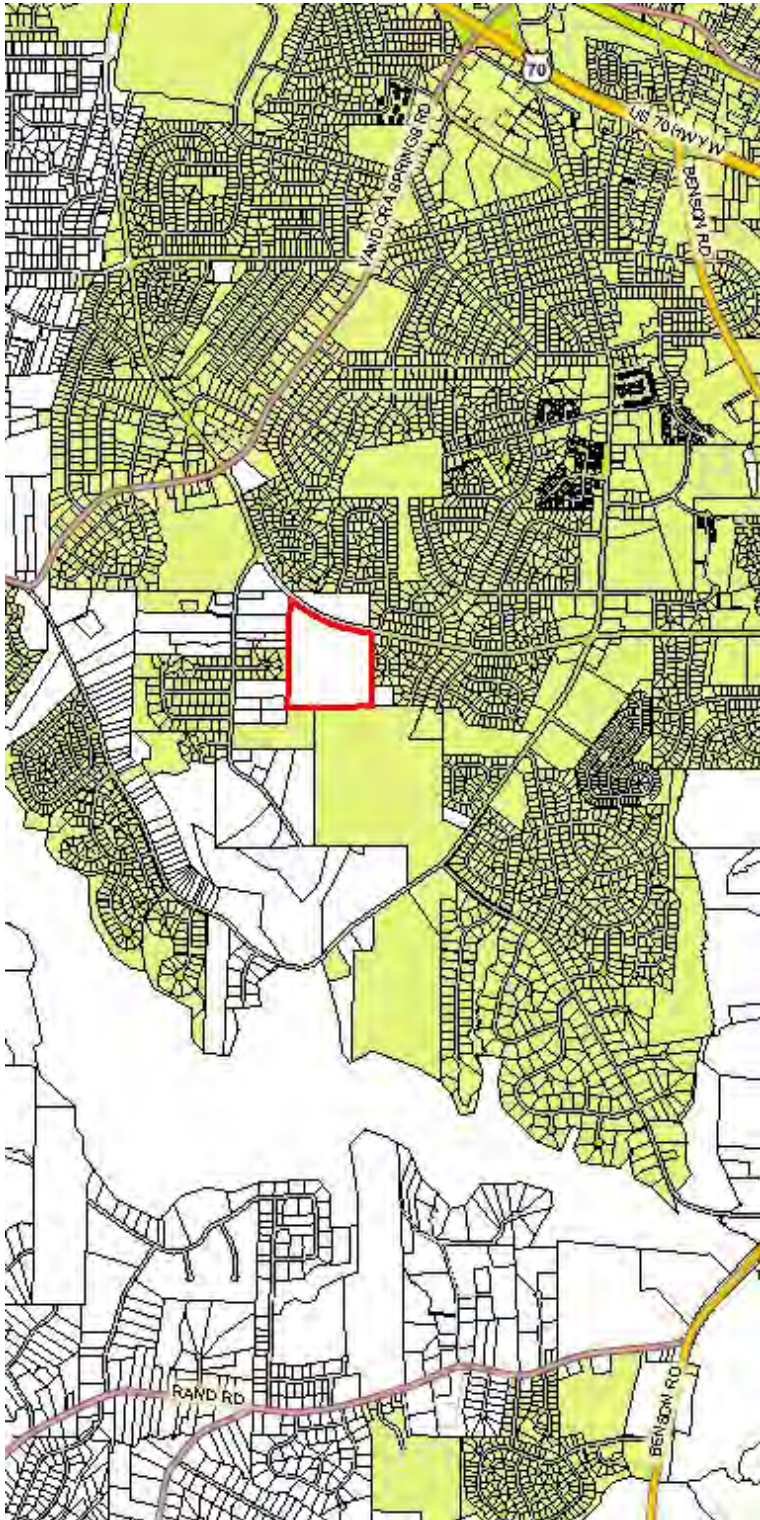
- Wake County Boundary

Map created on 12/11/2011 11:34:13 AM.
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White Deer Expansion Parcel



Parcel Number: 1700946467

REID: 0352144
 OWNER1: GARNER TOWN OF
 ADDR1: PO BOX 446
 ADDR2: GARNER NC 27529-0446
 ADDR3:
 DEED BOOK: 12337
 DEED PAGE: 1956
 DEED DATE: 12/29/2006
 DEED ACRES: 35.66
 BLDG VAL: 0
 LAND VAL: 1604700
 TOTAL VALUE: 1604700
 BILLING CLASS: EXEMPT
 DESCRIPTION: GR PT 1-6 WHITAKER HEIRS LAND BM1966-00158
 MAP NAME: 170012
 PIN NUM: 1700946467
 PIN EXT: 000
 CITY:
 TOWNSHIP: ST. MARYS
 YEAR BUILT: 0
 SALEPRICE: 0
 SALEDATE:
 TYPE USE:
 DESIGN STYLE:
 UNITS: 0
 LAND CLASS: EXEMPT
 OLD PARCEL NUMBER: 726--
ADDRESS
 ST NUM: 0
 ST MISC:
 DIR PREFIX:
 ST NAME: BLANTON ST
 ST TYPE:
 DIR SUFFIX:

- Interstates/Highways
- Major Roads
- Streets
- Parcels
- Corporate Limit Boundary

- ANGIER
- APEX
- CARY
- CLAYTON
- DURHAM
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE
- RALEIGH
- ROLESVILLE
- WAKE FOREST
- WENDELL
- ZEBULON

Planning Jurisdiction Boundary

- ANGIER
- APEX
- CARY
- CLAYTON
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE
- RALEIGH
- RDU
- ROLESVILLE
- WAKE FOREST
- WENDELL
- ZEBULON

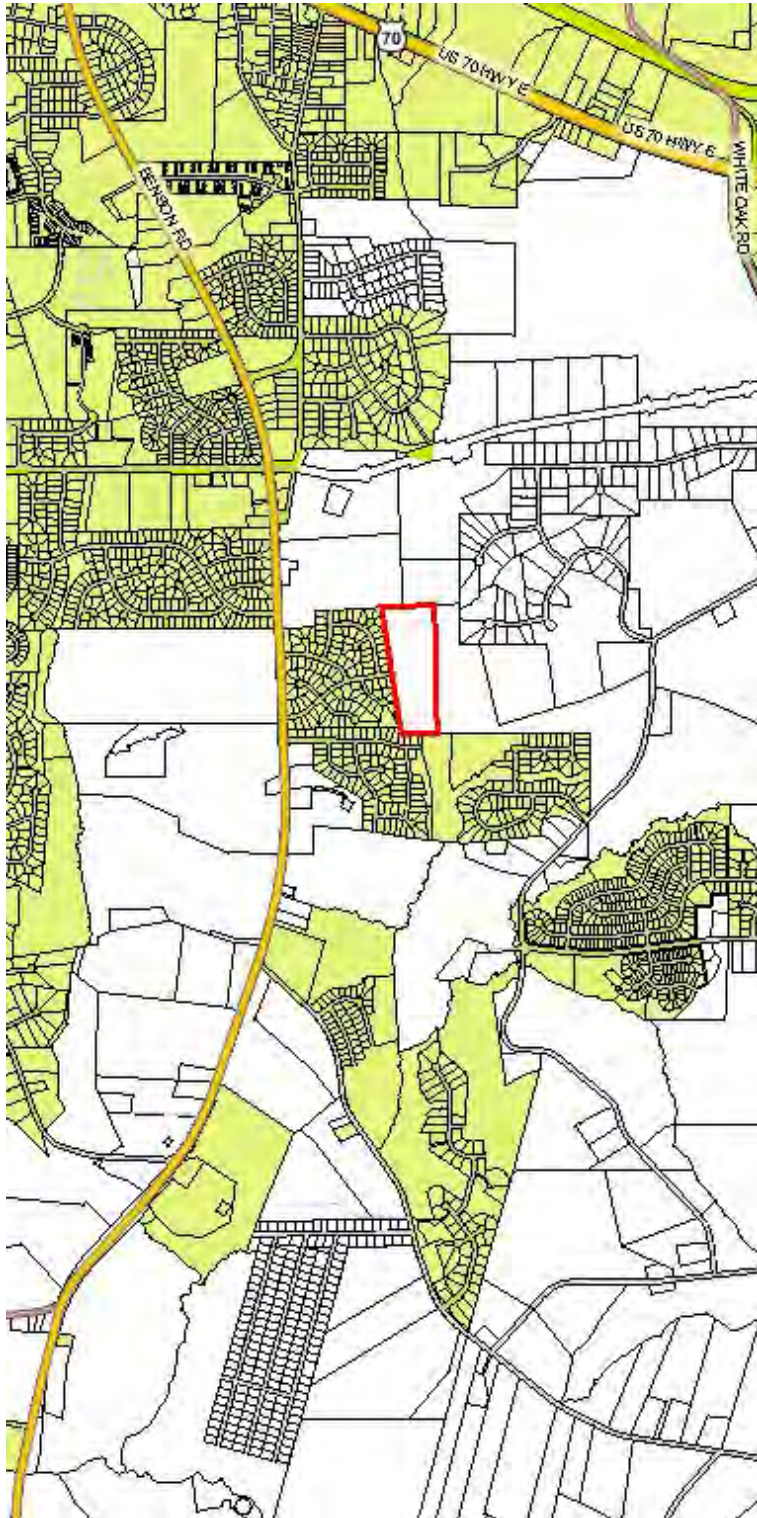
- Wake County Boundary

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0 2794 ft



Bryan Road Nature Park



Parcel Number: 1710924101
 REID: 0009408
 OWNER1: GARNER TOWN OF
 ADDR1: PO BOX 446
 ADDR2: GARNER NC 27529-0446
 ADDR3:
 DEED BOOK: 04420
 DEED PAGE: 0242
 DEED DATE: 1/12/1989
 DEED ACRES: 20.1
 BLDG VAL: 0
 LAND VAL: 483750
 TOTAL VALUE: 483750
 BILLING CLASS: EXEMPT
 DESCRIPTION: TR4 MARY BRYAN DOWD
 EST BM1987-1289
 171020
 MAP NAME: 1710924101
 PIN NUM: 1710924101
 PIN EXT: 000
 CITY: ST. MARYS
 TOWNSHIP: 0
 YEAR BUILT: 0
 SALEPRICE: 0
 SALEDATE:
 TYPE USE:
 DESIGN STYLE:
 UNITS: 0
 LAND CLASS: EXEMPT
 OLD PARCEL NUMBER: 727-00000-0014
ADDRESS
 ST NUM: 510
 ST MISC:
 DIR PREFIX:
 ST NAME: FOREST LANDING
 ST TYPE: DR
 DIR SUFFIX:

- Interstates/Highways
- Major Roads
- Streets
- Parcels
- Corporate Limit Boundary

- ANGIER
- APEX
- CARY
- CLAYTON
- DURHAM
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE
- RALEIGH
- ROLESVILLE
- WAKE FOREST
- WENDELL
- ZEBULON

Planning Jurisdiction Boundary

- ANGIER
- APEX
- CARY
- CLAYTON
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE
- RALEIGH
- RDU
- ROLESVILLE
- WAKE FOREST
- WENDELL
- ZEBULON

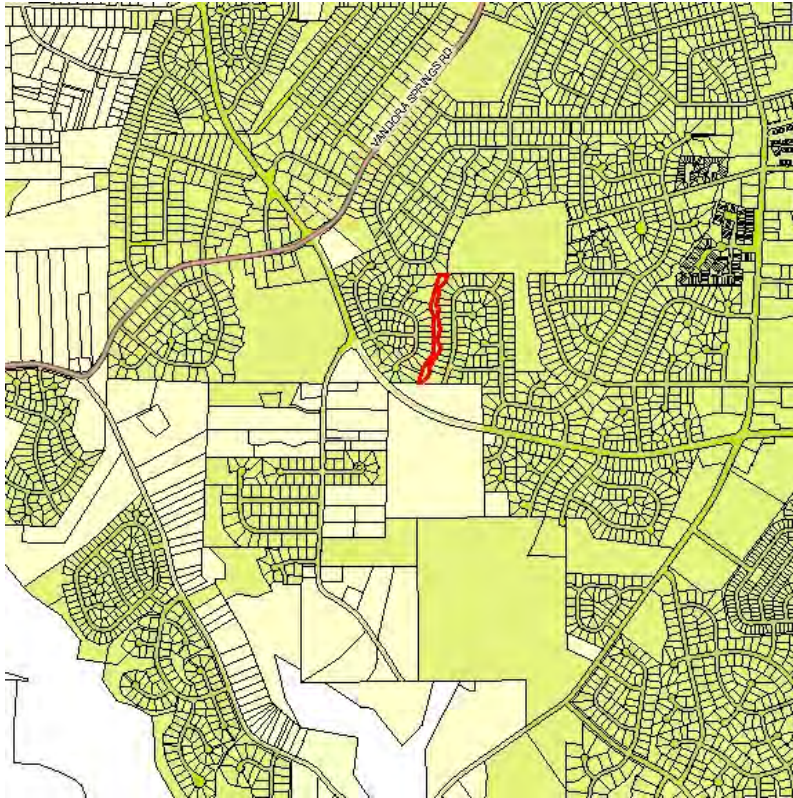
- Wake County Boundary

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South Garner Greenway



Parcel Number: 1700957926
 REID: 0223032
 OWNER1: GARNER TOWN OF
 ADDR1: PO BOX 446
 ADDR2: GARNER NC 27529-0446
 ADDR3:
 DEED BOOK: 06946
 DEED PAGE: 0098
 DEED DATE: 4/26/1996
 DEED ACRES: 2.23
 BLDG VAL: 0
 LAND VAL: 400
 TOTAL VALUE: 400
 BILLING CLASS: EXEMPT
 DESCRIPTION: OP/SP HEATHER SPRINGS SUB BM1996-424
 MAP NAME: 170012
 PIN NUM: 1700957926
 PIN EXT: 000
 CITY: GAR
 TOWNSHIP: ST. MARYS
 YEAR BUILT: 0
 SALEPRICE: 0
 SALEDATE:
 TYPE USE:
 DESIGN STYLE:
 UNITS: 0
 LAND CLASS: EXEMPT
 OLD PARCEL NUMBER: 704--
ADDRESS
 ST NUM: 0
 ST MISC:
 DIR PREFIX:
 ST NAME: TIMBER
 ST TYPE: DR
 DIR SUFFIX:

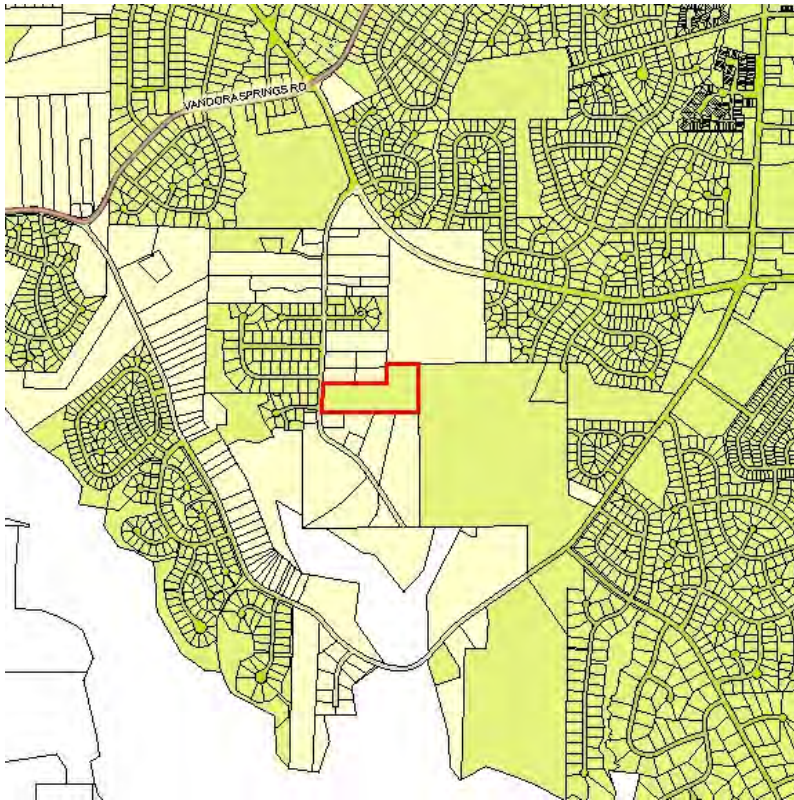
- Interstates/Highways
- Major Roads
- Streets
- Parcels
- Corporate Limit Boundary
- ANGIER
- APEX
- CARY
- CLAYTON
- DURHAM
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE
- RALEIGH
- ROLESVILLE
- WAKE FOREST
- WENDELL
- ZEBULON
- Planning Jurisdiction Boundary
- ANGIER
- APEX
- CARY
- CLAYTON
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE

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0 1669 ft



Thompson Road Park



Parcel Number: 1700838472
 REID: 0070446
 OWNER1: GARNER TOWN OF
 ADDR1: PO BOX 446
 ADDR2: GARNER NC 27529-0446
 ADDR3:
 DEED BOOK: 06056
 DEED PAGE: 0467
 DEED DATE: 3/23/1994
 DEED ACRES: 12.66
 BLDG VAL: 0
 LAND VAL: 334800
 TOTAL VALUE: 334800
 BILLING CLASS: EXEMPT
 DESCRIPTION: LOG LONNIE THOMPSON
 MAP NAME: 170016
 PIN NUM: 1700838472
 PIN EXT: 000
 CITY: GAR
 TOWNSHIP: ST. MARYS
 YEAR BUILT: 0
 SALEPRICE:
 SALEDATE:
 TYPE USE:
 DESIGN STYLE:
 UNITS: 0
 LAND CLASS: EXEMPT
 OLD PARCEL NUMBER: 726-00000-0043
ADDRESS
 ST NUM: 550
 ST MISC:
 DIR PREFIX:
 ST NAME: THOMPSON
 ST TYPE: RD
 DIR SUFFIX:

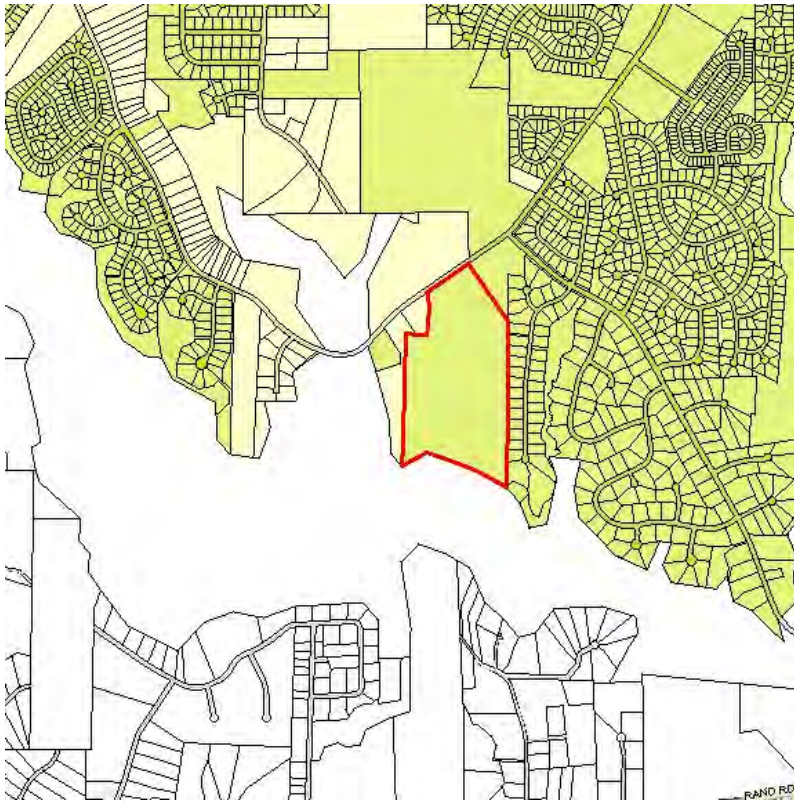
- Interstates/Highways
- Major Roads
- Streets
- Parcels
- Corporate Limit Boundary
- ANGIER
- APEX
- CARY
- CLAYTON
- DURHAM
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE
- RALEIGH
- ROLESVILLE
- WAKE FOREST
- WENDELL
- ZEBULON
- Planning Jurisdiction Boundary
- ANGIER
- APEX
- CARY
- CLAYTON
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE

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Lake Benson Park



Parcel Number: 1619096769

REID: 0009683
 OWNER1: GARNER TOWN OF
 ADDR1: PO BOX 446
 ADDR2: GARNER NC 27529-0446
 ADDR3:
 DEED BOOK: 04633
 DEED PAGE: 0875
 DEED DATE: 1/12/1990
 DEED ACRES: 63.42
 BLDG VAL: 350730
 LAND VAL: 5707800
 TOTAL VALUE: 6058530
 BILLING CLASS: EXEMPT
 DESCRIPTION: LO2 & 3 DUDLEY S
 BUFFALO E BM1989-
 01443
 MAP NAME: 161901
 PIN NUM: 1619096769
 PIN EXT: 000
 CITY: GAR
 TOWNSHIP: ST. MARYS
 YEAR BUILT: 0
 SALEPRICE: 0
 SALEDATE:
 TYPE USE:
 DESIGN STYLE:
 UNITS: 0
 LAND CLASS: EXEMPT
 OLD PARCEL NUMBER: 726--
ADDRESS
 ST NUM: 921
 ST MISC:
 DIR PREFIX:
 ST NAME: BUFFALO E
 ST TYPE: RD
 DIR SUFFIX:

- Interstates/Highways
- Major Roads
- Streets
- Parcels
- Corporate Limit Boundary
- ANGIER
- APEX
- CARY
- CLAYTON
- DURHAM
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE
- RALEIGH
- ROLESVILLE
- WAKE FOREST
- WENDELL
- ZEBULON
- Planning Jurisdiction Boundary
- ANGIER
- APEX
- CARY
- CLAYTON
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE

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0 1669 ft



Centennial Park



Parcel Number: 161978893
 REID: 0164192
 OWNER1: GARNER TOWN OF
 ADDR1: 900 7TH AVE
 ADDR2: GARNER NC 27529-3796
 ADDR3:
 DEED BOOK: 08671
 DEED PAGE: 1303
 DEED DATE: 8/31/2000
 DEED ACRES: 10
 BLDG VAL: 216170
 LAND VAL: 354000
 TOTAL VALUE: 570170
 BILLING CLASS: EXEMPT
 DESCRIPTION: PROP C P HOLDER ETAL
 TR1 BM1987-01495
 MAP NAME: 161902
 PIN NUM: 161978893
 PIN EXT: 000
 CITY: GAR
 TOWNSHIP: ST. MARYS
 YEAR BUILT: 0
 SALEPRICE:
 SALEDATE:
 TYPE USE:
 DESIGN STYLE:
 UNITS: 0
 LAND CLASS: EXEMPT
 OLD PARCEL NUMBER: 749--
ADDRESS
 ST NUM: 1015
 ST MISC:
 DIR PREFIX:
 ST NAME: NEW BETHEL CHURCH
 ST TYPE: RD
 DIR SUFFIX:

- Interstates/Highways
- Major Roads
- Streets
- Parcels
- Corporate Limit Boundary
- ANGIER
- APEX
- CARY
- CLAYTON
- DURHAM
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE
- RALEIGH
- ROLESVILLE
- WAKE FOREST
- WENDELL
- ZEBULON
- Planning Jurisdiction Boundary
- ANGIER
- APEX
- CARY
- CLAYTON
- FUQUAY VARINA
- GARNER
- HOLLY SPRINGS
- KNIGHTDALE
- MORRISVILLE

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APPENDIX H
Garner Parks – Statement of Significance



Town of Garner

900 7th Avenue · Garner, North Carolina 27529
Phone (919) 772-4688 · Fax (919) 662-8874 · www.GarnerNC.gov

January 9, 2012

Mr. Steve DeWitt, P.E., Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Re: Town of Garner Parks and Recreational Facilities

Dear Mr. DeWitt:

This letter is to advise you of the Town of Garner's position regarding the impacts of the "Red Corridor" on our park and recreation facilities as it relates to Section 4(f) of the federal Transportation Act of 1966. The following park facilities, all of which are owned, operated, and maintained by the Town of Garner and are addressed in the 2007 Comprehensive Parks and Recreation, Open Space & Greenways Master Plan, were evaluated:

- 1) White Deer Park;
- 2) White Deer Park Expansion Parcel;
- 3) Bryan Road Nature Park;
- 4) Thompson Road Park;
- 5) Lake Benson Park;
- 6) South Garner Park; and
- 7) Centennial Park.

White Deer Park is a significant recreational resource for the Town of Garner. It is a public park used for outdoor and nature based programming, and offers fitness opportunities for residents with over 2 miles of walking/jogging trails and greenways. Primary uses include outdoor and nature programs, facility and shelter rentals, walking/jogging trails, picnicking, nature observations, education programs for local schools, playground areas, arboretum, energy and resource conservation model (solar panels, rain gardens, recycled water). I view this award winning park facility, coupled with Lake Benson Park, as Garner's signature passive recreation centerpiece. This vital recreational resource has many amenities and activities requested by our citizens that simply cannot be provided by any other Town facility. This park has greenways, nature trails, picnic shelters, playgrounds, and preservation of forested areas; nature and environmental education programming; incorporates nature study areas and wildlife habitats; preserved the quality of open spaces and wildlife habitats, birding trails, greenway connectivity to surrounding neighborhoods and other recreational areas. Impacts to this park would result in a significant loss of park and recreational resources for the Town of Garner.

The **White Deer Park Expansion Parcel** contains the town's first mile of greenway, known as the South Garner Greenway. The South Garner greenway connects numerous neighborhoods, several elementary schools, local businesses, and several existing parks. This public greenway is a significant recreational resource that offers people accessible places to walk, bike, or jog. Impacts to this facility would be significant as this important greenway provides connectivity to the Town's our mile central loop that serves many neighborhoods in central Garner.

Bryan Road Nature Park is currently undeveloped. When this public park is developed, when coupled with the public Mahler's Creek Greenway, the site will offer scenic passive recreational opportunities for area residents. The Town envisions this park facility as a significant recreational resource that will provide walking/jogging trails, picnicking, nature observation areas, and environmental educational programs for local school age children in the future. Impacts to these planned public spaces would result in the significant loss of planned park and recreational resources for the future of the Town of Garner. Town leaders have wisely planned ahead to ensure that future generations have protected public land for parks and recreation and environmental education uses.

Thompson Road Park is a significant recreational resource that is used for public athletic programming and field rentals. The primary use is for football and soccer athletic programming and field rentals for the general public. This is a significant facility for athletic programming and as such is central to the Town's ability to provide our citizens with youth and adult playing fields for soccer and football. In the future this park has the potential to provide connectivity between existing town greenways and nearby schools and neighborhoods. Impacts to this park would result in a significant loss of park and recreational resources for the Town of Garner.

Lake Benson Park contains significant amounts of public open space that is mainly used for passive recreational activities including trails used for walking and jogging; nature observations, fishing, boating, and special events. Without question this park is a significant recreational resource for the Town and is considered the crown jewel of our park facilities. Lake Benson is a vital public recreation resource used for all town-sponsored large festivals and events such as the July 3rd Independence Day Celebration, White Deer Dash 5K Road Race, Goblins in the Park and the Easter Holiday Extravaganza. All of these events are open to the general public. It also has shelter rentals, walking/jogging trails, picnicking areas, nature observation areas, playgrounds, fishing, and boating, kayaking and camping opportunities available for use by the general public. I cannot begin to describe the significance of this essential park facility. Our community has fully embraced this park in every way in terms of making use of its facilities. It is home to our July 3rd Independence Celebration which is truly a family event for not only the Garner community but for the region as well. This park, along with the adjoining White Deer Park, is truly the crown jewel of the Town's park system. We have no other facility that provides the range of passive recreation uses that is found in Lake Benson Park. Impacts to this park would result in a significant loss of park and recreational resources for the Town of Garner, Wake County, and the entire region.

South Garner Park is a significant recreational resource that is used for public athletic programming, facility rentals, local, regional and national tournaments, walking and hiking. Primary uses include local athletic softball and soccer practices, games and tournaments. It has three softball fields, a multipurpose field, concessions area, tennis courts, a hiking trail and a large playground. The existing hiking trail connects surrounding neighborhoods to the park as well. This park provides vital playing fields which are critical to our athletic programming needs

for the youth and adults of the entire community. Impacts to this park would result in a significant loss of park and recreational resources for the Town of Garner.

Centennial Park is a significant recreational resource that is used for public athletic programming, facility rentals, local, regional and national tournaments; walking, jogging and shelter rentals. The primary use of the facility is for soccer practices, games and local and regional tournaments. The park features soccer fields, a picnic shelter, playground and a paved walking trail. As the Town's main public soccer complex, Centennial Park is critical to the Town's ability to provide quality playing fields for the public as well hosting local and regional tournaments. Impacts to this park would result in a significant loss of park and recreational resources for the Town of Garner, Wake County, and the entire region.

I hope this letter adequately explains the various activities and uses that each of the abovementioned parks provide and the significance and importance that each one has with regard to the Town's mission to deliver quality recreational activities and programming to the Garner public and to the public of the region. Please do not hesitate to contact me if you have questions and need additional information.

Sincerely,

A handwritten signature in cursive script that reads "Hardin Watkins".

Hardin Watkins
Town Manager

APPENDIX I
Capital Area TAC – December 12, 2012 Meeting Minutes

**TRANSPORTATION ADVISORY COMMITTEE
DECEMBER 12, 2012
MINUTES**

ATTACHMENT 4

The Transportation Advisory Committee met on Wednesday, December 12, 2012 at 4:00 p.m. at the CAMPO offices, Professional Building, Hargett Street, Raleigh, NC with the following present:

Members

Vivian Jones, Chairperson
Gale Adcock
Joe Bryan
Don Bumgarner
John Byrne
Ed Grannis
Mike Grannis
Jackie Holcombe
Russell Killen
Sam Laughery
Nancy McFarlane
Darryl Moss
Dick Sears
Elic Senter
Gus Tulloss
Keith Weatherly
Ronnie Williams

Representing

Wake Forest
Cary
Wake County
Zebulon
Fuquay-Varina
NCDOT
Clayton
Morrisville
Knightdale
Wendell
Raleigh
Creedmoor
Holly Springs
Franklinton
NCDOT
Apex
Garner

Staff

Ed Johnson
Richard Epps
Valorie Lockhart
Chris Lukasina
Robert McCain
Shelby Powell
Todd Stroupe
Amy Ward
Diane Wilson
Kenneth Withrow

Representing

CAMPO Director
CAMPO Staff
CAMPO Staff
CAMPO Staff
CAMPO Staff
CAMPO Staff
CAMPO Staff
CAMPO Staff
CAMPO Staff
CAMPO Staff

Others Present

John Hodges-Copple
Wally Bowman
Unwanna Dabney
Gerald Daniel
Todd Delk

Representing

TJCOG
NCDOT
FHWA
Raleigh
Cary

Tim Gardiner
Benjamin Howell
Danny Johnson
Mike Kennon
Eric Lamb
Sarah Lee
Jeff Merritt
Bruce Siceloff
Darcy Zoric

Wake County
Morrisville
TCC Chairman
Raleigh
Raleigh
NCDOT
Triangle Transit
News & Observer
Triangle Transit

The meeting was called to order by Chairperson Jones with discussion and actions taken as shown:

AGENDA – APPROVED AS AMENDED

Mr. Johnson reported there would be an additional item discussed relating to I-540. Without objection, the agenda was approved as amended.

PUBLIC COMMENTS – NONE RECEIVED

The floor was opened for comments by those in attendance relating to items that are not on the agenda. No one asked to be heard.

COMPREHENSIVE 2040 METROPOLITAN TRANSPORTATION PLAN (CMTP) – APPROVED

Mr. Lukasina reviewed this item noting at the November 28, 2012 meeting, the TAC received an update on the 2040 Comprehensive Metropolitan Transportation Plan (2040 CMTP), conducted a public hearing and concluded a formal public comment period to receive comments on the draft plan from agencies, interested parties and the public.

The MPO staff has been working with the CMTP subcommittee and member agencies to review candidate projects based on a cost-benefit analysis as well as natural and cultural environmental impacts and local priority. An ongoing fiscal impact analysis has also been underway to review various funding levels on the future transportation network as well as reviewing financial forecasts and potential new revenue sources.

The next steps were reviewed that included:

- December 12, 2012 2040 MTP approval and release for Air Quality Conformity Determination Process
- April 17, 2013 Adopt 2040 MTP & Air Quality Conformity Analysis

Mr. Lukasina indicated the MPO staff has been conducting subarea meetings to continue to refine the preferred option of draft 2040 MTP. The CMTP subcommittee meetings on

November 13 and 27, 2012 as well as the November 15 TCC meeting provided additional input on the draft plan.

Members received in their packets Attachment 5 including maps and tables identifying the preliminary draft of the Preferred Alternative option for the transportation network. These are broken out by mode with a map and list for roadway projects and transit projects (fixed guideway and bus) as well as prioritization tools for bicycle and pedestrian modes. Additionally, the financial planning elements by source were included. Attachment 5A contained a summary of public comments received.

The MPO staff has recommended approval of the draft 2040 CMTP. Mr. Lukasina reported the TCC received this information at their December 6, 2012 meeting and recommended approval of the draft 2040 CMTP.

Mr. Lukasina provided slides depicting any modifications made since the last presentation. He indicated all concerns expressed at previous meetings were addressed.

Mr. Sears moved approval of the 2040 CMTP for the Air Quality Conformity Determination Process. His motion was seconded by Mr. Weatherly, and unanimously passed. Chairperson Jones ruled the motion adopted.

I-540 PROJECT – VARIOUS ACTIONS TAKEN

Members received at the meeting a letter from FHWA and Corps of Engineers relating to completion of the Outer Loop around the rest of Raleigh and Wake County in the south and southeast quadrant of the county has been top priority for this MPO for 20 years. In March, 2011, there was a question raised about one alternative proposed for detailed study (red route) going through Garner in a way they do not want. In reaction to that the General Assembly passed a law stating that the Triangle Expressway Southeast Extension project shall not be located north of an existing protected corridor established by NCDOT in 1995, except in the area of I-40 East. The law restricts the location of alternative corridors prior to the engineering and environmental analysis required by NEPA. Mr. Johnson reviewed the history of the project and indicated the orange route has been reserved for years. For the last year work has been ongoing on an alternative that would take into account Congress' intent. We have tried to hasten along environmental studies and encourage the NEPA process to be considerate of local plans in order to determine the best alternative. We proposed to go back and revise the purpose and need a statement to raise that as an issue of the project purpose and rescan alternatives that had already been eliminated but left red and orange for further study. Mr. Johnson reported the letter was received Monday cosigned by FHWA and US Corps of Engineers stating why they thought that strategy was not viable and did not want to support it. He reviewed concerns included in the letter noting both the Corps and FHWA have concerns that include local plan support as a primary NEPA project purpose may inappropriately limit the study of a full range of Detailed Study Alternatives. The Corps felt it would not support their

requirement to analyze and objectively compare alternatives for this project that requires a Clean Water Act permit. Mr. Johnson noted this is on the agenda today to allow the TAC, as the policy board, to decide what to do moving forward.

Mr. Byrne asked Mr. Johnson if he had a recommendation with Mr. Johnson responding he did not have a recommendation and was asking the TAC to consider what it wants to do. This is a situation that needs to be decided by the TAC.

Mr. Sears indicated an easy way around this would be to take the NC Session Law 2011-7 and get it off the books. He indicated the red route will never be built and felt that is where we are now.

Mr. Sears stated that even though we know the red route will never be built, to move this along he would move that the North Carolina General Assembly repeal Session Law 2011-7 at their earliest convenience. His motion was seconded by Mr. Byrne.

Mr. Williams indicated that this law was put on the books as an incentive for economic development and could not see why anyone would consider taking the law off the books. He urged members to think about the motion before acting. Hardin Watkins, Garner Town Manager, indicated since this bill was introduced by Senator Stevens, there have been major economic investments in Garner. There has been more building and jobs created. He reviewed the various projects that have developed in Garner including a facility for treatment of troubled youth, etc. He indicated not only is there economic investment, but also human investment. He referred to the red line going on top of a \$12 million building. He referred to Penske's vehicle maintenance facility that created 20 jobs and a fast growing 55 and over community (Villages) and all 28 homes have been closed and 10 were under construction since that bill was passed. Mr. Watkins indicated it would be a problem getting people to continue building homes, businesses, etc. noting people will not understand. He noted the red route goes through 13 Garner neighborhoods, parks and their only industrial park. He felt approval of the motion would shut down Garner's development. Mr. Sears stated he agreed with Mr. Watkins's comments but we need to get this project moving and this is the only way.

Mr. Weatherly indicated Apex stands with Garner and wanted to be sure the most responsible route is selected. He indicated the Feds have drawn a line in the sand and they will study this red route or will not complete the Outer Loop. He felt the best thing to do is vote for the motion to eliminate one of the road blocks and insure a study is done in the most expeditious fashion as possible to get it off the map. He indicated he stands with Garner to be sure their community is not disrupted and did not feel it would be disrupted when the final decision is made. He felt the Feds need to be allowed to study this route. Mr. Weatherly indicated in the short term with the red route out of the way, Garner is getting a few million dollars worth of economic development; however, 540

will make economic development explode in that area. He noted we have to go through short term pain of letting the Feds study this route. He indicated he intended to vote for the motion and felt it will not be a hardship to Garner.

Mr. Bryan indicated Mr. Weatherly's comments were well said and we talk all the time about how regulations cost areas their small businesses and a lot of money and this is an example of regulations coming from a body that doesn't have a public official on it and that makes no sense at all. Mr. Bryan indicated this study is something that will not happen and that will delay economic development. He indicated we had a protected corridor and that is the agency piling regulations on communities and they are costing future progress and once again we are having to go through an exercise that makes no sense to anybody at this table.

Mr. Byrne questioned what Mr. Bryan would like to do noting to him the Feds are calling all the shots. He noted he had tried to understand this and had been meeting with Garner and wanted to do what Garner wants to do and questioned what Mr. Bryan would suggest. Mr. Bryan asked if anyone had talked to our Congressional representatives to be sure they are aware of what agencies are doing that are supposed to be working for them.

Mr. Johnson indicated there are 3 laws pertaining to this project – NEPA, Clean Water Act and the Endangered Species Act. The Corps of Engineers has to follow the Clean Water Act and have to do detailed field surveys before practicability is considered. The Clean Water Act comes late in the process. He indicated if the desire is to have something done congressionally, there must be a willingness to do something about the Clean Water Act and the Endangered Species Act. He indicated Congress does not want to mess with it and the Corps has to follow those regulations.

Mr. Weatherly stated he is looking for the most expeditious path to get moving on construction of the Outer Loop and felt we should acquiesce to what the Feds want in order to complete the tasks that need to be completed. He indicated the red route will not prevail.

Mr. Killen indicated what we have now is this new situation with the letter from the Feds and felt it would be hard for this body to say we are not going to do the rest of the Outer Loop. He expressed concern with pushing the project another 3-4 years down the line. He indicated from an economic development issue, the problem is there now due to the uncertainty about what the legislature will do is going to be there. He felt we are just delaying this process by causing this not to move forward. Mr. Killen stated the problem is there and economic development will be inhibited now.

Mr. Sears noted he agreed with Garner about economic development; however, once this route is started and completed, growth will come. He noted his motion is on the table and felt this is the only option.

Mr. Williams provided an amendment to the motion that the following routes should be studied along with red and orange --- blue, purple, lilac and plum. Each of these 6 routes should be fully studied and fully included in the Draft Environmental Impact Statement (DEIS).

Mr. Johnson reviewed the status of the various alternatives. He indicated Mr. Williams is saying if we are going to do detailed surveys on red and orange, blue and purple should be studied as well. He indicated studying all alternatives is a wise choice. Mr. Weatherly indicated he would support that as a separate motion.

Mr. Watkins indicated the president of the Garner Chamber of Commerce says they were not worried about this when there were 6 lines to the map because there were lots of alternatives but when each disappears and there are only the red and orange left, people in Garner will be worried. He urged that all routes be studied. Mr. Byrne indicated he did not believe we should be telling the legislature how to do anything. Mr. Johnson explained this request should go to NCDOT since they are doing the study. He felt if the TAC encouraged them to study all 6 routes, they will probably do that.

There was no second to the amendment motion made by Mr. Williams.

A vote on the motion made by Mr. Sears was taken with all members voting in the affirmative with the exception of Mr. Bryan and Mr. Williams who voted against the motion. Chairperson Jones ruled the motion adopted.

Mr. Williams moved that the following routes should be studied by NCDOT along with red and orange --- blue, purple, lilac and plum. Each of these 6 routes should be fully studied and fully included in the Draft Environmental Impact Statement (DEIS). His motion was seconded by Ms. Adcock.

Mr. Bryan questioned if these routes have been studied by NCDOT. Mr. Johnson indicated the preliminary screening for purpose and needs stated they would not meet purpose and need enough to go through their study. He talked to DOT staff and due to concern about likelihood of being sued because of lack of study, they are amenable to studying the 6 routes.

Mr. Bryan felt this is a fallacy again noting we have had technical people tell us these are not suitable alternatives. This will cause all citizens in Wake County to worry about those risks that were taken off the table previously. Mr. Bryan felt we are putting people at risk on routes determined not to be chosen routes and all of a sudden all of these people

in Wake County are going to say “what happened”. Mr. Byrne felt we should not tell the DOT how to do their job. Mr. Johnson explained the issue is the blue route has no wetland impact like the red route. It was eliminated because it was circuitous. Population growth in that area is higher. He indicated the blue route should be considered so we can say we took a full look at a full range of alternatives. There are reasons why it might be a good idea to do this even if it upsets people. Ms. Holcombe questioned what is this body’s authority to make such a recommendation to DOT. Chairperson Jones indicated the TAC can ask them but cannot make them do this.

A vote on the motion made by Mr. Williams was taken with all members voting in the affirmative with the exception of Mr. Bryan who voted in opposition. Chairperson Jones ruled the motion adopted.

Mr. Williams made a motion that all conversations, deliberations and discussions regarding repeal, substitution, amendment or modification to NCSL 2011-7 include meaningful participation with a Town of Garner official and CAMPO official. His motion was seconded by Mr. Bryan. Mr. Weatherly felt this would be overstepping our bounds and we cannot require anyone not to have private conversations with anyone. A vote on the motion was taken with Mr. Williams and Mr. Bryan voting in the affirmative and all other members voting in opposition. Chairperson Jones rules that the motion failed.

ADJOURNMENT

There being no further business, the meeting adjourned at 4:50 p.m.

Respectfully submitted,

Brenda Hunt

APPENDIX J
Comments on January 13, 2012 Draft Alternatives
Development and Analysis Report



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

January 25, 2012

Jennifer Harris, PE
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, North Carolina 27699-1578

Dear Ms. Harris:

This letter is in response to your January 13, 2012 Draft Alternatives Development and Analysis Report for the Triangle Expressway Southeast Extension project in Wake and Johnston Counties, North Carolina (TIP Nos. R-2721, R-2828, R-2829). The U.S. Fish and Wildlife Service (Service) provides the following comments 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).

General Comments

As you know, the Service has been very involved in this project through the Turnpike Environmental Agency Coordination meetings. At these meetings, the Service has frequently stated its concern regarding the likely adverse effects of the project on the federally endangered dwarf wedgemussel (DWM, *Alasmodonta heterodon*) within the Swift Creek watershed (Neuse River basin). It is anticipated that the Federal Highway Administration (FHWA), as the lead federal action agency, will initiate formal Section 7 consultation by submitting to the Service an initiation package which includes a Biological Assessment (BA). In return, the Service will conduct an analysis to determine if the project will jeopardize the continued existence of the dwarf wedgemussel and issue a Biological Opinion (BO). Since there is a significant lack of information needed to develop the Environmental Baseline portions of the BA and BO, the NC Turnpike Authority (NCTA) has agreed to fund additional studies within the Swift Creek watershed to fill in the information gaps. We applaud the NCTA's decision to fund these studies, and we believe that the information obtained will expedite the Section 7 consultation and increase the probability of accurate conclusions.

In order to avoid a Jeopardy BO, the action agency must not "engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." In order for the Service to ultimately recover the DWM, the 1993 Dwarf Wedgemussel Recovery Plan requires, among other criteria, that a viable population (i.e. a population containing a sufficient number of reproducing adults to maintain genetic variability,

and annual recruitment is adequate to maintain a stable population) occur in Swift Creek. Therefore, maintenance of such a population in the post-project Swift Creek watershed is vitally important. We cannot understate the significance of this issue.

Rapid development within the Swift Creek watershed below the Lake Benson Dam over the last 10-15 years has severely impacted the DWM. Mussel survey data from this timeframe implies a declining population. It is currently unknown if the DWM population in Swift Creek is viable, or whether the habitat conditions are sufficient to maintain a viable population. We are hopeful that the aforementioned studies will answer these questions. Also, as part of the Service's recovery efforts for the DWM in North Carolina, a workshop was recently held to initiate the evaluation of statewide conservation actions for the species. Workshop participants included species experts from the Service, the NC Wildlife Resources Commission, NC Natural Heritage Program, North Carolina State University and environmental consultants. The long-term vision of the workshop was to provide a foundation for strategic planning for conservation of DWM in North Carolina. The next step coming out of this workshop is to develop predictive models useful for comparing the effectiveness of proposed actions. The Service and our partners plan to test the models on Swift Creek (Neuse Basin). Therefore, Swift Creek weighs very heavily in our plans to recover the DWM.

The Draft Alternatives Development and Analysis Report states that the NCTA continues to recommend the elimination of the Red Corridor Alternative, thus leaving only one remaining corridor alternative (Orange) within Phase I. We acknowledge and understand the NCTA's rationale for arriving at this conclusion, especially noting the Red Corridor's significant and disproportionate impacts on the human environment. The Orange Corridor, being the protected corridor with right-of-way purchases made many years ago prior to any comprehensive environmental analysis, obviously greatly minimizes impacts on the human environment. However, the Orange Corridor has great potential to adversely affect the DWM since it crosses Swift Creek, tributaries to Swift Creek, and a significant portion of the watershed. The Orange Corridor connects to I-40 at a particularly unfavorable location for the DWM. This location puts the interchanges with I-40 and US 70 Bypass on top of several tributaries to Swift Creek and also is in close proximity to the Swift Creek main stem. The DWM is at risk from direct effects associated with construction of the project (e.g. erosion and siltation from construction) and from indirect effects associated with the degradation of water quality from secondary development induced by the new road. Increased impervious surface and storm water runoff from additional development would likely further degrade the water quality of Swift Creek and its tributaries. Also, other proposed projects within the same study area such as the proposed widening of I-40 (TIP No. I-5111) and at least two bridge replacements on Swift Creek could cumulatively contribute to a decline in habitat quality for the DWM. In summary, the Service finds the Orange Corridor very problematic.

In the event that the Service issues a "No Jeopardy" BO (which remains to be determined), the action agency will be required to implement Reasonable and Prudent Measures (RPM) in order to minimize the effects of take on the species. The information developed from the additional studies being conducted will assist in the Jeopardy Analysis and in developing the RPM and the Terms and Conditions for implementing them. Although there is a wide range of RPM of different forms and scope which may be developed, one possible RPM may involve captive

propagation and augmentation of DWM in the Swift Creek watershed. Though much of the technical and procedural knowledge for propagating DWM has previously been developed, the Service and our partners lack a dedicated facility and staff to conduct DWM propagation on a large scale. The ability or the lack thereof, to propagate DWM and augment the population in Swift Creek may factor significantly in our analysis to determine whether this project will jeopardize the continued existence of the species.


Specific Comments

Page 4-5 states “the dam on the southeast side of Lake Benson acts as a barrier between populations of the species upstream and downstream of this point, precluding genetic exchange between these two populations.” This statement would be true if there were DWM upstream of Lake Benson. To the best of our knowledge, the species has never been collected upstream of Lake Benson.

Page 5-16 states “Because the Orange Corridor Alternative would cross I-40 in this area, it has the potential to negatively impact habitat important for the survival of the Dwarf Wedgemussel in Wake County.” We would add Johnston County to this, as most DWM observations have been in Johnston County, and the Johnston County portion of the Swift Creek DWM population is exposed to water quality degradation from a larger amount of the overall watershed.

The Service appreciates the opportunity to review this document. We look forward to discussing it at the next Turnpike Environmental Agency Coordination meeting. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520, ext. 32.

Sincerely,


for Pete Benjamin
Field Supervisor

Electronic copy: Chris Militscher, USEPA, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Eric Alsmeyer, USACE, Raleigh, NC
Scott McLendon, USACE, Wilmington, NC
George Hoops, FHWA, Raleigh, NC
Brian Wrenn, NCDWQ, Raleigh, NC

Maseman, Kristin

From: Alsmeyer, Eric C SAW [<mailto:Eric.C.Alsmeyer@usace.army.mil>]

Sent: Tuesday, February 14, 2012 1:23 PM

To: Bass, Kiersten R

Cc: Roberts, Tracy; Wrenn, Brian; Chris.Lukasina@campo-nc.us; militscher.chris@epa.gov; Midkiff, Eric; gary_jordan@fws.gov; george.hoops@dot.gov; Harris, Jennifer; Gledhill-earley, Renee; Wilson, Travis W.; McLendon, Scott C SAW

Subject: RE: Southeast Extension Alternatives Development and Analysis Report/AID SAW-2009-02240 (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Kiersten: The Corps has the following comments on the Draft Alternatives Development and Analysis Report (DADAR) that was submitted on 1/9/2012.:

- 1) Please note that we have NOT reached a decision regarding your recommendation to eliminate the Orange to Red to Green alternative from further study in the draft EIS.
- 2) Figure 5-3, "Potential Impacts to Planned Parks and Recreational Facilities", should show a 300 foot optimized corridor (similar to Figure 5-4) to give a better depiction of how the facilities would likely be impacted by the corridor.
- 3) As we discussed at our meeting on December 20, 2011, Table 5-9 on page 5-36 should include a row for the Orange Corridor Alternative showing the values for "predicted" wetlands and streams, to allow a valid comparison between the Red and Orange Alternatives.
- 4) The results of the Prediction Methodology, in Table 1 of Appendix I, do not seem to demonstrate that the Prediction Methodology provided much, if any, more reliability at predicting wetland acreages than the NWI Wetlands. Statistical analysis to show the accuracy of the Prediction Methodology will be required before it can be used to compare the Red and Orange Alternatives.

Please reply or call if you have any questions or if I may serve you in any other way.

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 Customer Satisfaction Survey located at our website at <http://per2.nwp.usace.army.mil/survey.html> to complete the survey online (Paper copies available upon request).

Eric Alsmeyer
Project Manager
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Fax: (919) 562-0421
Regulatory Homepage: <http://www.saw.usace.army.mil/WETLANDS>

Classification: UNCLASSIFIED

Caveats: NONE



REPLY TO
ATTENTION OF:

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

February 17, 2012

Regulatory Division/1145b

SUBJECT: Action ID 2009-02240; STIP Nos. R-2721, R-2828, and R-2829

Steven D. DeWitt, P.E.
Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Dear Mr. DeWitt:

Reference the proposed North Carolina Turnpike Authority (NCTA) project known as the Triangle Expressway Southeast Extension toll facility (TIP Nos. R-2721, R-2828, and R-2829), from NC 540 currently under construction at NC 55 in Holly Springs, to existing I-540 north of Poole Road and Clayton, in southern Wake and northeastern Johnston Counties, North Carolina. Reference also my March 23, 2011 letter asking for additional information regarding alternatives; my meeting on December 20, 2011, with representatives of the North Carolina Department of Transportation, including the NCTA and its consultants, and of the Federal Highway Administration; and NCTA's submittal on January 9, 2012, of the revised Draft Alternatives Development and Analysis Report (DADAR), for the subject project.

We understand that Governor Perdue signed legislation (Senate Bill 165) on March 18, 2011, that restricted the study, planning, and development of the Triangle Expressway Southeast Extension from the area north of the protected corridor and west of Interstate 40 (the area of the Red and Pink Corridors). We believe that state law which restricts the consideration of reasonable and practicable alternatives does not preclude our requirement under the 404 (b)(1) Guidelines (40 CFR Part 230) to analyze and objectively compare alternatives for this or any project that requires a Clean Water Act permit. While we are sensitive to the potential impacts to communities, public recreation facilities, and an industrial park in the Town of Garner, associated with the Red Corridor, we believe that its elimination from further consideration compromises our ability to satisfy our statutory requirements under the Guidelines.

The DADAR recommends that the Orange to Red to Green Corridor not be included as a reasonable and practicable alternative for detailed study in the Draft Environmental Impact Statement (DEIS) because it has significant and disproportionate impacts on the human environment, has limited ability to meet traffic needs, and is not a feasible and prudent Alternative under Section 4(f) of the Department of Transportation Act of 1966.

Our permit program requires that we make a complete, thorough, and unbiased review of all factors associated with a proposed project within jurisdictional waters of the United States.

A major component of the review is the consideration of reasonable and practicable alternatives, required by both the National Environmental Policy Act (NEPA) and the Clean Water Act 404 (b)(1) Guidelines (40 CFR Part 230). The 404 (b)(1) Guidelines require that the Corps can permit a project only if the applicant demonstrates that other alternatives are not practicable, available or less environmentally damaging. Practicable relates to cost, logistics or technology. As is FHWA, we are required to satisfy the provisions of NEPA which include the requirement to develop an EIS to examine all reasonable alternatives to the proposal, with reasonable alternatives including those that are practical or feasible from the technical and economic standpoint, rather than simply desirable from the standpoint of the applicant. Table 5-2 in the DADAR, Preliminary Alternatives – Summary of Potential Impacts, describes impacts to 43.7 acres of wetlands, and 29,770 linear feet of stream, for a 300- foot right-of-way for the end-to-end Orange to Red to Green Alternative that includes the Red Corridor, based on map data including the National Wetlands Inventory. This compares to impacts to 88.1 acre of wetlands and 36,110 linear feet of stream for the end-to-end Orange to Green Alternative. Furthermore, the US Fish and Wildlife Service has indicated that construction within the Orange Corridor would result in an adverse impact to the federally endangered dwarf wedge mussel (*Alasmidonta heterodon*) and that formal consultation will be required. Based on this information, the Orange to Red to Green Alternative appears to be a less environmentally damaging alternative and should be included as an alternative to be studied the Draft Environmental Impact Statement (DEIS). Nothing in our administrative record for this project indicates that the Orange to Red to Green Alternative is not practicable under the 404 (b) (1) Guidelines.

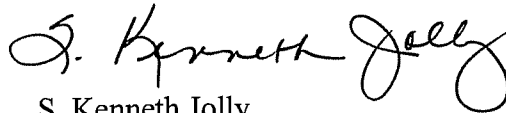
We are being asked to eliminate every alternative segment for a major portion of the corridor, with the exception of one, including the elimination of the least environmentally damaging alternative, prior to the release of a DEIS and before we, the agencies and the public have had an opportunity to conduct a side-by-side comparison of the one remaining segment alternative with the Red Corridor, with the usual level of data that is available after the DEIS, including detailed wetland delineation information, functional design, an analysis of the indirect and cumulative impacts, and additional data related to our twenty-one public interest review factors. Where we have previously elected to eliminate alternatives from further consideration prior to release of a DEIS, 1) the eliminated alternative clearly had unacceptable impacts to either the natural or human environment as compared to other alternatives under consideration, and 2) there was a sufficient number of remaining alternatives that encompassed a range of impacts to both the natural and human environment that the alternatives could be reasonably compared. Therefore, we believe it is premature to eliminate what we believe to be the environmentally preferable alternative from further consideration

We understand that FHWA has determined that several 4(f) properties may be impacted by the Red Corridor. Furthermore, we are also aware of the restriction that Section 4(f) of the Department of Transportation Act of 1966 places upon FHWA including a stipulation that FHWA cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless there is no feasible and prudent alternative to the use of land, or the action includes all possible planning to minimize harm to the property resulting from use. While this may be a consideration utilized by FHWA in determining a preferred alternative, we do not concur that the Department of Transportation Act should be used to define a reasonable range of alternatives under NEPA, and believe that it

cannot be used to eliminate alternatives that should otherwise be considered under the Clean Water Act 404(b)(1) Guidelines. We continue to believe that in order for the EIS to satisfy our respective agencies' responsibilities, it should rigorously explore and objectively evaluate the Red corridor. For the reasons discussed above, if the NCTA elects to complete its NEPA analysis and release a DEIS without including the Orange to Red to Green Alternative as an alternative for detailed study, and the NCTA intends to pursue Department of the Army authorization for this project, we may find it necessary to terminate our cooperating agency status with the FHWA and supplement the FHWA EIS with our own document.

Should you have any questions, please call Mr. Alsmeyer at (919) 554-4884, extension 23.

Sincerely,



S. Kenneth Jolly
Chief, Regulatory Division
Wilmington District

Copies Furnished:

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Washington, DC 20515

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Mr. Brian Wrenn
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Mr. Travis Wilson
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4619 Mail Service Center
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North Carolina Department of Environment and Natural Resources

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

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

February 16, 2012

MEMORANDUM

To: Jennifer Harris, PE, Director of Planning and Environmental Services, Turnpike Authority

From: Brian Wrenn, Transportation Permitting Unit, Division of Water Quality *BW*

Subject: Comments on the Draft Alternatives Development and Analysis Report related to the proposed Triangle Expressway Southeast Extension, Wake and Johnston Counties, Federal Aid Project No. STP-0540(19), State Project Nos. 6.401078, 6.401079, and 6.401080, TIP Project Nos. R-2721, R-2828, and R-2829.

This office has reviewed the referenced document dated received January 18, 2012. The NC Division of Water Quality (NCDWQ) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. It is our understanding that the project as presented will result in impacts to jurisdictional wetlands, streams, and other surface waters. NCDWQ offers the following comments based on review of the aforementioned document:

1. NCDWQ agrees with carrying forward the alternatives identified in section 5.8, page 5-38. However, NCDWQ feels that the Red Alternative should continue to be studied through the DEIS.
2. Any alternatives in this analysis and the DEIS should be compared using data gathered through the same methodologies. Table 5-9, page 5-36 states that the data for the Red Alternative was gathered using a predictive model while the Orange Alternative data was based on delineated streams and wetlands. This is not a fair comparison and should be corrected to provide consistency throughout the analysis.

NCDWQ appreciates the opportunity to provide comments on your project. Should you have any questions or require any additional information, please contact Brian Wrenn at 919-807-6365.

cc: Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office (electronic copy only)
George Hoops, Federal Highway Administration
Chris Militscher, Environmental Protection Agency (electronic copy only)
Gary Jordan, US Fish and Wildlife Service (electronic copy only)
Travis Wilson, NC Wildlife Resources Commission
File Copy

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

One
North Carolina
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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

February 20, 2012

MEMORANDUM

TO: Jennifer Harris
Planning and Environmental Studies
NC Turnpike Authority

FROM: Ramona M. Bartos *RMB for Ramona M. Bartos*

SUBJECT: Triangle Expressway Southeast Extension Project, R-2721, R-2828 and R-2829,
Wake and Johnston Counties, CH 98-0457

Thank you for your memorandum of January 13, 2012, transmitting the Draft Alternatives Development and Analysis Report for the above cited project. We have reviewed the document and offer the following comments.

The elimination of an alternative based on its potential to affect historic resources appears to be premature in that the only historic resources considered to this point are those that are already National Register-listed properties. The possibility that National Register-eligible properties may or may not be present in any of the alternatives has not been taken into consideration. Thus, alternatives that may have as yet unidentified Section 106 and 4(f) properties in them may become unusable.

We would also note that while National Register-listed or eligible properties are mentioned as being protected by Section 4(f), the lack of detail in the several figures and text give the impression that only public parks are being given full consideration under the regulation.

With regard to archaeological resources, we have no issues that involve alternative selection and concur with the decision to retain the five preliminary study alternatives outlined in the report. As the project develops further, we will continue to consult regarding the need for archaeological investigations once the preferred alternative is selected. We look forward to working with you and your staff on this project.

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

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/807-6579. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Matt Wilkerson, NCDOT
Mary Pope Furr, NCDOT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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

February 16, 2012

Ms. Jennifer Harris, P.E.
Director of Planning and Environmental Studies
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, N.C. 27699-1578

SUBJECT: Draft Alternatives Development and Analysis Report; Triangle Expressway Southeast Extension (Raleigh Southern Outer Loop); Wake and Johnston Counties; TIP Nos.: R-2721/R-2828/R-2829

Dear Ms. Harris:

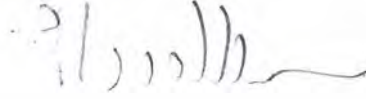
The North Carolina Turnpike Authority (NCTA) and the Federal Highway Administration (FHWA) have requested comments on the above subject report in consideration of the Turnpike Environmental Agency Coordination (TEAC) process. The U.S. Environmental Protection Agency (EPA) is providing preliminary technical assistance comments as requested and consistent with the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA).

EPA understands that the intent of this draft report is to document the alternatives development and screening process utilized by the NCTA and to present NCTA's findings of detailed study alternatives for the Draft Environmental Impact Statement (DEIS). The NCTA is also requesting that EPA provide any issues of concern that would result in the denial or significant delay in the issuance of any environmental permits for the proposed project. EPA has attached some NEPA technical assistance comments for the transportation agencies to consider as the NEPA process goes forward (See Attachment A).

EPA proposes to stay involved with the transportation, permitting and resource agencies under NEPA for the proposed project to help to ensure that a reasonable and appropriate range of alternatives under NEPA be evaluated. It is recommended that consideration of a non-toll combination or 'hybrid' alternative that will potentially meet some or part of the project purpose be carried forward for detailed study for comparative purposes under NEPA, such as Mass Transit, TSM and with specific roadways improvements. Additionally, the environmental benefits of Mass Transit "Hybrid" might also be evaluated in a comparative fashion to the new location DSAs (Orange to Green or Brown), including potentially air quality benefits, less impacts and disruption to neighborhoods, schools and places of worship, reduced natural resource impacts such as wetlands, streams, and endangered species habitat, etc. Under a Mass Transit 'Hybrid' option, the transportation agencies may also wish to consider evaluating

express bus services between major commuting and activity centers, public parking areas for commuters, etc. Please contact Mr. Christopher A. Militscher of my staff at 404-562-9512 or 919-856-4206 or by e-mail at militscher.chris@epa.gov should you have any questions.

Sincerely,

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

Heinz J. Mueller, Chief
NEPA Program Office

w/ATTACHMENT A

cc: H. Wicker, Acting Chief, USACE-Wilmington District
E. Alsmeyer, USACE-Raleigh Field Office
B. Wrenn, NCDWQ
G. Hoops, FHWA

ATTACHMENT A
NEPA Technical Assistance Comments
Draft Alternatives Development and Analysis Report for
An Environmental Impact Statement
Triangle Expressway Southeast Extension (Raleigh Southern Outer Loop/I-540)
Wake and Johnston Counties, N.C.
TIP Nos.: R-2721, R-2828, and R-2929

Purpose and Need

Section 1.2.1 of the report summarizes the need for the proposed project, including '*goal for region's overall transportation system is to provide a cost-effective system that, among other things maintains long-term mobility for people and the movement of goods*'. This section refers the reader to Section 3.4.1 of the report. Neither this stated goal nor the subsequent section identifies an actual need or existing problem with the current transportation system. The second need statement in Section 1.2.1 refers to '*limited transportation options to provide sufficient capacity for efficient, high-speed local and through travel between rapidly growing communities south and east of Raleigh and major employment and activity centers along the 540 Outer Loop and along highways connecting to the Outer Loop, such as I-40, NC 147 and US 1/64*'. This is statement of need is not supported by data. The rationale for a 'parallel', high-speed corridor to existing I-40 is not documented in the report. This section also refers to '*limited transit options in the area*' and refers the reader to Section 3.2. Section 3.2 discusses the project study area traffic conditions. There are no details or any analysis of current or future transit in this section of the report under Purpose and Need. The third need statement in Section 1.2.1 includes poor levels of service (LOS). The LOS need was established using 2008 traffic data along I-40 between NC 147 and Lake Wheeler Road, and most segments of I-40 between White Oak Road and NC 42, most of NC 42, and NC 50 between NC 42 and US 70. The transportation agency predictions are that substantial portions of the roadway network in and near the project study area will deteriorate to LOS E or F by 2035. Figure 1-4 includes many multi-lane facilities outside of the project study area depicted on Figure 3-1. Many of the roadway segments identified in Figure 1-4 appear to have little to do with traffic conditions in the project study area and would be influenced by other network deficiencies and traffic patterns.

Traffic congestion as expressed by current (2008) LOS is depicted on Figure 1-3 of the report. Most of the roadway segments in the project study area are LOS A-C and LOS D. The potential causes of the LOS E along NC 42 have not been fully detailed. NC 42 is primarily a 2-lane rural route with no control of access. There were previously planned NCDOT Transportation Improvement Program (TIP) projects that were one time being considered to addresses the current deficiencies along NC 42 between US 401 and I-40. Spot transportation improvements along NC 50 could also address the sections which have 2008 LOS E.

The primary need of the proposed Outer Loop project appears to be future congestion in the 2035. The details of the traffic models and forecasts are not specifically identified in the report but appear to be generally based upon past development and population growth. Since 2009, the project study area's growth rate has substantially decreased from the two previous decades. In the last 3 years, the growth in southern Wake County has been well below previous years and new development is reported to have stagnated. There is no current demographic information in the report that would identify this significant socio-economic change in the project study area or when the current trend in development might be reversed.

The purposes of the proposed project are identified in Section 1.2.2 of the report. The first purpose is to *improve mobility during the peak travel period* and the second purpose is to *reduce forecast congestion*. Another desirable outcome that is stated in Section 1.2.2 includes, *'improve system linkage'*. This section refers to the *'final link in the 540 Outer Loop envisioned more than 40 years ago'*. The same 'line on the map for the 540 Outer Loop' from 40 years ago appears to the location of the Orange Corridor. The report does not have any specific measures as to how mobility will be improved during the peak travel period. Removing a signalized intersection can potentially improve mobility. It is difficult to understand a purpose of reducing forecasted congestion when the traffic modeling, growth projections and other assumptions are not identified in the report.

The 'system linkage' issue as part of a purpose and need statement is recognized by FHWA as being very problematic. EPA recommends that the transportation agencies refer to the FHWA's *Purpose and Need Guidance for FHWA-funded Projects in North Carolina (Version 2, February 2009)*. EPA and other Merger Team representatives attended this very valuable training sponsored by FHWA. From this Guidance (Page 17): *"It will be a rare situation where system linkage will be the primary purpose. We don't typically decide to link something just because we can"*. From the statements in the report, however, it appears that system linkage is a primary purpose for the project. The report did not provide the supporting data required to identify any actual need concerning mobility (high-speed) or capacity issues along the existing roadways consistent with current guidance and policies.

For some additional information on Purpose and Need, please see the technical assistance information below and the website link:

Using Purpose and Need in Decision-making

As noted above, the purpose and need define what can be considered reasonable, prudent, and practicable alternatives. The decision-making process should first consider those alternatives which meet the purpose and need for the project at an acceptable cost and level of environmental impact relative to the benefits which will be derived from the project.

At times, it is possible that no alternative meets all aspects of the project's purpose and need. In such a case, it must be determined if the alternatives are acceptable and worthwhile pursuing in light of the cost, environmental impact and less than optimal transportation solution. To properly assess this, it is important to determine the elements of the purpose and need which are critical to the project, as opposed to those which may be desirable or simply support it, the critical elements are those which if not met, at least to some minimal level, would lead to a "no-build" decision. Determining critical needs could include policy decisions as well as technical considerations.

Other times, the cost or level of environmental impact are not acceptable and an alternative that only partially meets the purpose and need or the no-build alternative must be considered. If the costs are justified in relation to the transportation benefits, then a less than full-build alternative may be acceptable. <http://www.environment.fhwa.dot.gov/projdev/tdmneed.asp>

In addition to the aforementioned general guidance, an equally important component of the NEPA decision-making and public disclosure processes includes the evaluation of reasonable alternatives not within the lead transportation agency's area of expertise, such as mass transit options. One very important socio-economic benefit from Mass Transit options is the creation of numerous permanent jobs without the disproportionate requirement for infrastructure maintenance. Most highway construction projects provide only temporary employment during construction and very minimal permanent employment opportunities. Another obvious benefit of transportation agencies studying Mass Transit options and performing a reasonable comparison (40 CFR Section 1502.14) is that there are potentially fewer and less substantial indirect and cumulative impacts associated with most Mass Transit options compared to new location, multi-lane toll road alternatives. According to the FHWA, the maintenance of the existing 46,726 plus mile Interstate system and other multi-lane roadways is of a National interest and concern. Transportation agencies and policy-makers have been searching for the means to fund all of these "Every Day Count" priorities including thousands of bridge replacement projects. Conventional highway funding sources such as Federal and State sales taxes on fuels, highway trust fund taxes on vehicle inspections and emissions testing, and general revenue tax sources are not believed to be adequate to meet the demand for all of the new location, multi-lane highways and Interstates.

First Tier Screening of Alternatives Concepts

In Section 2 of the report, alternative concepts were considered as listed on Page 2-1, including TDM, TSM, Mass-Transit or Multi-modal Alternative Concepts and Build Alternatives. It is stated that *"those concepts that cannot be developed to meet the purpose of the project will be removed from further consideration"*. The purposes of the project were narrowly defined in the previous section of the report. The highway 'threshold criteria' as further defined and as alluded to in the report to meet purpose and need were 'pre-disposed' to eliminate all but new location, multi-lane toll road alternatives. These potential issues were identified by resource and permitting agencies at previous TEAC meetings.

Section 2.2.1 discusses the ability to improve transportation mobility for trips within or traveling through the Southeast Extension project study area during the peak travel period. Two 'measures of effectiveness' (MOE) were identified in the report and used average speed and travel times. For average speed, the project study area does not include the main segment of I-40 (Figure 5-7). For travel times, the project study area does not include the main segment of I-40 (Figure 5-7). For average speed, *"Alternative concepts that that would result in the comparatively largest increase in average speed over current forecast conditions for 2035 would meet this MOE"*. For travel times, *"The largest comparatively reduction in travel times for the typical user of the transportation system traveling through the project study area over current forecast conditions for 2035 would meet this condition"*. Because mass-transit and multi-modal options in the project study area is either non-existent or severely limited to a few isolated locations within the project study area (Page 2-3), these MOE's are believed to be biased towards personal vehicle use and alternative concepts that promote new location, high-speed highways.

Section 2.2.2 discusses the ability to reduce forecast traffic congestion on the existing roadway network within the project study area. The poor LOS multi-lane sections of I-40 are not located in the defined project study area. Projected increases in traffic volumes are not quantified in this section. Three MOE's are identified in this section, including total vehicle hours traveled on average daily period, congested vehicle miles traveled on peak travel period, and congested vehicle hours traveled on peak travel period. These MOEs are for the major roadway network which includes congested areas outside of the defined project study area. Most of the MOEs relate to improving travel times and increasing vehicle speeds throughout the existing roadway network. The transportation agencies are promoting high-speed facilities in the project study area that is primarily rural and suburban between the two project termini. FHWA has conducted numerous safety studies concern high speed facilities: "*In 2008, there were 37,261 fatalities on our Nation's roadways. Of these; 11,674 (31 percent) were speeding-related!*". Source: <http://safety.fhwa.dot.gov/speedmgmt/>

Also included on this FHWA website is a 2007 chart depicting fatality rates per road type: Interstate facilities in rural areas had a rate almost double that of Interstates in urban areas. This FHWA report also includes the following potentially relevant information:

Speeding—traveling too fast for conditions or in excess of the posted speed limits—is a factor in almost one-third of all fatal crashes and costs America approximately **\$27.7 billion dollars** in economic costs each year. Speeding is a safety concern on all roads, regardless of their speed limits. Much of the public concern about speeding has been focused on high-speed Interstates.

Considering the extremely significant costs of fatalities associated with high-speed Interstate facilities, especially in rural areas, the proposed purpose of the project "*to provide sufficient (additional) capacity for efficient, high speed local and through travel*" (Page 1-2) the transportation agencies may wish to consider and evaluate this relevant safety issue in the DEIS.

Section 2.2.3 discusses the ability to improve system linkage in the roadway network in the project study area. The discussion includes the statement: "*the project would provide the key remaining link in the Outer Loop system*". None of the no-build alternative concepts can meet this narrowly defined criterion. Please refer to the following: "*Care should be taken that the purpose and need statement is not so narrowly drafted that it unreasonably points to a single solution*" (FHWA Administrator: 7/23/03 Memorandum on Guidance on "Purpose and Need"). <http://www.environment.fhwa.dot.gov/guidebook/Gjoint.asp>

The report notes that the traffic study area used for analysis of MOEs was different than the project study area (Page 2-9; "*to create the traffic study area*"). This two different study area approach is believed by EPA to be unprecedented in North Carolian. The rationale provided in this section of the report is potentially very biased towards new location highways. Under Section 2.1.4, there is future transit improvements cited that are substantially out of the project study area. Most of these future projects are included in 2025 and 2035 horizon years and do not specifically address any of the limited current congestion or future projected congestion in southern Wake County.

The report identifies several MOEs, including average speed, travel times, average daily VHT, congested VMT, and congested VHT. All of these measures and the undefined Triangle Regional Model (TRM) are biased towards eliminating TDM, TSM and Mass Transit/Multi-modal Alternative Concepts ("*Travel times could not be determined for TDM, TSM, and Mass*

Transit/Multi-Modal Alternative Concepts using TRM).. An example can be found in Table 2-1 where the average daily speeds in the 'traffic study area', PM Peak Period, shows a 3.5 percent change for Hybrid #3 and a 5.7% change for a New location highway. Hybrid #3 was also subsequently 'screened out' by the transportation agencies. As identified on Page 2-14, only 50 area buses enter the 'traffic study area'. There is no connecting mass transit to most of the project study area. Commuters in the project study area (and beyond) have little to no choice but to take privately owned vehicles ("*There would need to be a twelve-fold increase in the number of buses serving the area to achieve the required threshold*", Page 2-15). Section 2.4.4 of the report provides the rationale for eliminating the Mass Transit/Multi-modal Alternative Concept, including the inability to improve mobility, reduce forecast traffic congestion, and improve system linkage. The report only identified buses as the potential means to accommodate commuters in the project study area. Light rail was not considered for the mobility analysis nor was a full comparative combination of alternatives, such as some TSM, some modest increases in express bus services from significant commuting areas and a light rail project connecting major commuting centers and destinations. The highway transportation agencies, including the North Carolina Turnpike Authority, might wish to further consult with other transportation officials (e.g., CATS and FTA) on the potential benefits of Mass Transit options for urban and suburban areas.

Forecasted congestion based upon out of date growth projections is not an existing transportation problem. A combination of light rail and some local roadway improvements would also potentially meet the purpose of improving 'system linkage' and potentially eliminate 'future congestion'. However, this concept was not fully evaluated in the report. Page 2-2 cites that "*The TSM Alternative will neither complete the Outer Loop system nor provide faster access to the I-40/I-540 network for residents in the project study area*". TSM was eliminated in the previous section of the report (i.e., Section 2.4.3). Most of the east-west section of I-40 is outside of the project study area. Most of I-540 is not included in the project study area. The report concludes that, "*the Mass Transit/Multi-modal Alternative Concept would fail to meet the two primary elements of [the] project purpose: improving mobility and reducing congestion*". As previously identified in the report, there is minimal existing congestion within the project study area and the purpose is based on future 'forecasted' congestion. There are other transportation alternatives that can improve mobility, including light rail

Table 2-7 of the report provides a summary of quartile rankings of MOEs for Build Alternative Concepts. As anticipated from the previous TRM analyses, the New Location Freeway ranks 4 out of 4 for the six (6) total MOEs. However, the TRM analysis was evaluated as 'Freeway'. The proposed project is being proposed as solely as a toll facility. According to FHWA and NCTA team representatives; there is no other means of potentially funding the I-540/Raleigh Southern Outer Loop without tolling.

The Hybrid Alternatives Concepts (Hybrids 1, 2 and 3) were also developed using improve existing and new location segments to meet future capacity that is not supported by current traffic numbers (i.e., AADT). For example, Hybrid 1 is proposed to be improving existing roadways to 10-lane, controlled access facilities. Hybrid 2 and 3 are proposed as 6-lane, controlled access facilities. Capacity issues within the project study area were not fully identified or evaluated in the report. The traffic study area does not correspond to the project study area and the rationale included in the report is not substantiated by either facts or precedent. Hybrid 3 was

retained for the next level of screening but was never seriously considered by the transportation agencies (See section below).

It is also noted that the transportation agencies have mixed regulatory terminology regarding the development of alternatives and the first tier screening of alternative concepts (Page 1-3). The Council on Environmental Quality (CEQ) regulations on NEPA refer to reasonable alternatives (40 CFR Section 1502.14(a) and (c)). A 'practicable' alternative is essentially a Clean Water Act Section 404(b)(1) Guideline term utilized under the U.S. Army Corps of Engineers' determination of the 'Least Environmentally Damaging Practicable Alternative' (LEDPA). The NCTA and FHWA are not utilizing the NEPA/Section 404 Merger process and the issue of practicability does not generally become a consideration until after the draft environmental document and the USACE's selection of the LEDPA. Without specific information on jurisdictional impacts, funding, etc., none of the current build Alternative Concepts in this report may truly be 'practicable'.

Development of Preliminary Corridor Segments

FHWA and NCTA should consider the proposed project in light of the requirements at 40 CFR Section 1506.1(a)(2). Page 3-2 includes the statement that several alternative corridors were developed and analyzed in the mid-1990's and public hearings were held to present the corridor proposed for protection ('Hard-ship' purchases totaling 36 parcels). The report does not fully address the early acquisition needs or what environmental features were identified during this development of a protected corridor. The report does not include the specifics or the relevant documentation for these pre-Notice of Intent (NOI) public hearings. Approximately 464 acres of right of way representing 32% of the needed protected corridor has already been purchased. Most of the purchased properties were reported in previous TEAC meetings to include undeveloped land along the Phase I portion of the proposed project (The 'Orange' corridor). The Orange Corridor represents approximately 17 miles of the total project length of approximately 22 miles. However, other reports, including the NCDOT website indicate that the proposed I-540/Raleigh Southern Outer Loop (Triangle Expressway Southeast Extension) is approximately 33 miles. An accurate length of the different Phases (i.e., I and II) of the proposed project should be included in a Draft Environmental Impact Statement.

The statement on Page 3-3 is noted regarding NCDOT's compliance with 23 CFR 710.501(b). EPA suggests that the transportation agencies may wish to provide a copy of the concurrence letter concerning 23 CFR 710.501(c)(2) compliance in the Draft EIS.

On page 3-5 of the report, it is stated that: "*Agency representatives, local governments and the public have not proposed many potential corridor segments beyond those currently under consideration*". It is most likely the responsibility of the transportation agencies to develop new corridors and alignments and not the parties cited above as they would be unfamiliar with Interstate design requirements, innovate funding solutions, etc. The transportation agencies potentially screened out Hybrid 3 Alternative Concept Segment by the statements made in Section 3.5.3 on Tolling.

This section of the report again differentiates between the project study area and the traffic area conditions beyond the boundaries of the project study area. The rationale provided on Pages 3-1 and 3-2 is not a reasonable approach. Several agencies during TEAC meetings

requested that the transportation agencies consider the inclusion of the project study area to the north side of I-40 between I-440 in the east and to US 1/US 64 to the west. Using traffic data for these areas outside of the project study area is not consistent with other N.C. Outer Loop projects studied under NEPA. The transportation agencies declined this recommendation and maintained that the reasoning for the differences of a project study area and a traffic study area would be fully addressed in the DEIS.

It is very important to note that the Preliminary Study Corridors are 1,000 feet wide as is noted in the first sentence in Section 3 of the report. Some other key issues identified in this report are the local planning organization requests to construct a 6-lane, new location toll facility and the recommendations for interchanges at Holly Springs Road, Bells Lake Road, US 401, Old Stage Road, NC 50, I-40, White Oak Road, US 70, Old Baucom Road, Auburn Knightdale Road, and Poole Road. In addition, there are also interchanges proposed at the termini at NC 55/I-540 and I-540. In total, 13 interchanges are proposed. There is no actual traffic data or public surveys demonstrating why commuters would leave local free roadways where there is little to no congestion and utilize a 6-lane toll facility. The relevant studies on building multi-lane, toll facilities in rural/suburban areas that have very few existing traffic problems are not referenced in this report. The local planning organizational 'need' for a 6-lane facility is not supportable when portions of I-40 between the RDU airport exit and the Lake Wheeler Road exit had been 4-lanes for decades and only recently a widening project to 6-lanes was completed on the most significant east-west corridor in N.C. Much of the transportation planning relies on the TRM. The assumptions and specific parameters used in these types of models are not disclosed in this report. The NCDOT webpage indicates there is no funding for the proposed project. From the NCDOT website, it appears that some of the statements provided in the report may conflict with the information being provided to the resource agencies. Please see: <http://www.ncdot.gov/projects/southeastextension/>

Transportation demands, social and economic demands and mobility considerations are the basis for additional transportation infrastructure in southeastern Wake County. The proposed Southeast Extension would link the towns of Clayton, Garner, Fuquay Varina, Holly Springs, Apex, Cary and Raleigh. The project would increase the capacity of the existing roadway network and divert traffic from secondary roads in areas experiencing substantial growth.

The Southeast Extension project has been officially on hold following enactment of North Carolina Session Law 2011-7 (N.C. S.L. 2011-7) in March 2011. This law restricts the Turnpike Authority from considering alternatives for the Triangle Expressway Southeast Extension that are north of the protected "Orange" corridor. Since March 2011, our project work has been limited while we evaluate the implications of this law and how it impacts our ability to progress the project in accordance with the federal National Environmental Policy Act as well as the federal Clean Water Act.

Target dates for project milestones including publication of the Draft Environmental Impact Statement (EIS) will remain uncertain until ways can be identified to address agency concerns while meeting the requirements of N.C. S.L. 2011-7 and the National Environmental Policy Act. The

previously anticipated Draft EIS date of February 2012 is uncertain at this time due to the project having been delayed since March 2011.

The Southeast Extension study will consider various solutions for addressing area transportation needs. **These studies will consider several options, including improving existing roads and building a new roadway, along with non-roadway options such as mass transit.**

A protected corridor preserves the location of a new road from encroaching development. In the mid-1990s, the North Carolina Department of Transportation (NCDOT), under the Transportation Corridor Official Map Act, established a protected corridor for Phase I of the Southeast Extension between NC 55 in Apex and I-40 near the Johnston/Wake County line. The Turnpike Authority will evaluate the protected corridor, as well as other possible routes, as part of this study.

The report does not identify the social and economic demands for the proposed Raleigh Southern Outer Loop. The report does not demonstrate how a multi-lane toll facility will divert traffic from (free) secondary roads. The report does not address the Project Financial Feasibility Study for tolling. The NCDOT webpage information is potentially not consistent with the report as mass transit and other options were screened out by the FHWA and NCTA in the first tier because it did not meet the primary purposes of the project (e.g., “*Complete the I-540/Outer Loop as was envisioned 40 years ago*”). The statement concerning the consideration of other options being studied appears to be somewhat confusing based upon the narrow statements of the project’s purposes and the very strict screening criteria to eliminate all other alternative concepts that are not a new location, multi-lane, toll road. FHWA and NCDOT officials have previously expressed their concerns at other project meetings with maintaining North Carolina’s current 1,014.78 mile Interstate system¹. The DEIS may also wish to include the NCDOT TIP No. I-5111, I-40 Widening and Improvements in Wake and Johnston County, that is meant to add additional capacity to I-40 within the project study area.

Second Tier Screening of Preliminary Corridor Segments

As with several other turnpike projects, the transportation agencies presented a matrix of ‘impacts’ for over 40 different new location segments based upon 1,000-foot corridor information. None of the actual impacts from the 300-350 feet of needed right of way was studied or ‘ground-truthed’. Some of the segments were as short as 0.35 miles (#35) while other segments were more than 11 miles (#26). For the Phase I area, there were realistically 5 corridors studied in the second tier, including Orange, Red, Blue, Pink and Purple as a ‘cross-over’ (Figure 4-3). The transportation agencies requested that all of the segments comprising Blue, Purple, Red and Pink be eliminated. The permit and resource agencies agreed to eliminate the Blue and the Purple. Some of the permitting and resource agencies requested that Red and Pink be retained with Orange as Detailed Study Alternatives for comparative purposes under NEPA, 40 CFR Section 1502.14(a).

Beyond the potential screening of some very ‘unreasonable’ alternatives under the Second Tier Screening process utilized by the transportation agencies, there is a very real

concern expressed by certain resource agencies at past TEAC meetings that reasonable alternatives are being eliminated at this pre-DEIS stage based upon unverified GIS level maps and data using 1,000-foot corridor impact information. Table 4-3 of the report presents the segment composition of the new location Preliminary Study Corridors. The transportation agencies eliminated 12 corridor segments at the Second Tier evaluation. Preliminary Study Alternatives are identified in Table 4-4 with information on the Orange to Red to Green segments left blank in the table (“The Red Alignment”).

Third Tier Screening of Preliminary Corridor Alternatives

Table 5-1 represents screening criteria using both potential right of way impacts for certain resources (e.g., Residential and business relocations) and 1,000-foot corridors for other resources (e.g., Section 4(f) applicable resources). The transportation agencies efforts in this Third Tier screening exercise were identified as being problematic by several agencies. Impacts and estimates are being based upon ‘potential’ right of way locations within a 1,000-foot corridor. From a statistically analysis perspective, a ‘typical 300-foot right of way’ within 1,000 feet creates enormous potential errors in the impact data. Efforts to shift potential right of way alignments for various resources were potentially made for some Preliminary Corridor Alternatives and not for others.

A primary case to this point is identified on Page 5-6 of the report concerning the Critical Water Supply Area to Swift Creek. This section of the report stresses the impact (Calculated to 10.6 acres) to this environmental feature and impacts to 303(d) listed streams. For an objective analysis, the transportation agencies should evaluate other TIP projects with similar resource impact issues (e.g., TIP No.: U-3109; Critical Water Supply Area impacted; TIP No.: U-3321; several miles of 303(d) listed streams potentially impacted).

EPA notes the comments in the report concerning third tier screening results, impact comparison, public and agency input, third tier screening conclusions, justifications for eliminating the Pink and Red alternatives based upon various criteria, petitions received from different stakeholder groups, etc. EPA notes the DSAs identified in Figure 5-7 which shows the primary DSAs (Orange – Phase I; and Green or Brown – Phase II, with the minor corridor adjustments for using Mint Green, Teal and Tan Alternatives). The transportation agencies should also provide an explanation of the control of access differences between a ‘freeway’ type design and an ‘expressway’ design in the DEIS.

An Additional Reference:

¹ North Carolina Projects: One of the first Interstate 40 relocation projects was the construction of a southern bypass for Interstate 40 around Winston-Salem. Built and opened to traffic in 1993, Interstate 40 now bypasses downtown Winston-Salem. The former freeway alignment is now part of Business Loop I-40. A future Winston-Salem Northern Beltway is planned for construction starting in 2010 or later; this belt route would be designated as Interstate 74 and Interstate 274 once it opens to traffic. The Greensboro Urban Loop, which is partially constructed, currently carries Interstate 40 around downtown Greensboro. The portion of the loop that carries Interstate 40 was constructed south of downtown through the early to mid-2000s. The southeastern section opened on February 21, 2004, and the southwestern portion opened on February 21, 2008. With the opening of this bypass, Interstate 40 was relocated onto the bypass, and the old freeway alignment was re-designated as Business Loop I-40. Portions of the Greensboro Urban Loop are designated as part of Interstate 73, and the future northern half of the loop is tentatively designated Future Interstate 840. In North Carolina, a recent widening between the Durham

Freeway (Exit 279) and Interstate 540 (Exit 283) brings Interstate 40 up to seven lanes. This stretch receives 147,000 vehicles per day, so the widening is generally a welcomed sight. Expansion to eight lanes, which entails adding a fourth westbound lane, was completed on October 1, 2003. The \$12 million project began in 2001. Even with these additional lanes other sections of Interstate 40 are planned for improvements as the area continues to gain population. Source: <http://www.interstate-guide.com/i-040.html>

Maseman, Kristin

From: Riffey, Deanna
Sent: Thursday, February 09, 2012 11:06 AM
To: Bass, Kiersten R
Subject: RE: Southeast Extension Alternatives Development and Analysis Report

Hello Kiersten.

I only have a couple of comments on the report:

- 1) Section 5.2.2.4 on page 5-17 - In the first paragraph, first sentence one important advantage is mentioned, but yet none are listed in this paragraph. If you skip on down to the 3rd paragraph then two advantages are mentioned and explained. A little confusing.
- 2) On figures I was looking for Bass Lake. It seems that Bass Lake was not colored blue like the other water bodies. The shape is there just not color.
- 3) Also on Figure 4-2, according to Table 4-1, I believe that segment 39 is not supposed to be shown on this figure like the other eliminated segments.

Deanna

From: Bass, Kiersten R
Sent: Thursday, February 02, 2012 9:57 AM
To: Roberts, Tracy; agamber@ncdot.gov; Johnson, Benjetta L; Wrenn, Brian; Ellis, Bruce O; Dagnino, Carla S; Chris.Lukasina@campo-nc.us; militscher.chris@epa.gov; Shumate, Christy; Chang, David S; Riffey, Deanna; Sykes, Dewayne L; Hall, Dolores; Keener, Donna; Ed.Johnson@ci.raleigh.nc.us; Lusk, Elizabeth L; Simes, Amy; eric.c.alsmeyer@usace.army.mil; Midkiff, Eric; gary_jordan@fws.gov; george.hoops@dot.gov; hwatkins@garnernc.gov; Harris, Jennifer; joe@letsgetmoving.org; samuel.k.jolly@usace.army.mil; kmarkham@esinc.cc; Kristin Maseman; Brooks, Lonnie I; Clawson, Marshall W; Pair, Missy; Beauregard, Rachelle; Gledhill-earley, Renee; Roach, Renee B; Ridings, Rob; Roy Bruce; scott.c.mclendon@usace.army.mil; Franklin, Spencer T; Gurganus, Stephen J (Steve) - HEU; Dewitt, Steve; tsavidge@thecatenagroup.com; Wilson, Travis W.; Ford, Tris B; Bowman, John W; wsmith@mulkeyinc.com; Barrett, William A; Lipscomb, Sharon M
Subject: RE: Southeast Extension Alternatives Development and Analysis Report

All, to date the NC Turnpike Authority has received one comment letter on the Draft Alternatives Development and Analysis Report for the Triangle Expressway Southeast Extension project. Comments received are from the US Fish and Wildlife Service and are attached for your use.

We look forward to receiving your comments over the next two weeks (comment deadline is February 16th). If you have questions or concerns, please do not hesitate to contact me.

Thank you,

Kiersten R. Bass
Senior Transportation Planner
NCTA General Engineering Consultant
1 South Wilmington St, Raleigh, NC 27601
1578 MS Center, Raleigh, NC 27699-1578
919.707.2725

From: Bass, Kiersten R
Sent: Friday, January 13, 2012 2:54 PM
To: Roberts, Tracy; Emptage, Aketa A; amy.simes@ncmail.net; agamber@ncdot.gov; Johnson, Benjetta L; Wrenn, Brian;

Ellis, Bruce O; Dagnino, Carla S; Chris.Lukasina@campo-nc.us; militscher.chris@epa.gov; Shumate, Christy; Chang, David S; Riffey, Deanna; Sykes, Dewayne L; Hall, Dolores; Keener, Donna; Ed.Johnson@ci.raleigh.nc.us; Lusk, Elizabeth L; eric.c.alsmeyer@usace.army.mil; Midkiff, Eric; gary_jordan@fws.gov; george.hoops@dot.gov; hwatkins@garnernc.gov; Harris, Jennifer; joe@letsgetmoving.org; samuel.k.jolly@usace.army.mil; kmarkham@esinc.cc; Kristin Maseman; Brooks, Lonnie I; Clawson, Marshall W; Pair, Missy; Beauregard, Rachelle; Gledhill-earley, Renee; Roach, Renee B; Ridings, Rob; Roy Bruce; scott.c.mclendon@usace.army.mil; Franklin, Spencer T; Gurganus, Stephen J (Steve) - HEU; Dewitt, Steve; tsavidge@thecatenagroup.com; Wilson, Travis W.; Ford, Tris B; Bowman, John W; wsmith@mulkeyinc.com; Barrett, William A

Cc: Johnson, Kristen M

Subject: RE: Southeast Extension Alternatives Development and Analysis Report

All, due to the file size of the Draft Alternatives Development and Analysis Report for the Southeast Extension project (recently sent on my behalf by Tracy Roberts) you will need to log on to Constructware to download the report: <http://secure.constructware.com/>

For those of you not familiar with how to locate the document in Constructware, please see the attachment for instructions or feel free to contact me for assistance. Similarly if you need assistance with logging into Constructware (username and/or password) please contact Kristen Johnson (kmjohnson4@ncdot.gov).

Thank you,

Kiersten R. Bass

Senior Transportation Planner

NCTA General Engineering Consultant

1 South Wilmington St, Raleigh, NC 27601

1578 MS Center, Raleigh, NC 27699-1578

919.707.2725

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

From: Tracy Roberts [<mailto:system@constructware.com>]

Sent: Friday, January 13, 2012 2:43 PM

To: Emptage, Aketa A; amy.simes@ncmail.net; agamber@ncdot.gov; Johnson, Benjetta L; Wrenn, Brian; Ellis, Bruce O; Dagnino, Carla S; Chris.Lukasina@campo-nc.us; militscher.chris@epa.gov; Shumate, Christy; Chang, David S; Riffey, Deanna; Sykes, Dewayne L; Hall, Dolores; Keener, Donna; Ed.Johnson@ci.raleigh.nc.us; Lusk, Elizabeth L; eric.c.alsmeyer@usace.army.mil; Midkiff, Eric; gary_jordan@fws.gov; george.hoops@dot.gov; hwatkins@garnernc.gov; Harris, Jennifer; joe@letsgetmoving.org; samuel.k.jolly@usace.army.mil; kmarkham@esinc.cc; Bass, Kiersten R; Kristin Maseman; Brooks, Lonnie I; Clawson, Marshall W; Pair, Missy; Beauregard, Rachelle; Gledhill-earley, Renee; Roach, Renee B; Ridings, Rob; Roy Bruce; scott.c.mclendon@usace.army.mil; Franklin, Spencer T; Gurganus, Stephen J (Steve) - HEU; Dewitt, Steve; tsavidge@thecatenagroup.com; Wilson, Travis W.; Ford, Tris B; Bowman, John W; wsmith@mulkeyinc.com; Barrett, William A

Subject: Southeast Extension Alternatives Development and Analysis Report

The North Carolina Turnpike Authority (NCTA) has prepared a Draft Alternatives Development and Analysis Report for the Triangle Expressway Southeast Extension project. This report documents the alternatives development and screening process and presents NCTA's recommendations for detailed study alternatives. Environmental and resource and regulatory agency coordination regarding project alternatives has included Turnpike Environmental Agency Coordination (TEAC) meetings held in August, September, November 2010, and January 20, 2011. At the January meeting we discussed recommended alternatives to be studied in detail in the project's Draft Environmental Impact Statement.

A copy of the Draft Alternatives Development and Analysis Report is available for download for your review and comment. NCTA requests written comments from your agency on the report and specifically on the recommendations for detailed study alternatives as presented in the report. In addition, please specify, as applicable, any comments your

agency considers to be issues of concern that would result in the denial or significant delay in the issuance of any environmental permits.

NCTA plans to discuss this project on March 21, 2012. In order to maintain our project schedule, please provide comments on the draft report by February 16, 2012 so that we can assess your comments, make any necessary revisions to the draft report and distribute it prior to the March meeting.

Thank you for your continued participation in the study for this project. If you have any questions or comments, please do not hesitate to contact me at jhharris1@ncdot.gov or 919.707.2704 or Kiersten Bass at krbass@ncdot.gov or 919.707.2725.

Maseman, Kristin

From: Bass, Kiersten R <krbass@ncdot.gov>
Sent: Wednesday, February 08, 2012 11:31 AM
To: Maseman, Kristin
Cc: Bruce, Roy
Subject: FW: Project: R-2721, R-2828, R-2829: (Triangle Expressway Southeast Ext. Project, Wake and Johnston Counties)

-----Original message-----

From: "Memory, John R" <rmemory@ncdot.gov>
To: "Harris, Jennifer" <jhharris1@ncdot.gov>
Sent: Wed, Feb 8, 2012 16:20:45 GMT+00:00
Subject: Project: R-2721, R-2828, R-2829: (Triangle Expressway Southeast Ext. Project, Wake and Johnston Counties)

Ms. Harris,

I have reviewed the Draft Alternatives Development and Analysis Report for the above subject project. At this time, I have no comments due to information within the report reflects no information on potential utility conflicts. However, a major utility relocation is subject to impact areas outside the future project limits.

R. Memory

J. Robert Memory, CPM

State Utility Agent

[NCDOT - Utilities Unit](#)

1555 Mail Service Center

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Fax: 919.250.4151

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

Maseman, Kristin

From: Bass, Kiersten R <krbass@ncdot.gov>
Sent: Friday, February 17, 2012 4:18 PM
To: Maseman, Kristin
Subject: Fw: SE Ext. Alts Development and Analysis Report
Attachments: SE Ext Draft Alternatives Report_with HES-PICS comments_02-17-12.docx

Connected by DROID on Verizon Wireless

-----Original message-----

From: "Ford, Tris B" <tbford@ncdot.gov>
To: "Bass, Kiersten R" <krbass@ncdot.gov>
Cc: "Harris, Jennifer" <jhharris1@ncdot.gov>, "Roberts, Tracy" <teroberts1@ncdot.gov>
Sent: Fri, Feb 17, 2012 21:02:55 GMT+00:00
Subject: SE Ext. Alts Development and Analysis Report

Kiersten,

Please see attached HES-PICS' comments on the SE Extension Alternatives Analysis Report in track changes format. We apologize for missing the deadline by one day in delivering these comments and hope that they will be able to be incorporated as you all are inclined. Thanks for the opportunity to provide comment. If you have any questions feel free to contact me.

Hope things are going well for you and the family.

Thanks,

Tris

Tristram Burke Ford
Community Planner III
Public Involvement and Community Studies

NCDOT-Human Environment Section

phone- (919) 707-6066
fax- (919) 212-5785

1598 Mail Service Center (mailing address)
Raleigh, NC 27699-1598

NCDOT Century Center Bldg. B (physical address)
1020 Birch Ridge Drive
Raleigh, NC 27610

Views expressed are my own and may not reflect any official policies of the North Carolina Department of Transportation.



February 15, 2012

Ms. Jennifer Harris, PE
Director of Planning & Environmental Studies
North Carolina Turnpike Authority
5400 Glenwood Avenue
Raleigh, NC 27612

Re: Triangle Expressway Southeast Extension Project, Wake and Johnston Counties (TIP Projects R-2721, R-2828, R-2829) Draft Alternatives Development and Analysis Report

Dear Ms Harris,

In reference to the draft Alternatives Development and Analysis Report released on January 13, 2012, this letter is to inform the North Carolina Turnpike Authority (NCTA) that the Capital Area Metropolitan Planning Organization (MPO) is supportive of the report's findings. The report includes recommendations to advance five alternatives for detailed study in the draft EIS. The MPO supports four of the five alternatives identified in Section 5.8 (p. 5-38).

At this time the MPO cannot support advancing the "Orange to Brown to Tan to Green" alternative for detailed study in the draft EIS. The MPO has previously submitted resolutions regarding the removal of the "Red" and "Tan" alternatives from further study. The draft Alternatives Development and Analysis Report prepared by NCTA further documents the adverse impacts to the cultural and human environment anticipated by these alternatives.

We feel it is critical that the North Carolina Department of Transportation continues to use the original protected corridor alignment illustrated on North Carolina Turnpike Authority maps adopted in 1996 and 1997 as the preferred choice for development and construction of the proposed NC 540 Turnpike in southern and southeastern Wake County.

We strongly urge the North Carolina Department of Transportation to construct the entire remaining portion of the outer loop as one project, rather than two. Wake County is the first and only County in the state of North Carolina to have parts of its urban loop constructed as a toll road because the aforementioned segments are region's urgently needed top priority projects that should not be delayed.

Planning and design of this major transportation facility should be in harmony with the adopted regional Long Range Transportation Plan as well as the natural and cultural environments. This new facility should minimize negative impacts to the Swift Creek Watershed and water supply area. To accomplish this, the ultimate facility design should include a toolbox of sustainable design elements such as use of BMPs throughout the project and consideration of onsite storm water treatment such as sustainable landscaping elements that are compatible with local soil type and drainage capability that are native to the region.

The MPO would also ask that the report be updated with copies of the previously submitted resolutions (attached).

The staff at the MPO looks forward to working with NCTA to develop this vital transportation facility for the future. If you need any further assistance or have questions please contact my office at (919) 996-4400.

Sincerely,

A handwritten signature in black ink, appearing to read "Edison H. Johnson, Jr.", written in a cursive style.

Edison H. Johnson, Jr., PE, FITE
Executive Director, N.C. Capital Area MPO

cc: George Hoops, P.E. – Federal Highway Administration

**RESOLUTION expressing THE NC CAPITAL AREA MPO'S POSITION REGARDING THE
ALIGNMENT OF THE FUTURE NC 540 TURNPIKE**

On motion made by Mayor Sears and seconded by Mayor Byrne , and having been put to a vote, was duly adopted, the following resolution;

WHEREAS, the proposed southern and southeastern segments of the NC 540 Turnpike are an adopted element of the Capital Area Metropolitan Planning Organization's (CAMPO) 2035 Long Range Transportation Plan; and

WHEREAS, official corridor maps show a specific alignment, adopted by the North Carolina Board of Transportation, to block new development in the preferred path of the southern segment from N.C. 55 in Holly Springs to US 401 south of Garner on August 2, 1996 and the southern segment from US 401 south of Garner to Interstate 40 south of Garner on March 7, 1997; and

WHEREAS, the proposed freeway alignment has been a fundamental transportation facility underpinning for more than 20 years of local land use and transportation decisions for the towns of Fuquay-Varina, Garner, and Holly Springs; and

WHEREAS, Wake County is the first and only County in North Carolina to have its urban loop constructed as a toll road; and

WHEREAS, the southeastern segment is likely to be much more expensive on a per mile basis than the southern segment and as such will need the revenue coming from the southern segment to help pay for it; and

WHEREAS, the southeastern segment is the Capital Area MPO's urgently needed top regional priority and therefore should not be delayed until the northern segment of the loop is converted to a turnpike to help pay for it's construction

WHEREAS, the North Carolina Turnpike Authority is looking at new alternatives (defined as "red", "blue", and "purple")that would possibly have an adverse impact upon these towns, causing disruptions to existing homes and businesses; and

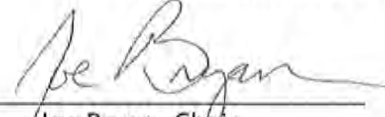
WHEREAS, the alternatives may be shorter and possibly cut construction cost; at the possible expense of environmentally sensitive areas as well as mar residential and commercial activities vital to the economic well being of the towns being impacted;

NOW, THEREFORE BE IT RESOLVED, the Capital Area MPO Transportation Advisory Committee supports the use of the original protected corridor alignment illustrated on North Carolina Turnpike Authority maps adopted in 1996 and 1997 as the preferred choice for the development and construction of the proposed NC 540 Turnpike in southern and southeastern Wake County; and

BE IT FURTHER RESOLVED, that the Capital Area MPO Transportation Advisory Committee requests that the North Carolina Turnpike Authority include the Capital Area MPO as an active stakeholder in the alternatives analysis process; and

BE IT FURTHER RESOLVED, that the Capital Area MPO Transportation Advisory Committee strongly urges the North Carolina Department of Transportation to construct the entire remaining portion of the outer loop as a turnpike in one phase rather than as two separate phases.

Adopted on this the 20th day of October, 2010



Joe Bryan, Chair
Director
Transportation Advisory Committee




Ed Johnson, Capital Area MPO
Transportation Advisory Committee Clerk

County of Wake
State of North Carolina

I, Diane Wilson, a Notary Public for said County and State, do hereby certify that on this, the 20th day of October, 2010, personally appeared before me, Joe Bryan, known to me by his presence, and acknowledged the due execution of the foregoing RESOLUTION STATING THE CAPITAL AREA MPO'S POSITION REGARDING THE ALIGNMENT OF THE FUTURE NC 540 TURNPIKE.

Witness my hand and official seal, this the 20th day of October, 2010.





Diane Wilson, Notary Public

My commission expires January 26, 2011

Comment from Regional Transportation Alliance

Summary

The Regional Transportation Alliance (RTA) supports the set of recommended Detailed Study Alternatives (DSAs) for the Triangle Expressway Southeast Extension as listed on Page 5-38 and shown on Figure 5-7 of the Draft Alternatives Development and Analysis Report. A primary reason for our support of the set of new location alternatives is that each of the recommended DSAs provide a direct interchange with Interstate 40 at the US 70/Clayton Bypass. Providing a direct interchange at that location is essential since:

- The US 70 Clayton Bypass is one of only two statewide tier freeways in the path of the proposed turnpike, the other being Interstate 40
- The design and ramp configurations for the existing I-40 / US 70 interchange specifically allow for a direct interchange with 540 at that location
- The provision of a direct interchange with three freeways (i.e., I-40, future NC 540, US 70) at a single point maximizes system connectivity by definition
- The provision of a direct interchange between three freeways minimizes the travel on existing roadways that would otherwise be required – primarily on I-40 – which enhances the fulfillment of the purpose and need for 540 to reduce congestion on the existing roadway network
- The inclusion of a direct interchange with I-40 and the US 70 Clayton Bypass will serve to maximize the independent utility of the Southern and Eastern Wake freeway segments, since either one, if built by itself, would result in a fourth freeway leg of the currently three-leg interchange

To highlight the importance of the direct interchange of the proposed turnpike with I-40 at the existing US 70/Clayton Bypass junction, the RTA requests that all future maps that show proposed or potential elements of the proposed Triangle Expressway Southeast Extension include the completed US 70/Clayton Bypass freeway.

Note:

Additional detail on the rationale for our comments and support can be found on the following pages.

Note:

Please note that we do not take a position of preference among the various combinations of potential Phase II, Eastern Wake Freeway section alignments east of I-40. Each of the remaining alternatives or combinations thereof east of I-40 will connect directly with the US 70 Clayton Bypass and continue to an interchange with I-540 and the US 64/264 Knightdale Bypass, so each of them provide comparable system connectivity.

Rationale for comments follows

Overview

The Triangle Expressway Southeast Extension is a proposed turnpike freeway in the Research Triangle region of North Carolina. The freeway will serve the areas south and east of the state capital city of Raleigh. The roadway would commence at the interchange (opening in December 2012) of Toll 540 at NC 55/Holly Springs bypass in southwestern Wake County. The freeway would continue in an easterly then northerly direction, terminating at the existing interchange of I-540 at the US 64-264/Knightdale Bypass in eastern Wake County.

System context

There are only two freeways in the [statewide tier](#) (the highest class of facilities along the entire North Carolina state highway system, see **Exhibit 1**) in the path of the proposed Southeast Extension: Interstate 40 – the most traveled freeway in the region and the only primary Interstate serving Wake County – and the US 70/Clayton Bypass. The freeways meet today at the western terminus of the US 70/Clayton Bypass near the Wake-Johnston county line at a completed interchange that opened in 2008. See **Exhibit 2**.

Both I-40 and the US 70/Clayton Bypass are posted at 70 MPH at that location. The I-40 interchange with the US 70/Clayton Bypass specifically assumed a direct connection with the future 540 freeway, and the designs, traffic forecasts, and ramp locations of that completed interchange specifically allow for such a connection. See **Exhibits 3 and 4**.

Existing corridor protection

The “Southeast Extension” is a convenience term used by the NC Turnpike Authority to describe the proposed Southern Wake and Eastern Wake freeways. The Southern Wake freeway currently has corridor protection between NC 55 in southwestern Wake County and the now-existing interchange between I-40 and the US 70/Clayton bypass near the Wake/Johnston County line. The Eastern Wake freeway currently has limited corridor protection for about one mile north of the interchange of I-40 and the US 70/Clayton bypass. The corridor protection approved in 1997 for the eastern terminus of the Southern Wake freeway, and the corridor protection for the southern terminus area of the Eastern Wake freeway (resulting from the Southern Wake freeway 1997 corridor protection), specifically assumes and allows for a direct interchange between 540 and I-40 at the then-proposed US 70/Clayton bypass. See **Exhibit 5**.

System connectivity and relief to existing roadways

Our understanding is that the purpose and need of 540 is to improve transportation mobility in the project area and to reduce congestion on the existing roadway network. Having future 540 converge at the same location with I-40 and the US 70/Clayton Bypass via free-flow ramps would clearly be superior from a system connectivity standpoint since it enables a direct interchange. As an example, westbound travelers from US 70/Clayton Bypass would be able to continue west on 540 without ever entering I-40 – thus allowing a direct connection between two statewide tier freeways without requiring travel on a third statewide tier freeway. The direct connection will reduce volumes and delays on I-40 and relieve the merging and weaving maneuvers that would otherwise ensue without such a robust linkage.

The corollary is that any new location corridor alternative that did not include a direct interchange with I-40 at the US 70/Clayton Bypass would necessarily create a scenario that would require the use of an intervening freeway (I-40) to connect from an existing statewide tier freeway (US 70/Clayton bypass) to a **proposed one (the future 540 “Southeast Extension” freeway)**. Our understanding is that not providing a direct connection between 540 with I-40 at US 70/Clayton Bypass would have a substantial adverse impact on the roadway network, with volumes on portions of I-40 south of I-440 more than 25% higher than would occur with a direct interchange – again contrary to the purpose and need of 540 of reducing congestion on the existing roadway network.

Interdependent but distinct segments, with independent utility and a common convergence point

While the Southern Wake and Eastern Wake freeways are currently being studied as a single corridor by the NC Turnpike Authority, the “Southeast Extension” is a convenience term for two interdependent but distinct freeway segments, as noted above. The Southern Wake and Eastern Wake freeways could have been studied separately from each other, perhaps in sequence instead of concurrently – just as the Northern Wake and Western Wake freeways were analyzed and then constructed under separate timetables.

If the Southern Wake freeway – the section with corridor protection – would have been proposed to have been studied first, it is instructive to consider what the easternmost terminus point (project alternatives convergence point) would have been. Under that scenario, our expectation is that all proposed study corridors would have logically been required to converge at the existing I-40 interchange with the US 70/Clayton bypass. This is the location where the only two freeways on the statewide tier in the entire proposed 540 freeway path already converge – and this convergence point would be congruent with the existing configuration of the I-40/Clayton Bypass interchange that already allows for a future connection with 540 at that location, as noted above and as shown in Exhibits 3 and 4.

Further, if the Southern Wake freeway were then approved for construction and subsequently opened to traffic, with the Eastern Wake freeway delayed for a period of time, the Southern Wake freeway would clearly have independent utility. It would provide (in concert with the new Toll 540 and Toll 147 to the north and west) a direct freeway bypass of the I-40 exits serving Raleigh, Cary, and RTP. In addition, it would provide a direct, free-flow connection with the US 70/Clayton Bypass freeway. That independent utility would clearly be maximized with a direct connection with I-40 at the US 70/Clayton Bypass.

(Note: The above comment is not advocating that the Southern Wake and Eastern Wake freeways should have been studied or should be constructed separately, only that that they could have been considered separately, just like the Northern and Western Wake freeways were, in order to highlight the importance of convergence at I-40 and the US 70/Clayton Bypass.)

(Note: The above comment is not advocating that 100% of the ultimate Southern Wake freeway alignment must remain within the corridor protection envelope, only that the eastern terminus point of the Southern Wake freeway, if studied as an independent project, would likely have been the I-40 interchange at the US 70/Clayton bypass which is the eastern end of corridor protection.)

Summary

The Regional Transportation Alliance (RTA) supports the set of recommended Detailed Study Alternatives (DSAs) for the Triangle Expressway Southeast Extension as listed on Page 5-38 and shown on Figure 5-7 of the Draft Alternatives Development and Analysis Report. A primary reason for our support of the set of new location alternatives is that each of the recommended DSAs provide a direct interchange with Interstate 40 at the US 70/Clayton Bypass. Providing a direct interchange at that location is essential since:

- The US 70 Clayton Bypass is one of only two statewide tier freeways in the path of the proposed turnpike, the other being Interstate 40
- The design and ramp configurations for the existing I-40 / US 70 interchange specifically allow for a direct interchange with 540 at that location
- The provision of a direct interchange with three freeways (i.e., I-40, future NC 540, US 70) at a single point maximizes system connectivity by definition
- The provision of a direct interchange between three freeways minimizes the travel on existing roadways that would otherwise be required – primarily on I-40 – which enhances the fulfillment of the purpose and need for 540 to reduce congestion on the existing roadway network
- The inclusion of a direct interchange with I-40 and the US 70 Clayton Bypass will serve to maximize the independent utility of the Southern and Eastern Wake freeway segments, since either one, if built by itself, would result in a fourth freeway leg of the currently three-leg interchange

Request to include existing US 70/Clayton Bypass freeway on all future project maps

An opportunity to further clarify the essential linkage of US 70/Clayton Bypass exists. See **Exhibit 6** for the current 540/Southeast Extension project map, dated March 2010, and still the current map available [via the NC Turnpike Authority web site](#) for the Southeast Extension project. Note that the map does not include the US 70/Clayton Bypass as either an existing or proposed freeway, even though the freeway was open to traffic in June 2008, prior to the commencement of the 540/Triangle Expressway Southeast Extension study work in 2010. Exhibit 2, described previously, shows a regional vicinity map showing the US 70/Clayton Bypass and other area freeways. It would greatly simplify the ability to emphasize the direct linkage between 540 and I-40 at the US 70/Clayton Bypass that each of the recommended Detailed Study Alternatives provide if the existing US 70/Clayton Bypass were shown on Southeast Extension project maps. Therefore, to highlight the importance of the direct interchange of the proposed turnpike with I-40 at the existing US 70/Clayton Bypass junction, the RTA requests that all future Southeast Extension project maps also include the completed US 70/Clayton Bypass freeway.

Exhibit 1 – Statewide Tier facilities in vicinity of proposed Southeast Extension; blue portions of US 70 southeast of Raleigh are existing freeway

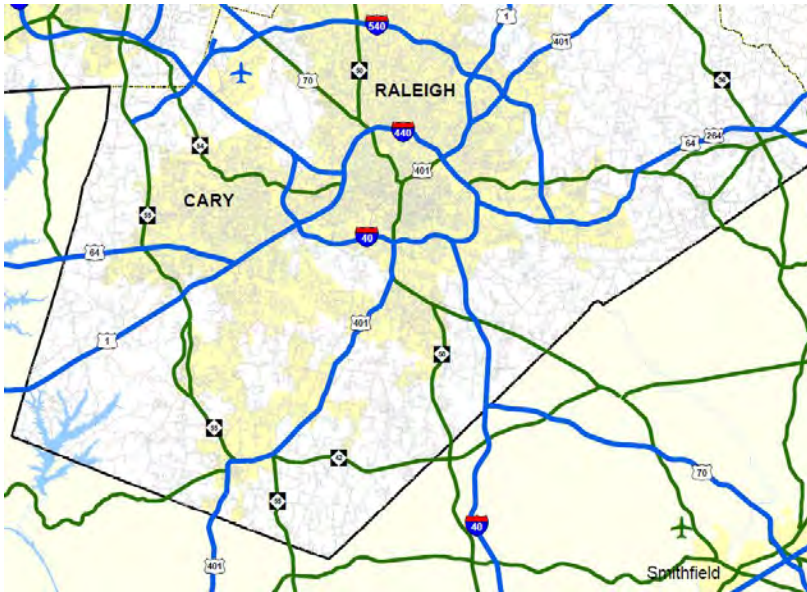


Exhibit 2 – Southeast Extension vicinity map, showing US 70/Clayton Bypass (courtesy Mapquest.com)

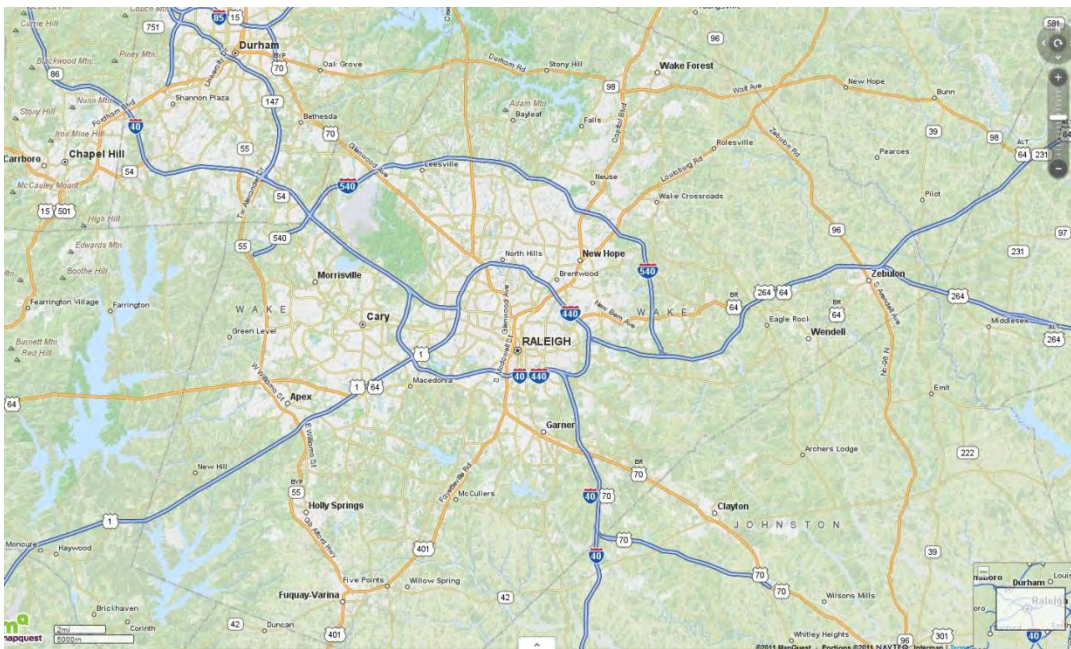


Exhibit 3 – Ultimate design of US 70/Clayton Bypass interchange with I-40 and future 540 freeway

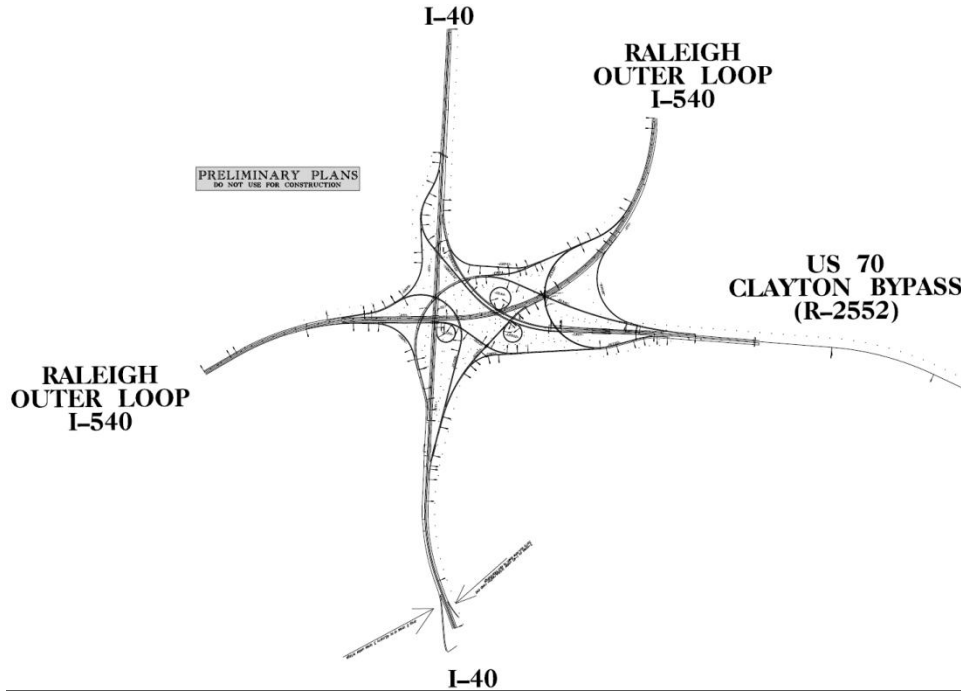


Exhibit 4 – Traffic volume projections used for design of US 70/Clayton Bypass interchange at I-40, showing connection with future 540 freeway as well as initial construction prior to 540 connection

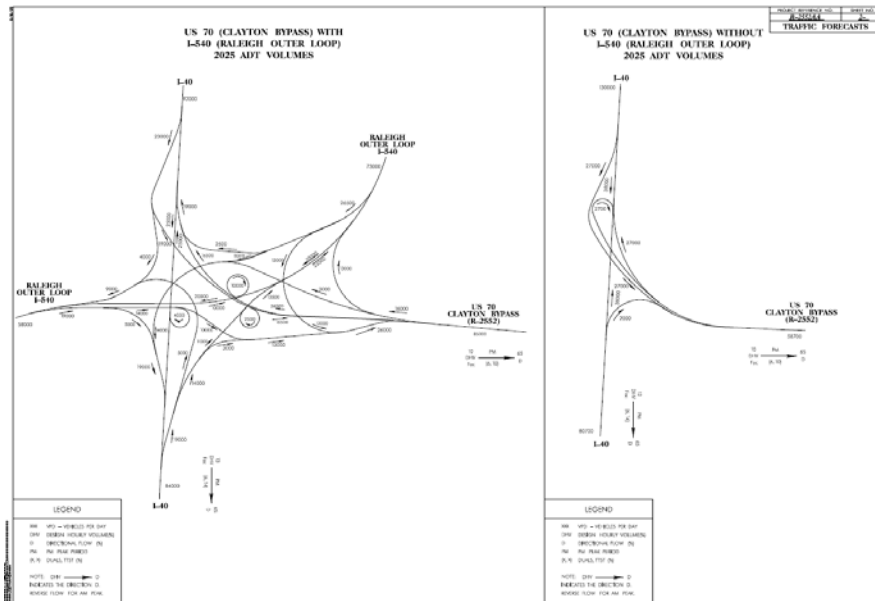


Exhibit 5 – Current 540 corridor protection envelope, showing area in vicinity of existing I-40 interchange with US 70/Clayton Bypass

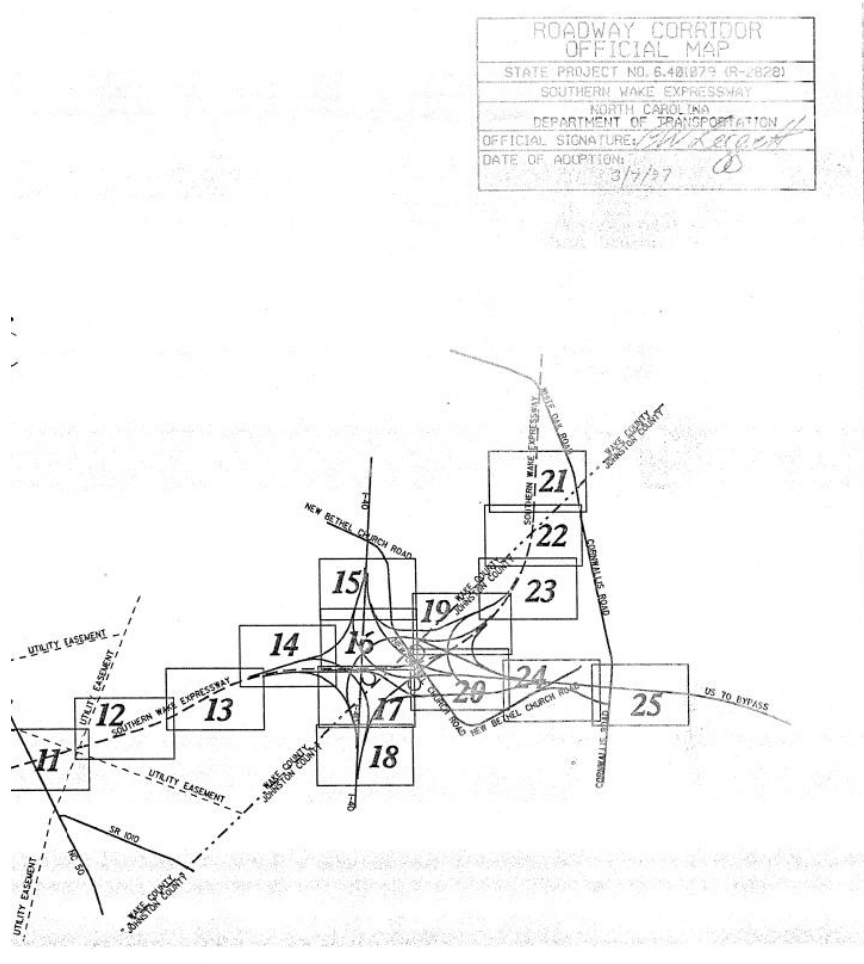
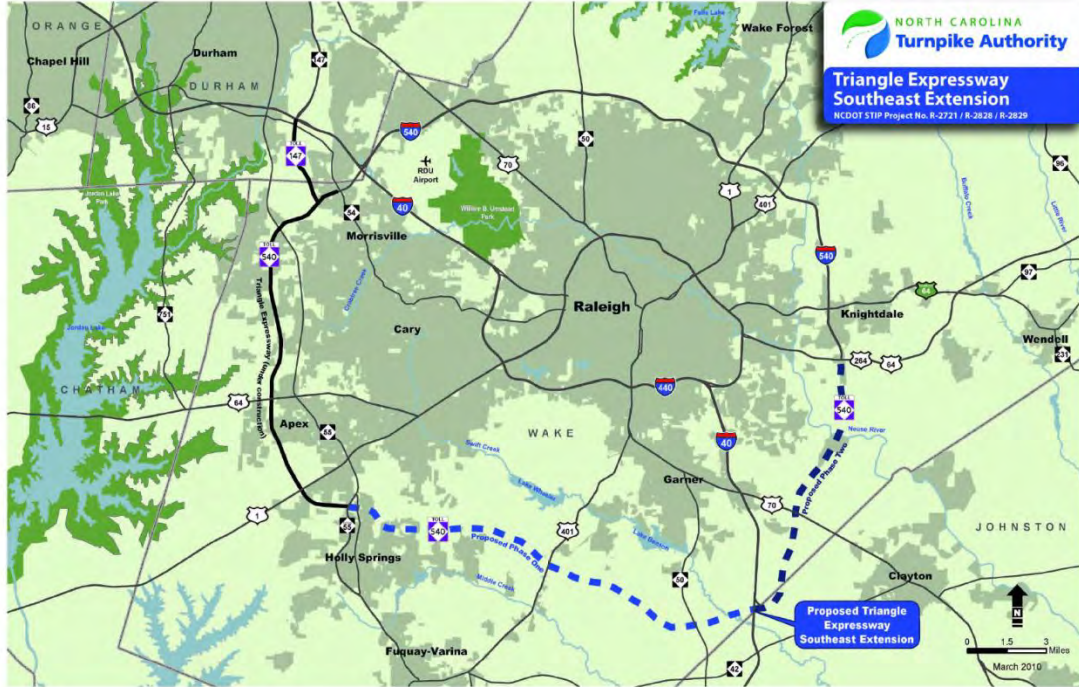


Exhibit 6 – Southeast Extension project map, dated March 2010

(Note: US 70/Clayton Bypass, opened to traffic in June 2008, is not shown on map. The existing US 70/Clayton Bypass freeway is located in the area currently occupied by the “Proposed Triangle Expressway Southeast Extension” bubble. See Exhibit 2 for more specific location information of US 70/Clayton Bypass).



SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450

601 WEST ROSEMARY STREET, SUITE 220
CHAPEL HILL, NC 27516-2356

Facsimile 919-929-9421

February 24, 2012

Ms. Jennifer Harris
NC Turnpike Authority
1 South Wilmington Street
Raleigh, NC 27601
jhharris1@ncdot.gov

Re: Southeast Extension - Alternatives Development and Analysis Report

Dear Ms. Harris:

This letter concerns the Draft Alternatives Development Report (the "Report") prepared for the Triangle Expressway, Southeast Extension project, presented to state and federal resource agencies on January 17, 2012. The letter follows our previous correspondence regarding this project of April 6, 2011, attached to this letter for your convenience. While the Report was only recently made available to us, making it impossible to comment as requested February 16, 2012, we are providing these comments as promptly as feasible.

As explained below, the Report does not serve to advance compliance with environmental study or permitting requirements, either procedurally or substantively. The North Carolina Turnpike Authority ("NCTA") remains constrained by the law enacted last session prohibiting the study of a reasonable range of alternatives, which has rendered progress on compliance with key federal requirements impossible. N.C. Gen Stat. 136-89.183(a)(2). We urge NCTA not to continue to expend taxpayer funds to plan for or study, the Southeast Extension, unless and until the legislation artificially constraining the study of alternatives is repealed.

As noted in our previous comments, both the National Environmental Policy Act ("NEPA") and the Clean Water Act ("CWA") require agencies to consider a reasonable range of alternatives to any proposed major federal action. Under NEPA, agencies are required to prepare an Environmental Impact Statement ("EIS") that rigorously explores and objectively evaluate *all* reasonable alternatives. 40 C.F.R. § 1502.14(a). Until FHWA has issued a Record of Decision ("ROD"), no action can be taken on the project that would "[l]imit the choice of reasonable alternatives." 40 C.F.R. § 1506.1(a)(2). Similarly, consideration of a reasonable range of alternatives is a fundamental prerequisite to obtaining either a 401 state water quality certification, or a 404 federal CWA permit. 15A N.C. Admin. Code 02H .0506(b)(1); 40 C.F.R. § 230.12(a)(3).

In the recently distributed Report, NCTA attempts to overcome the requirements imposed by NEPA and the CWA by eliminating the routes that the North Carolina legislature has

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forbidden from being studied, namely the “Red” and “Pink” routes, at a very early stage in the environmental review process. This is impermissible under federal law. First, the environmental analysis completed to date does nothing to substantiate the finding that the preferred “Orange” alternative is the Least Environmentally Damaging Practicable Alternative (“LEDPA”) as required by the CWA. Second, the limited analysis of the “Red” and “Pink” alternatives presented in the Report is insufficient under NEPA and fails to adequately document the environmental impacts associated with those alternatives. Further, the attempt to eliminate alternatives is made too early in the environmental review process to allow for public notice and comment, violating both NEPA and the CWA.

Selecting the LEDPA

As explained in our previous correspondence, we are concerned about the proposed elimination of all alternatives north of the “Orange” route because those alternatives would have substantially fewer environmental impacts. Rather than demonstrate a reasonable basis for eliminating these alternatives, however, the Report serves to illustrate why they should be kept for further study. For example, while the “Red” route would impact 43.7 acres of wetlands and 29,770 feet of streams, impacts from the “Orange” route will be far higher—88.1 acres of wetlands and 36,120 feet of streams. In addition, as the Report acknowledges, the “Red” route “appears to be the best option for avoiding impacts to important Dwarf wedgemussel habitat . . . and therefore has the most potential to avoid impacts to this [federally endangered] species.” Report at 5-22.

Further, by eliminating alternatives closer to the existing urbanized area, there is a greater potential for the highway to induce sprawling growth and increased traffic, leading to a range of added water quality, air quality and other environmental concerns. In the same vein, it is essential that any future study should not only analyze these less damaging new location highway routes, but also include robust consideration of functional alternatives involving upgrades to the existing highway network in the study area. The consideration of upgrade alternatives presented in the Report is insufficient to satisfy NEPA.

In response to concerns from the U.S. Army Corps of Engineers (the “Corps”) regarding its ultimate permitting responsibilities, NCTA has engaged in limited additional analysis of the “Red” and “Pink” routes. However, this additional analysis does nothing to temper the Corps’ concerns regarding the premature elimination of the less damaging alternatives. Indeed, the new, albeit limited, GIS analysis performed indicates that the preferred “Orange” route would impact almost twice as many “above average” quality wetlands than the “Red” route. Report at 5-36.

By contrast, NCTA has presented very little to support the elimination of the less damaging “Red” alternative and has certainly failed to establish that the “Orange” route is the LEDPA. The Report gives a number of justifications as to why the “Red” route should be eliminated. Some of these reasons, such as the state law mandate not to study the alternative, are irrelevant to the environmental review process. Others, such as the ability of the “Red” route to satisfy the transportation needs in the study area and the complex interplay between 4f, the CWA and the Endangered Species Act, raise issues which must be fully presented for detailed public and agency scrutiny, as envisaged by the NEPA and the CWA.

Insufficient Analysis

The additional analysis presented in the Report performed at the behest of the Corps is insufficient to satisfy NEPA and the CWA. For example, the Report illustrates that NCTA performed a GIS analysis of the *predicted* wetlands that the “Red” route would potentially impact. The analysis did not include any on-the-ground verification and has only 75-85% accuracy. Report at 5-36. This limited study is not sufficient for the purposes of NEPA and the CWA, which require a much more rigorous and accurate study of the affected environment and the potential environmental impacts of alternatives. 40 C.F.R. §§ 1502.15-16; 40 C.F.R. § 230.10.

NEPA provides that the analysis of the affected environment “shall be commensurate with the importance of the impact.” 40 C.F.R. § 1502.15. The proposed Southeast Extension is expected to impact a very large acreage of wetlands, many thousands of feet of streams, and the habitat of federally endangered species. These impacts are extremely significant, as demonstrated by the numerous concerns raised by resource agencies including the Corps and the U.S. Fish and Wildlife Service. Such significant impacts must be carefully studied with on-the-ground analysis; short-cut predictions based on GIS models with limited accuracy will not suffice, particularly when they do not even predict a lower level of impact for NCTA’s proposed LEDPA.

Public Review and Comment

A core purpose of NEPA is to provide resource agencies and the public with high quality, accurate information so they may be fully informed and engaged in the decisionmaking process. 40 C.F.R. § 1501. As part of this process, an agency pursuing a major federal action is required to fully document the impacts from a reasonable range of alternatives in a Draft EIS. 40 C.F.R. § 1502.14. These alternatives can then be reviewed and commented upon by resource agencies and the public. 40 C.F.R. § 1503.1. The lead agency is then required to consider these comments when crafting a Final EIS and when ultimately settling on a selected alternative in the final ROD. 40 C.F.R. § 1503.4. Similarly, the CWA requires that individual permit decisions be made “after notice and opportunity for public hearings.” 33 U.S.C. § 1344 (a).

In the Report, which thus far has only been made available to resource agencies and not the public, NCTA attempts to eliminate a number of alternatives before a DEIS has been published. Such early elimination renders any later public review and comment meaningless. Whatever resource agencies and the public have to say about the various alternatives will have no meaning if NCTA has already predetermined which alternative it will select. Comments concerning the “Red” and “Pink” alternatives are rendered irrelevant while NCTA is prohibited by state law from studying them further.

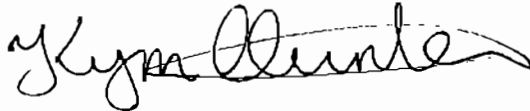
In sum, NCTA’s attempt to eliminate alternatives prior to comprehensive study via the Report is inconsistent with the requirements of both NEPA and the CWA. Rather than demonstrate why these alternatives should be eliminated, the Report underscores why, in fact, the less environmentally damaging alternatives must be kept for further study. Moreover, the Report contains insufficient analysis to make any decision regarding elimination at this early stage. Further, the attempt to eliminate alternatives at this stage hampers the public’s ability to

engage in scrutiny of the agency's process and conclusions. Until NCTA can provide the federally required analysis, it should refrain from expending any further resources to study this project as required under federal law, which has been rendered legally impossible by the legislation adopted last session.

Sincerely,



David Farren
Senior Attorney



Kym Hunter
Associate Attorney

Cc: (via e-mail and US Mail)

Eugene Conti, NCDOT
David Joyner, NCTA
Clarence Coleman, FHWA
John Sullivan, FHWA
S. Kenneth Jolly, USACE
Scott McLendon, USACE
Eric Alsmeyer, USACE
Brian Wrenn, NCDWQ
Gary Jordan, USFWS
Heinz Muller, USEPA
Chris Millitscher, USEPA
Jennifer Derby, USEPA
Travis Wilson, NCWRC
Delores Hall, OSA
Renee Gledhill-Early, HPO
Ed Johnson, CAMPO
Chris Lukasina, CAMPO

Enclosure

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450

601 WEST ROSEMARY STREET, SUITE 220
CHAPEL HILL, NC 27516-2356

Facsimile 919-929-9421

April 6, 2011

Via Email and U.S. Mail

Mr. Eugene Conti,
North Carolina Secretary of Transportation
1550 Mail Service Center
Raleigh, NC 27699-1550

Re: Southeast Extension- Elimination of the Red Route

Dear Secretary Conti:

This letter concerns the recently passed Senate Bill S165 which was signed into law on March 18, 2011. The bill amends N.C. Gen Stat. 136-89.183(a)(2), to include language to prohibit any alternatives to the proposed Southeast Extension Toll road that lie to the North of the designated "Orange" route, including the previously considered "Red" and "Pink" routes. In light of the passage of this bill, the North Carolina Turnpike Authority ("NCTA") no longer has the ability to complete the legally required review of feasible alternatives for the project under the National Environmental Policy Act ("NEPA"), for submission to, and approval by, the Federal Highway Administration, as compliant with federal law. We urge, therefore, that NCTA cease to plan for, and expend funds to study the Southeast Extension, unless and until the legislation is repealed.

Under federal law, a reasonable range of alternatives must be considered with reference to the fundamental project purpose. NEPA requires agencies to specify the "underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." 40 C.F.R. § 1502.13. Agencies are required to prepare Environmental Impact Statements ("EIS") that rigorously explore and objectively evaluate *all* reasonable alternatives that could achieve the underlying project purpose and need. 40 C.F.R. § 1502.14(a). A recent articulation of the project purpose and need for the Southeast Extension states that the project is to:

improve transportation mobility both within the project study area and on the surrounding roadway network. The project would also enhance connectivity between rapidly growing communities south and east of Raleigh and major employment centers within the Triangle Region in order to provide additional high-speed, safe and efficient regional transportation infrastructure for both local commuter trips and regional interstate and intrastate travel. Other desirable outcomes of the project include providing system linkage by completing a controlled-access, high-speed circumferential facility around the

outskirts of Raleigh and decreasing commute times for project study area residents, enhancing the livability and sustainability of the Triangle Region.¹

It is clear that the alternatives under consideration by NCTA prior to the passage of the legislation constitute reasonable means of meeting this project purpose, and, thus, cannot legally be eliminated from study under NEPA. 40 C.F.R. § 1502.14(a). Indeed, until FHWA has issued a Record of Decision, no action can be taken on the project that would “[l]imit the choice of reasonable alternatives.” 40 C.F.R. § 1506.1(a)(2). The recent attempt under state law to eliminate study alternatives does nothing to alleviate FHWA’s responsibilities under federal law, the supreme law of the land. U.S. Const. art. VI, cl. 2.

These concerns are not limited solely to the NEPA process. In a letter dated January 26, 2011, the US Army Corps of Engineers (“Corps”), in accordance with SAFETEA-LU Section 6002, identified an “Issue of Concern” regarding the proposal to eliminate the “Red” and “Pink” routes as reasonable alternatives for further study. Among other concerns, the Corps noted that the Clean Water Act requires that individual permit decisions be made “after notice and opportunity for public hearings.” 33 U.S.C. § 1344 (a). Indeed, without considering a reasonable range of alternatives, it will be impossible for the NCTA to obtain either a 401 state water quality certification, or a 404 federal Clean Water Act permit. 15A N.C. Admin. Code 02H .0506(b)(1); 40 C.F.R. § 230.12(a)(3).

Our concerns about the elimination of all alternatives north of the “Orange” route are further heightened because those alternatives would have had substantially fewer environmental impacts. For example, while the “Red” route would impact 43.7 acres of wetlands and 29,770 feet of streams, impacts from the “Orange” route will be far higher—88.1 acres of wetlands and 36,120 feet of streams. Moreover, where the “Red” route would have greatly minimized, if not eliminated entirely, impacts to the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*), the “Orange” route will have substantial impacts on that species. Furthermore, by eliminating alternatives closer to the existing urbanized area, there is a greater potential for the highway to induce sprawling growth and increased traffic, leading to a range of added water quality concerns, and potentially adversely impacting the region’s ability achieve compliance with federal air quality standards.

In fiscal terms, the eliminated routes would have greatly minimized the heavy costs of mitigation for the wetlands and stream impacts. Elimination of the shorter routes under consideration also will increase the construction and maintenance costs of the project. Indeed, it is essential that any future project study include robust consideration of functional alternatives to a new toll highway involving the existing highway network in the study area. Such alternatives would likely cost less far less than construction of a new location alternative.

Finally, we note a recent statement by a NCDOT spokesperson in the Garner News on March 29, 2011, copy attached, stating “We were never going to build the red route. It was only for study.” This characterization of the NEPA process as a study to justify foreordained decisions violates the core purpose of that statute. NEPA regulations require that an EIS be implemented to assure that it “will not be used to rationalize or justify decisions already made.” 40 C.F.R. § 1502.5. Moreover, regulations demand that EIS’s be prepared early enough to ensure that they “can serve practically as an important contribution to the decision making process.” *Id.* The clear inference of the statement to the Garner News, however, is that the agency is engaged in closed-door decision making prior to

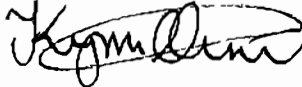
¹ Draft Preliminary Purpose and Need for the Southeast Extension, October 2010.

the analysis of environmental and other impacts of different alternatives, similar to concerns we have raised in comment letters and litigation regarding other NCTA projects.

Sincerely,



David Farren
Senior Attorney



Kym Hunter
Associate Attorney

Cc: (via e-mail and US Mail)

David Joyner, NCTA
Clarence Coleman, FHWA
John Sullivan, FHWA
S. Kenneth Jolly, US Army Corps of Engineers
Brian Wrenn, NC Department of Natural Resources, Division of Water Quality
Pete Benjamin, US Fish and Wildlife Service
Heinz Muller, USEPA, Region, IV
Chris Millitscher, USEPA, Raleigh, NC
Travis Wilson, NCWRC
Ed Johnson, Capital Area Metropolitan Planning Organization (CAMPO)
Chris Lukasina, Capital Area Metropolitan Planning Organization (CAMPO)
Senator Dan Blue
Senator Richard Stevens
Representative Deborah K. Ross
Representative Darren G. Jackson
Representative Rosa Gill
Representative Jennifer Weiss



Town of Garner

900 7th Avenue · Garner, North Carolina 27529
Phone (919) 772-4688 · Fax (919) 662-8874 · www.GarnerNC.gov

March 7, 2012

Mr. Steve DeWitt, P.E., Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Re: Triangle Expressway Southeast Extension Alternatives Development & Analysis Report

Dear Mr. DeWitt:

This letter is to advise you of the Town of Garner's position regarding the Triangle Expressway Southeast Extension Alternatives Development & Analysis Report dated January 13, 2012.

The Town of Garner would like to reiterate the statements and concerns noted in: a) our letter dated October 20, 2010 addressing our initial concerns with the devastating human impacts of the red route; b) our Resolution (2010) 2072 dated October 4, 2010 supporting use of the original protected corridor design illustrated as orange on NCTA maps; and c) our letter dated January 9, 2012 detailing the significant negative impacts on numerous public parks in the Town of Garner.

As you know, the Garner community cannot withstand the negative consequences of construction and/or study of the red route. It is destructive to our community and the prospect of study brought our growth and economic development progress to a standstill during 2010.

While a devastating transportation option such as the red route is being actively and publicly studied, no home buyer is interested in buying a house (new or resale) in the road's path and no industry, bank, or developer is willing to invest in any project in or near the route's study area.

Since the NC General Assembly passed legislation on March 18, 2011 disallowing the NCTA to study any route north of the orange corridor, the following positive economic impacts have occurred in the Town of Garner:

Residential

- Sales resumed at the Village of Aversboro, one of the hottest residential projects in Wake County.
- This community has seen 15 house closings since March 18, 2011. Value of these residential sales totals \$4,424,000.
- 7 additional home sales are currently pending (waiting to close or under construction).
- An additional 17 lots have been sold to builders by the developer for the next round of construction. This totals \$1,190,000 in value.

Commercial/Industrial

- Strategic Behavioral Health, LLC of Memphis, Tennessee announced they would build a brand new facility in Garner.
- Their investment will total approximately \$8 million. This project is currently under construction with a late 2012 opening date. The venture capital fund backing this project refused to allow the project to continue until the red route was removed.
- This new facility will employ 200 employees with an average wage of \$50,000.
- Penske Truck Leasing Service Center had broken ground just prior to announcement of the red route as a study alternative going through their brand new site. Their corporate management in Pennsylvania was devastated to learn of the possible destruction of their brand new investment in NC.
- Their facility investment totals \$3 million and 12 jobs.

Totals

The discontinuation of the study of the red route has resulted in **\$16,614,000 in new investment** in Garner and adds tremendously to our tax base. **212 permanent jobs** and numerous short-term construction jobs are created for the Research Triangle region.

All persons that have engaged in conversation about the red route agree that the red route is horribly detrimental to the Town of Garner and is not worthwhile for construction. Therefore, it seems to be extremely foolish to continue studying it. It is a waste of public dollars and creates irreparable harm to the entire Garner community; current residents, active residential developers, and industrial tenants (current and future) are severely harmed.

It is notable that CAMPO, the Capital Area Metropolitan Planning Organization, representing 18 area municipalities and 5 counties, completely agrees with and supports the Town's position and beliefs on this matter.

The Town is pleased with the Triangle Expressway Southeast Extension Alternatives Development & Analysis Report and commends the NCTA for taking the Garner community concerns to heart in its recent work.

The notable remarks about the **red route that were pleasing to the Town include the following:**

From page 5-22: "Despite these advantages (mentioned in preceding paragraph) of the red corridor alternative, it is the opinion of NCTA that the numerous disadvantages of the Red Corridor Alternative are so extensive and significant that they outweigh this advantage."

6.5 pages of text follow outlining why the red corridor alternative is a bad idea. The headings are as follows: a) does not serve traffic needs; b) disproportionate community impacts; c) impacts to Swift Creek watershed area; d) impacts to Section 4-F applicable resources (town parks); e) negative impacts to local economic base; and f) opposed by local governments and local community.

The report also discusses the 6 alternate routes proposed by Town of Garner and the one route suggested by Joe Milazzo of Regional Transportation Alliance (RTA) that follows existing I-40 & US 64.

From the Town's perspective, the bottom line is on page 5-38. The NCTA report identifies five alternatives for additional detailed study in the next phase – Draft Environmental Impact Statement (EIS). These are the options that NCTA plans to move forward with:

1. Orange to Green
2. Orange to Green to Mint Green to Green
3. Orange to Brown to Tan to Green
4. Orange to Brown to Green
5. Orange to Green to Teal to Brown to Green

The Town is extremely pleased that none of these alternatives say red or pink.

We are hopeful that our colleagues at the various state and federal resource agencies will see this matter the same way the citizens of Garner do. The human impacts are too severe to continue with any further study of the red route.

The Town understands that the federal regulatory officials continue to be concerned about wetland impacts. Of course the red route has less wetland impacts – it traverses and obliterates 13 residential neighborhoods, 4 Town parks, and our primary industrial park – Greenfield South. By definition, residential communities, active parks, and industrial areas are located on high ground outside of low-lying, swampy areas. A route through Downtown Raleigh would produce lower wetland impacts, but that is also an unwise option. It is doubtful that the original intent of NEPA was for all new highway routes to go through densely developed suburban or urban areas. If the amount of wetlands is the driving force for route selection decisions, then very few new routes will be built in less populated areas.

For the good of the Research Triangle Region, a vital and important economic engine for the State of North Carolina and the Southeastern United States, Highway 540, Raleigh's Southern Loop, needs to be constructed. Our region does not need to replicate the gridlock, traffic congestion, and associated problems of our neighbors in Atlanta and Washington, DC. Continuing to delay progress on Highway 540's designated route (orange protected corridor) from 15+ years ago is unwise and detrimental.

Thank you for your time and effort involved in preparing the recent Triangle Expressway Southeast Extension Alternatives Development & Analysis Report. Please contact me at 919-773-4407 if you have any questions or need additional information.

Sincerely,



Hardin Watkins
Town Manager

APPENDIX K
Agency Review of September 2013 Draft Alternatives
Development and Analysis Report –
Comments and Agency Meeting Summary

Maseman, Kristin

From: Maseman, Kristin
Sent: Thursday, January 09, 2014 1:03 PM
To: Maseman, Kristin
Subject: FW: Complete 540 - Draft Alternatives Report Comments

From: Ridings, Rob [<mailto:rob.ridings@ncdenr.gov>]
Sent: Monday, October 21, 2013 1:34 PM
To: Kiersten Bass
Subject: RE: Complete 540 - Draft Alternatives Report Comments

Kiersten,

I have no comments on the Draft Report. I think when we narrow down the number of alternatives and do thorough reviews of the potential impacts of each, and then move to pick a LEDPA, DWR will have a good deal to say. But everything I saw on the Draft Alternatives Report looked pretty good to me so far.

Thanks,
Rob Ridings
DWR

e this communication, please delete this message and any attachments. Thank you.

This e-mail and any files transmitted with it are confidential and are intended solely for the use of the individual or entity to whom they are addressed. If you are NOT the intended recipient and receive this communication, please delete this message and any attachments. Thank you.



North Carolina Department of Cultural Resources
State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

October 10, 2013

Kristin Maseman
H. W. Lochner, Inc.
2840 Plaza Place, Suite 202
Raleigh, NC 27612

Re: Revised Draft Alternatives Development and Analysis Report, Triangle Expressway Southeast Extension, R-2721, R-2728, R-2729, Wake and Johnston Counties, CH 98-0457

Dear Ms. Maseman:

Thank you for your letter of September 5, 2013, transmitting the Revised Draft Alternatives Development and Analysis Report for the above cited project. We have reviewed the document and offer the following comments.

Page 5-3, under the section entitled "Historic Resources Criteria" discusses only historic architectural resources and states that an architectural survey will be conducted after selection of the Detailed Study Alternatives. This section should also include a discussion of archaeological resources and a commitment for an archaeological survey after selection of the project corridor.

Overall, the document is well-written and comprehensive. We concur with your selected alternatives for further study.

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, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or renee.gledhill-earley@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona M. Bartos

Maseman, Kristin

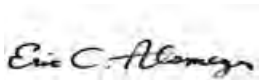
From: Alsmeyer, Eric C SAW <Eric.C.Alsmeier@usace.army.mil>
Sent: Monday, November 04, 2013 4:01 PM
To: Kiersten Bass; 'militscher.chris@epamail.epa.gov'; Wicker, Henry M JR SAW; 'gary_jordan@fws.gov'; 'rob.ridings@ncdenr.gov'; 'travis.wilson@ncwildlife.org'; 'amy.simes@ncdenr.gov'; 'Gledhill-earley, Renee (renee.gledhill-earley@ncdcr.gov)'; 'ed.johnson@campo-nc.us'; 'thouser@ncdot.gov'; 'wbowman@ncdot.gov'; 'tbford@ncdot.gov'; 'driffey@ncdot.gov'; 'mfurr@ncdot.gov'; 'Mckee, James S (smckee@ncdot.gov)'; 'dproper@ncdot.gov'; 'gasmith@ncdot.gov'; 'Reams, Edwin D (ereams@ncdot.gov)'; 'Pleasant, Kyle A (kpleasant@ncdot.gov)'; 'Memory, John R (rmemory@ncdot.gov)'; 'joe@letsgetmoving.org' (joe@letsgetmoving.org)'; 'Johnson, Benjetta L (benjettajohnson@ncdot.gov)'; 'Lineberger, Nicholas C (nclineberger@ncdot.gov)'; 'Desai, Rupal P (rpdesai@ncdot.gov)'; 'Snipes, Adam J (ajsnipes@ncdot.gov)'; 'alyudmi@ncdot.gov'; 'ancozzarelli@ncdot.gov'; 'Staley, Mark K (mstaley@ncdot.gov)'
Cc: 'Clarence Coleman'; 'George Hoops'; 'Jennifer Harris'; 'emidkiff@ncdot.gov'; Bruce, Roy; Maseman, Kristin; Eason, Brian; Schlotter, Jeff; 'jstudt@dawsonassociates.com'; 'fskaer@dawsonassociates.com'
Subject: RE: Complete 540 - Draft Alternatives Report Comments (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Kiersten: The Corps has no comments on the latest Draft Alternatives Report at this time, and is satisfied that the alternatives proposed for further study meet the Corps' requirements under Section 404 and NEPA.

Please reply or call if you have any questions or if I may serve you in any other way.

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 Customer Satisfaction Survey located at our website at <http://per2.nwp.usace.army.mil/survey.html> to complete the survey online (Paper copies available upon request).



Eric Alsmeyer
Project Manager
Raleigh Regulatory Field Office
US Army Corps of Engineers, Wilmington District
3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587
Tel: (919) 554-4884, x23
Fax: (919) 562-0421
Regulatory Homepage: <http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram.aspx>
(If you need information that is not yet available on our new website, please let me know)

From: Kiersten Bass [mailto:kbass@hntb.com]
Sent: Monday, November 04, 2013 1:31 PM
To: 'militscher.chris@epamail.epa.gov'; Alsmeyer, Eric C SAW; Wicker, Henry M JR SAW; 'gary_jordan@fws.gov'; 'rob.ridings@ncdenr.gov'; 'travis.wilson@ncwildlife.org'; 'amy.simes@ncdenr.gov'; 'Gledhill-earley, Renee (renee.gledhill-



Interagency Project Meeting

MEETING MINUTES FINAL

Date: December 12, 2013
11:45 a.m. – 12:45 p.m.
NCDOT Century Center – Structure Design Conference Room C

Project: STIP R-2721, R-2828, and R-2829 – Complete 540, Triangle Expressway Southeast Extension

Attendees:

George Hoops, FHWA	Wally Bowman, NCDOT – Division 5
Clarence Coleman, FHWA	Nick Lineberger, NCDOT – TMSD
Christopher Militscher, USEPA (via telephone)	Tris Ford, NCDOT – HES
Eric Alsmeyer, USACE	Deanna Riffey, NCDOT – NES
Jean Gibby, USACE	Matt Lauffer, NCDOT - Hydraulics
Thomas Brown, USACE	Kyle Pleasant, NCDOT – Utilities
Gary Jordan, USFWS	Donald Proper, NCDOT – Utilities
Rob Ridings, NCDWR	Mark Staley, NCDOT – REU
Travis Wilson, NCWRC	Kiersten Bass, HNTB
Amy Simes, NCDENR	Fred Skaer, Dawson & Associates (via telephone)
Renee Gledhill-Early, SHPO (via telephone)	John Studt, Dawson & Associates (via telephone)
Dolores Hall, NCOSA (via telephone)	Roy Bruce, Lochner
Ed Johnson, CAMPO (via telephone)	Kristin Maseman, Lochner
Eric Midkiff, NCDOT – PDEA	Jeff Schlotter, Lochner
Jennifer Harris, NCDOT – PDEA	Michael Wood, Catena Group
Richard Hancock, NCDOT - PDEA	Tim Savidge, Catena Group
Tony Houser, NCDOT – Roadway Design Unit	Nancy Scott, Catena Group
Tim Little, NCDOT – Division 4	

Presentation Materials:

- Agenda
- Final Interagency Project Meeting Minutes – September 19, 2013
- Handout 16 – Public Meetings - Summary and Comment Analysis
- Handout 17 – Revised Draft Alternatives Development and Analysis Report
- Handout 18 – Detailed Study Alternatives
- Handout 19 – Section 6002 Coordination Plan Update
- Presentation

Purpose:

Present project status update and summary of public comments; discuss revised Draft Alternatives Development and Analysis Report; discuss recommended Detailed Study Alternatives.

General Discussion:

The following information was discussed at the meeting:

- **Project Status Update:** Lochner provided an update on project activities that have occurred since the Interagency Meeting in September 2013, when the revised Draft Alternatives Development Analysis and Report and the recommended Detailed Study Alternatives (DSAs) for

the project were discussed. Agencies were then asked to submit comments about the revised report and the recommended DSAs. The CAMPO Working Group met on October 3 to discuss the recommended DSAs. Three public meetings were held on October 14, 15, and 16 to present the recommended DSAs and to solicit public comments. To the extent possible, work including some field investigations and preliminary design, has continued on the project during this period in order to expedite the overall project schedule.

- **Public Meetings – Summary and Comment Analysis (Handout 16):** The three public meetings in October were very well attended and there has been extensive public comment about the recommended DSAs. The input from these meetings was combined with input received from the public in late 2010 and early 2011 on preliminary alternatives. To date, public comments about project alternatives reveal strong support for the project and the Orange Corridor, and strong opposition to the Red, Purple, Blue, and Lilac Corridors. Several local governments have also passed resolutions supporting the Orange Corridor and opposing others.
- **Revised Draft Alternatives Development and Analysis Report (Handout 17):** Four agencies responded to NCDOT's request for comments on the revised Draft Alternatives Development and Analysis Report; three agencies did not submit responses. The agency comments either explicitly or implicitly support proceeding with the recommended DSAs. None of the comments request eliminating, adding, or modifying any alternatives.
- **Detailed Study Alternatives (Handout 18):** Lochner reviewed the ten color-coded corridors that are the building blocks for the DSAs. These ten color-coded corridors can be combined to form 17 unique end-to-end routes that make up the DSAs. Based on the preliminary data available for the project, the previously recommended DSAs remain as viable feasible alternatives that appear to have sufficient merit to warrant further evaluation and study as part of the Draft Environmental Impact Statement. Therefore, all 17 of the previously recommended DSAs will be carried forward in the environmental study. Should additional project information become available as studies are completed that substantially alters the merits of any alternative, this decision could be reevaluated at that time.
- **Section 6002 Coordination Plan Update (Handout 19):** Lochner reviewed changes that have been made to the Section 6002 Coordination Plan for this project since its previous January 2011 version. Changes include an update to the project schedule and primary agency contacts.
- **Update on Dwarf Wedgemussel Studies:** The Catena Group reviewed the work that has been completed to date on the Dwarf Wedgemussel (DWM) studies requested by USFWS. This work is being documented in a technical report that will be submitted to NCDOT in February or March of 2014. The studies have included a review of existing conservation measures established for DWM as part of other projects in the Swift Creek watershed, characterization of the Swift Creek watershed with respect to DWM habitat, and an assessment of historical trends and current viability of the species in Swift Creek.
- **Discussion:**

HPO reminded the group that their response letter to the revised Draft Alternatives Development and Analysis Report stated that the report did not include any mention of archaeological studies for the DSAs. NCDOT will indicate in the final report that the required archaeological studies will be completed and documented in the Draft Environmental Impact Statement.

USEPA asked for clarification on why the “bulbouts” at different interchanges on the map of DSAs are different sizes. NCDOT explained that the bulbout areas correspond to the wider study corridor around the interchange areas and vary depending on the roadway geometry, existing facilities, and other constraints at each interchange area. The bulbout areas do reflect the relative magnitude of each interchange area. In particular, the size of the interchange areas at 540, I-40, and the US 70 Bypass were questioned since they are substantially larger than other

interchanges. The geometry of ramp movements in a freeway to freeway high speed interchange require more land area than a typical interchange. At 540, I-40, and US 70 Bypass there are three freeways converging at a single interchange.

NCDOT Utilities inquired about the basis of the preliminary wetland impacts along the Purple and Blue Corridors. These impacts are based on National Wetlands Inventory mapping data and the 300 foot preliminary right of way within the larger study corridor.

The NCDOT suggested that the agencies would not require any additional time (as described in Section 8.5 of the Section 6002 Coordination Plan) to review the Draft Alternatives Development and Analysis Report and the recommended DSAs in light of the public and local government comments made since the October public meetings. The reason provided by NCDOT included that the public comments remain consistent with those previously provided and therefore would not cause the need to make additional adjustments to the DADAR. USACE noted agreement that no additional review would be necessary based on the information presented during this meeting and no other agencies objected.

No agencies raised any objections to proceeding with the 17 end-to-end alternatives as DSAs, and no agencies asked for any additional alternatives to be considered.

Based on today's discussion, past Issues of Concern (per the Section 6002 Coordination Plan) have been resolved and that there are no outstanding issues regarding the project purpose and need, range of alternatives, alternatives screening, or DSAs. Additionally, no Issues of Concern relative to these four areas of the study were raised at the meeting.

USEPA informed the group that there is a new Executive Order (EO) pertaining to the impact of federal projects on children's health, and suggested that NCDOT seek guidance from FHWA regarding the need to address the EO in the Draft Environmental Impact Statement (EIS).

Previous Action Items:

- Agency review comments on the September 2013 Draft Alternatives Development and Analysis Report due to NCDOT by October 21, 2013 (revised to November 4, 2013). (*Completed*)
- NCDOT will provide a status update on mussel surveys at a future interagency meeting. (*Completed*)
- Impact tables to be adjusted to reflect no historic resource impacts and note that Section 4(f) impacts that are listed are for parks/recreational areas. (*Completed*)
- Add impacts to ORW and HQW to tables, if appropriate. There are none of these resources in the study area. (*Completed*)

New Action Items:

- NCDOT will indicate in the final Alternatives Development Analysis and Report that the required archaeological studies will be completed and documented in the Draft Environmental Impact Statement.
- Lochner will investigate the requirements of the new EO pertaining to the impact of federal projects on children's health and work with NCDOT and FHWA regarding the appropriate method for addressing it.

Next Steps:

- Public announcement of Detailed Study Alternatives
- CAMPO Working Group meeting – January 9, 2014
- Complete technical base studies on DSAs
- Prepare Draft Environmental Impact Statement



Interagency Project Meeting

SIGN-IN SHEET

Complete 540 - Triangle Expressway Southeast Extension – December 12, 2013 – 11:30 a.m.

NAME	REPRESENTING
DONALD PROPER	NCDOT - UTILITIES UNIT - ENGINEERING
Kyle Pleasant	NCDOT - Utilities Unit - Coordination
JEFF SCHLOTTER	H.W. LOCKNER, INC
Tim Little	NCDOT - Division Engineer (P.W.A)
Nancy Scott	Catena Group
Thomas Brown	USACE
AMY SIMES	DENR
TRIS FORD	NCDOT - HES-CS
Deanna Riffey	NCDOT PDEA - NES
ROB RIDINGS	NC Div. Water Resources
Tim Savidge	The Catena Group INC.

NAME	REPRESENTING
Gary Jordan	USFWS
Terris Wilson	NCWRC
KIERSTEN BASS	HNTB
Jennifer Harris	NC DOT - PDEA
Eric Midkiff	NC DOT - PDEA
Kristin Maseman	Lochner
Jean Gibby	USACE
Eric Alsmeyer	USACE
George Hoops	FHWA
CRUCIVE COLEMAN	FHWA
Mark Staley	NC DOT - REU
Matt Lauther	NC DOT - HYDRAULICS
NICK LINEBERGER	NC DOT - Congestion Management
Tony Houser	NC DOT - Roadway
Mike Stanley	NC DOT - STIP
WALLY BOWMAN	NC DOT - DIV 5
Richard Hancock	NC DOT - PDEA
MICHAEL WOOD	CATAWA GROUP

NAME	REPRESENTING
MICHAEL WOOD	CATENA GROUP
BOB BRUCE	LOCHNER
B	