HIGH POINT AIRPORT CONNECTOR

FEASIBILITY STUDY

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City of High Point, North Carolina

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November 2011

FEASIBILITY STUDY

High Point Airport Connector

Guilford County

NCDOT Division 7

Prepared by:

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For:

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November 2011

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2/23/12
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1. Introduction and Background

1.1. Introduction

The City of High Point, in coordination with the North Carolina Department of Transportation (NCDOT), has identified the need to improve mobility, increase capacity and accessibility between northeastern Davidson County, eastern Forsyth County, western Guilford County, and the Piedmont Triad International Airport. This project is known as the High Point Airport Connector project, and is identified in NCDOT's State Transportation Improvement Program (STIP) as STIP Project FS-0707B. NCDOT's Draft 2012-2018 STIP lists the status of STIP Project FS-0707B as a Feasibility Study in Progress by Others. Additionally, this project is funded in NCDOT's 2011-2015 Work Program. The High Point Airport Connector project is identified as a 2025 Horizon Year project in the 2035 High Point Urban Area Metropolitan Planning Organization (MPO) 2035 Long Range Transportation Plan (LRTP).

The purpose of this report is to identify and assess feasible long-term transportation improvements that meet the purpose and need of the project, and to develop planning-level cost estimates for the City of High Point and NCDOT in programming future transportation needs. The Sandy Ridge Road (SR 1850) Widening and Extension Feasibility Study (FS-0707A) also assessed the transportation needs of the study area north of I-40. The study, conducted by the City of Greensboro, looked at an interim solution for transportation improvements north of I-40 in the area of the Market Street interchange.

This study is the first step in the planning process for this project and is not the product of detailed environmental or design analyses.

1.2. Purpose and Need

The general purpose and need of the High Point Airport Connector project is to:

- Enhance mobility and increase capacity between northeastern Davidson County, eastern Forsyth County, western Guilford County, and the Piedmont Triad International Airport. Piedmont Triad International Airport employs approximately 4,000 people, and served over 1.7 million passengers in 2009. The airport recently completed the construction of a new runway and a FedEx mid-Atlantic hub, a $500 million project. According to the airport's website, the FedEx facility is 600,000 square-feet. FedEx expects to hire 1,500 employees to sort 24,000 packages per hour and serve 63 airplanes per day.

- Improve system linkage, access, and connectivity by providing a north-south thoroughfare that will provide an alternate and more direct route to the Piedmont Triad International Airport and area(s) north of I-40. This will also enhance transportation connectivity between US 311 (Future I-74), I-40, and Future I-73.

- Provide transportation infrastructure necessary to support expected land uses, and to accommodate development pressures and subsequent growth along the project corridor and in northeast Davidson County, eastern Forsyth County, and western Guilford County. These areas are currently experiencing rapid growth. This existing growth trend has been supported and further enhanced through the construction of

several major non-transportation projects, including the FedEx Mid-Atlantic Hub at the Piedmont Triad International Airport (PTIA), the Kernersville Medical Center on Macy Grove Road just north of I-40, and the Triad Business Park located north of Business 40.

1.3. Study Area

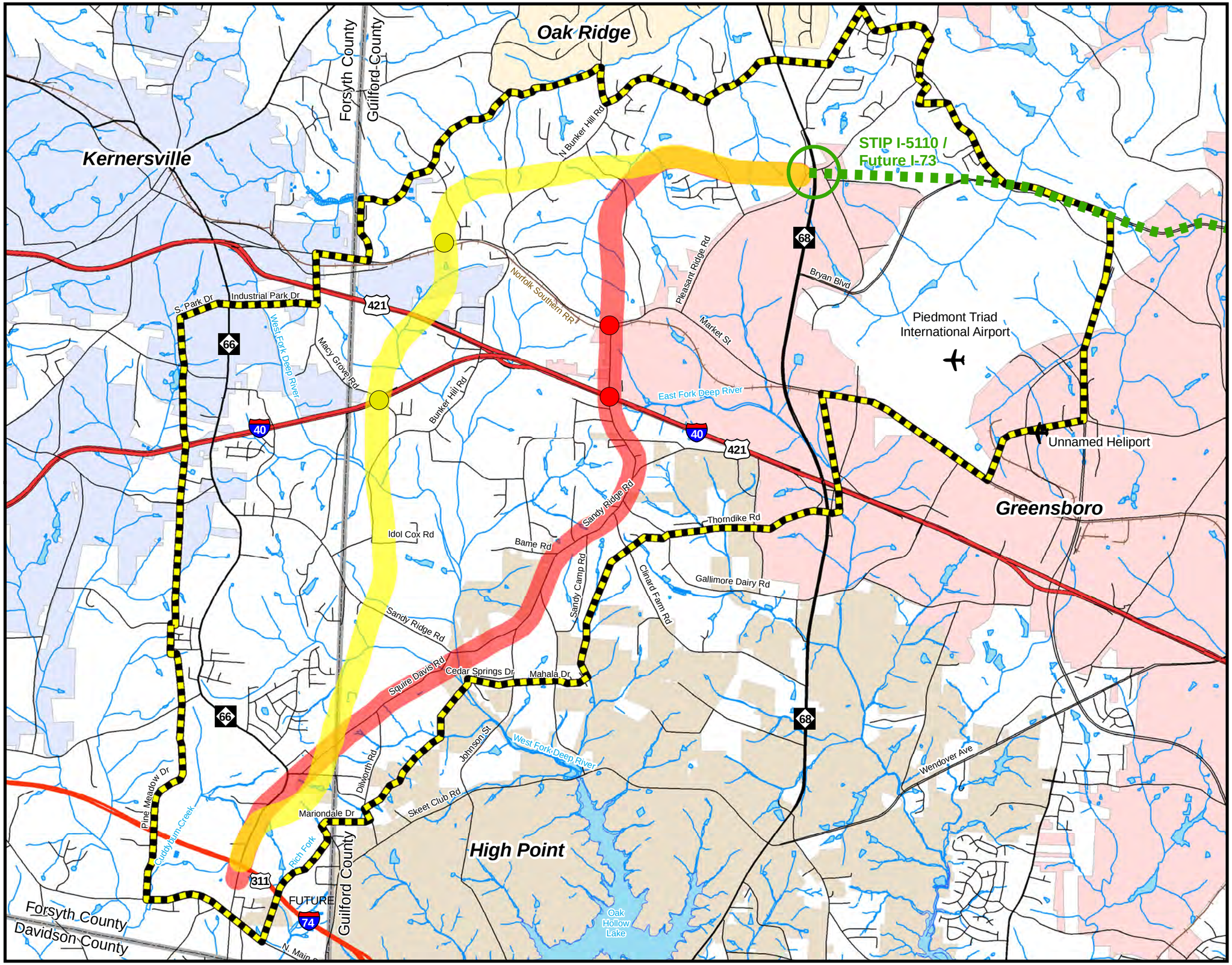
Figure 1 shows the boundaries and general location of the study area. The project study area encompasses the transportation alternatives considered in this feasibility study to address the transportation need identified in **Section 1.2**. The study area included portions of Forsyth and Guilford counties and within the jurisdictions of the cities of High Point and Greensboro.

In general, the project study area is bounded to the west by Pine Meadow Drive, NC 66; to the north by South Park Drive, Industrial Park Drive, Macy Grove Road, East Mountain Street/West Market Street, Pratt Road, Reedy Creek, Bunker Hill Road, Ballard Road, Leabourne Road, Edgefield Road, Alcorn Road, Pleasant Ridge Road, Old Oak Ridge Road, Joseph M. Bryan Boulevard; to the east by Interstate 73 / Future Interstate 840, West Friendly Avenue, Market Street, NC 68; to the south by Thorndike Road, Sandy Camp Road, Mahala Drive, Cedar Springs Drive, Meadow Creek Subdivision, an unnamed tributary to Oak Hollow Lake, Dilworth Road, Mariondale Drive, Rich Fork; and North Main Street / High Point Road.

In order to analyze population characteristics, a Demographic Study Area was identified for the project. The Demographic Study Area includes these US Census Bureau Block Groups from the 2000 Census, which encompass the project study area:

- Census Tract 32.02, Block Group 2
- Census Tract 33.05, Block Groups 1, 2 and 3
- Census Tract 33.06, Block Groups 2 and 3
- Census Tract 160.04, Block Group 1
- Census Tract 160.03, Block Group 1
- Census Tract 162.01, Block Groups 1 and 2
- Census Tract 162.02, Block Group 1

Based on US Census data (see **Table 1**), the Block Groups encompassing the project study area (Demographic Study Area) experienced an annual population growth rate of 5.14% between 1990 and 2000. This annual growth rate was approximately two to three times higher than the annual growth rates in Davidson County (1.52%), Forsyth County (1.42%), and Guilford County (1.94%) during the same time period.



Legend

- Study Area
- New Location Alt. Study Corridor
- Proposed Interchange - New Location Alt.
- Hybrid Alt. Study Corridor
- Proposed Interchange - Hybrid Alt.
- Interstate
- US Highway
- NC Highway
- State Road
- Railroad
- Stream/Creek
- Water Body
- County Boundary
- Greensboro
- High Point
- Kernersville
- Oak Ridge
- Airport

N W E S

0 0.5 1 2 Miles

HNTB

Figure 1

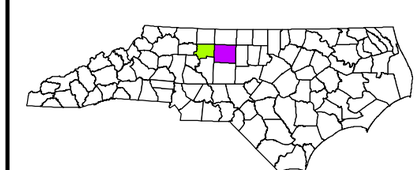
Project Study Area

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

March 2011

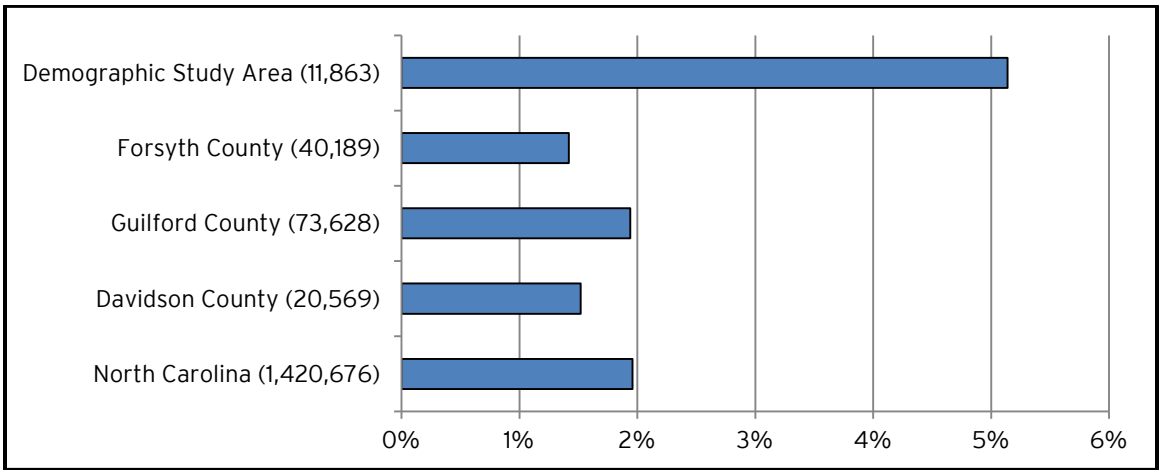
MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://www.high-point.net
Guilford County: http://www.co.guilford.nc.us
Forsyth County: http://www.co.forsyth.nc.us



- North Carolina Counties
- Guilford County
- Forsyth County

Table 1 – Annual Population Growth Rate, 1990-2000



Source: US Census Bureau, Summary File 1 – Table P1 (2000)
US Census Bureau, Summary Files 1 – Table P001 (1990)

Based on the population projections provided by the City of High Point's Planning Department, the area bounded by Skeet Club Road and US 311 to the south, the Forsyth/Guilford County line to the west, I-40 to the north, and NC 68 to the east, was projected to experience an annual population growth rate of 8.7% between 2000 and 2010.

1.4. Study Process

The purpose of this report is to assess feasible transportation improvements that satisfy the purpose and need of the project, and to develop planning-level cost estimates for use by the City of High Point and NCDOT in programming future transportation needs.

This study identified four initial project concepts, and analyzed each initial concept using a multi-tier screening process. The Tier 1 Screening was qualitative to identify which of the initial project concepts could be developed to meet the purpose and need of the project discussed in **Section 1.2**. Concepts not meeting the purpose and need were removed from further consideration. Conceptual designs were prepared for each initial project concept carried forward from the Tier 1 Qualitative Screening. The conceptual designs were developed using engineering design constraints and the locations of sensitive resources as identified through field reconnaissance and existing Geographic Information Systems (GIS) data. Tier 1 concepts carried forward underwent a more quantitative screening. Tier 2 Screening involved developing an opinion of probable construction cost for each project concept, and traffic operations / accessibility and anticipated right-of-way impacts to environmental and community features. This multi-tier screening process will serve as the basis for determining which of the four initial project concepts is the most feasible.

1.5. Existing Conditions

<u>Study Area Existing Roadways</u>
I-40 is the primary freeway corridor for regional connectivity between Greensboro, High Point, and Winston Salem in the Triad. I-40 varies from a four-lane to a ten-lane freeway in the project study area. The posted speed limit is 65 miles per hour (mph) through the

project study area with a 2009 NCDOT AADT of 105,000 vehicles per day (vpd) just west of Sandy Ridge Road.

US 311 is a four-lane median divided north-south highway with a posted speed limit of 60 mph. US 311 is designated as a principal arterial in the North Carolina functional classification system and is planned for conversion to a future Interstate facility (I-74). US 311 has a 2009 NCDOT AADT of 24,000 vpd.

NC 66 is primarily an undivided two-lane facility within the project study area with a 45 mph posted speed limit. NC 66 is a north-south minor arterial extending from US 311 Bypass, just west of the City of High Point, to downtown Kernersville in Forsyth County with a 2009 NCDOT AADT of 9,300 vpd.

Johnson Street is a two-lane minor arterial with a posted speed limit of 55 mph. Johnson Street runs north-south though the City of High Point from downtown to Sandy Ridge Road and has a 2009 NCDOT AADT of 8,300 vpd near Sandy Ridge Road.

West Market Street is an east-west minor arterial that runs between Greensboro and Kernersville. Within the project study area, West Market Street is primarily a two-lane undivided facility with posted speed limits of 35 mph and 45 mph and a 2009 NCDOT AADT of 13,000 vpd near Sandy Ridge Road.

Sandy Ridge Road is primarily an undivided two-lane facility within the project study area, with posted speed limits ranging from 35 mph to 55 mph. Sandy Ridge Road is a minor arterial that runs north-south and east-west through the project study area from Market Street to NC 66 with a 2009 NCDOT AADT of 16,000 vpd near I-40.

Squire Davis Road is a north-south minor arterial, which runs from Payne Road to Sandy Ridge Road. Squire Davis Road is currently an undivided two-lane facility with a posted speed limit of 45 miles per hour and a 2009 NCDOT AADT of 1,200 vpd.

Existing Land Uses

The existing land use south of I-40 and within the project study area consists primarily of single-family residential, agricultural, and open space. In general, more intense land uses in the form of commercial, office space, warehouses, distribution centers, and light industrial developments can be found south of I-40 between Sandy Ridge Road and NC 68. Similar land use patterns can also be found on the north side of I-40 within the study area. North of West Market Street, existing land use transitions from industrial/commercial to rural residential, agriculture, and open space.

1.6. Transportation and Land Use Plans

The 2009-2015 NCDOT State Transportation Improvement Program (STIP) and the Draft 2012-2018 NCDOT STIP indicate that STIP Project FS-0707B is the proposed High Point North-South Connector freeway facility on new location from US 311 (Future I-74) to NC 68. NCDOT's Draft 2012-2018 STIP lists the status of STIP Project FS-0707B as a Feasibility Study in Progress by Others. Additionally, this project is funded in NCDOT's 2011-2015 Work Program.

The 2009-2015 NCDOT STIP and the Draft 2012-2018 NCDOT STIP indicate that STIP Project FS-0707A is a proposed new route from Sandy Ridge Road (SR 1850) at West Market Street (SR 1008) to NC 68 near Piedmont Triad International Airport. NCDOT's Draft 2012-2018 STIP lists the status of STIP Project FS-0707A as a Feasibility Study in Progress by Others. This study is funded in NCDOT's 2011-2015 Work Program.

The High Point Airport Connector project study area encompasses the planning jurisdictions of three Metropolitan Planning Organizations (MPOs): High Point Urban Area MPO (HPMPO), Greensboro Urban Area MPO (GUAMPO), and Winston-Salem Urban Area MPO (WSMPO). Additionally, the proposed termini for the project includes a southern terminus at NC 66/US 311 interchange and a northern terminus at NC 68/Future I-73 Connector interchange. Included below is a summary of the roadway projects contained within each adopted MPO long range transportation plan (LRTP) that are planned to increase mobility and capacity between the proposed project termini.

HPMPO 2035 LRTP

An objective of the HPMPO 2035 LRTP is to "improve access to the Piedmont Triad International Airport." The High Point Airport Connector project is included in the HPMPO 2035 LRTP as a 2025 Horizon Year project; however, the project is referred to as the "North-South Connector." The LRTP place holder for this project is a four-lane freeway/expressway on new location between US 311 Bypass and I-40. The LRTP planned projects to widen existing north-south routes within the project study area from 2-lane facilities to 4-lane divided facilities: Johnson Street/Sandy Ridge Road Widening and Squire Davis Road Widening. The widening of Johnson Street/Sandy Ridge Road between Skeet Club Road and I-40 is designated as a 2015 Horizon Year project. The widening of Squire Davis Road between Ridge Road and the Airport Connector is designated as a 2025 Horizon Year project.

GUAMPO 2035 LRTP

The GUAMPO 2035 LRTP also includes a project designated as the Airport Connector. This 2035 Horizon Year project would provide an east-west connection between the Forsyth/Guilford County Line and NC 68 via a 4-lane interstate facility. The GUAMPO 2035 LRTP also refers to this project as the I-73/I-74 Connector and STIP Project I-4924.

The GUAMPO 2035 LRTP includes the widening of Sandy Ridge Road between I-40 and West Market Street as a 2025 Horizon Year project. This project is planned to widen Sandy Ridge Road from a 2-lane facility to a 4-lane divided facility. The GUAMPO 2035 LRTP also includes a planned project to extend Sandy Ridge Road as a 4-lane divided facility from West Market Street to the I-73/I-74 Connector/I-40 Connector interchange. This project is known as the Sandy Ridge Road Extension and is designated as a 2025 Horizon Year project. The widening and extension of Sandy Ridge Road is also described above as STIP Project FS-0707A.

The GUAMPO 2035 LRTP includes the I-40 Connector as new location interstate facility between I-40 and the I-73/I-74 Connector. The planned cross-section for this future facility is a 4 to 6-lane freeway. The LRTP designates this project as a 2035 Horizon Year project. The I-40 Connector is also included in the 2004 Strategic Highway Corridor Vision Plan developed by NCDOT.

Winston-Salem MPO 2035 LRTP

The Winston-Salem MPO 2035 LRTP also includes the I-73/I-74 Connector project between the Forsyth County/Guilford County line to the Winston-Salem Northern Beltway/West Mountain Street Interchange. The I-73/I-74 Connector is included in the NCDOT 2009-2015 STIP as STIP Project I-4924. The I-73/I-74 Connector is also included in the 2004 Strategic Highway Corridor Vision Plan developed and adopted by NCDOT.

Widening of I-40 between US 311 and the Forsyth/Guilford County line is included in the WSMPO 2035 LRTP as a 2025 Horizon Year project. The plan indicates I-40 will be widened from a 4-lane freeway to a 6-lane freeway.

The WSMPO 2035 LRTP contains no projects to improve NC 66, but includes a Regional Airport Connector Project (I-73 / I-74 Connector), which is a proposed new east-west 4-lane freeway from Northern Beltway/West Mountain Street to the Guilford County line. The WSMPO Comprehensive Transportation Plan identifies NC 66 as a boulevard/other major thoroughfare needing improvement.

Piedmont Triad Airport Master Plan Update

The Piedmont Triad Airport Authority is conducting an Airport Master Plan Update for the Piedmont Triad International Airport (PTIA) which will guide airport development for the next thirty years. The Draft Airport Master Plan Update was released in May 2010. According to the draft plan, PTIA's core market service area encompasses twelve North Carolina counties and six southern Virginia counties. The core airport service area has a population of approximately 1.8 million, and additional catchment areas in North Carolina and Virginia have a population of approximately 1.4 million. The Master Plan indicates that Airport Parkway, Bryan Boulevard, Old Oak Ridge Road and the Greensboro Western Urban Loop have each been constructed or realigned to accommodate the construction of Runway 5R/23L and the FedEx Mid-Atlantic Sort Hub. Based on these improvements, the Master Plan concludes that the existing and currently programmed surface transportation and supporting infrastructure are adequate to satisfy existing and anticipated future demand levels through the next 20-year planning period. The Phase 3 of the airport development program, which has a 30 to 50-year planning period, calls for realignment of parts of NC 68 westward to accommodate a parallel runway. As part of the realignment of NC 68, the Master Plan proposes an interchange at Market Street just west of the existing NC 68/Market Street interchange as well as at Market Street just west of Pleasant Ridge Road. Access to the airport from the entire region would be facilitated by a new interchange northwest of the airfield, which would be anchored by the new Interstate 73.

Northwest Area Plan

The Northwest Area Plan was prepared by the City of High Point, and was adopted by the High Point City Council on January 18, 2011. The Northwest Area Plan's study area covers portions of the study area for this Feasibility Study, which is generally west and northwest of Kendale, Sandy Ridge and Skeet Club roads and south of I-40, including the southeast corner of Forsyth County. A number of initiatives and events have great potential to affect the northwest part of High Point's planning area, including the FedEx air cargo hub and the associated Part 150 Study, the Heart of the Triad Plan and the revised High Point/Kernersville Annexation Agreement, with its attendant extension of a major sewer outfall from High Point to Kernersville. The purpose of the Northwest Area Plan is to assess the development potential of an area where High Point, Kernersville, and Greensboro are growing together. According to the plan, every land use study that has looked at this

portion of High Point's planning area has recommended a substantially enhanced transportation network, because the existing network is fragmented and connectivity is poor. There are several planned or proposed road projects within or with impact on the study area that will, if constructed, improve this situation. One of these planned transportation projects is the High Point Airport Connector project. The plan notes that the proposed Hybrid Alternative would likely have fewer environmental impacts than a completely new alignment (New Location Alternative) and would save money, as well. Additionally, one of the four goals in the plan is protecting the natural environment. Of the projects listed in the HPMPO 2035 LRTP that are within the Northwest Area Plan's study area, only the Airport Connector (North-South Connector) Project is referred to as having regional significance by the HPMPO.

Heart of the Triad Plan

The Piedmont Authority for Regional Transportation (PART) in collaboration with Forsyth County, City of Greensboro, Guilford County, City of High Point, Town of Kernersville, Town of Oak Ridge, and City of Winston-Salem recently completed Heart of the Triad: A Collaborative Plan for Economic Vitality and Quality of Life Plan. The purpose of the Heart of the Triad Plan was to develop a master plan for 7,500 acres of land, named Heart of the Triad, located along the Guilford-Forsyth County line, west of the Piedmont Triad International Airport and along I-40, I-40 Business, and US 421 corridors. The Plan suggests that "as traffic congestion increases in the area, priority should be given to the widening of existing roadways and enhancement of transit service as a means to manage increases in traffic congestion in lieu of the construction of new roadways on new alignment." The Plan supports the integration of adopted land uses into future planning, but does not support the I-73/74 Airport Connector Project. At the time of this assessment, this plan has not yet been adopted by the City of High Point.

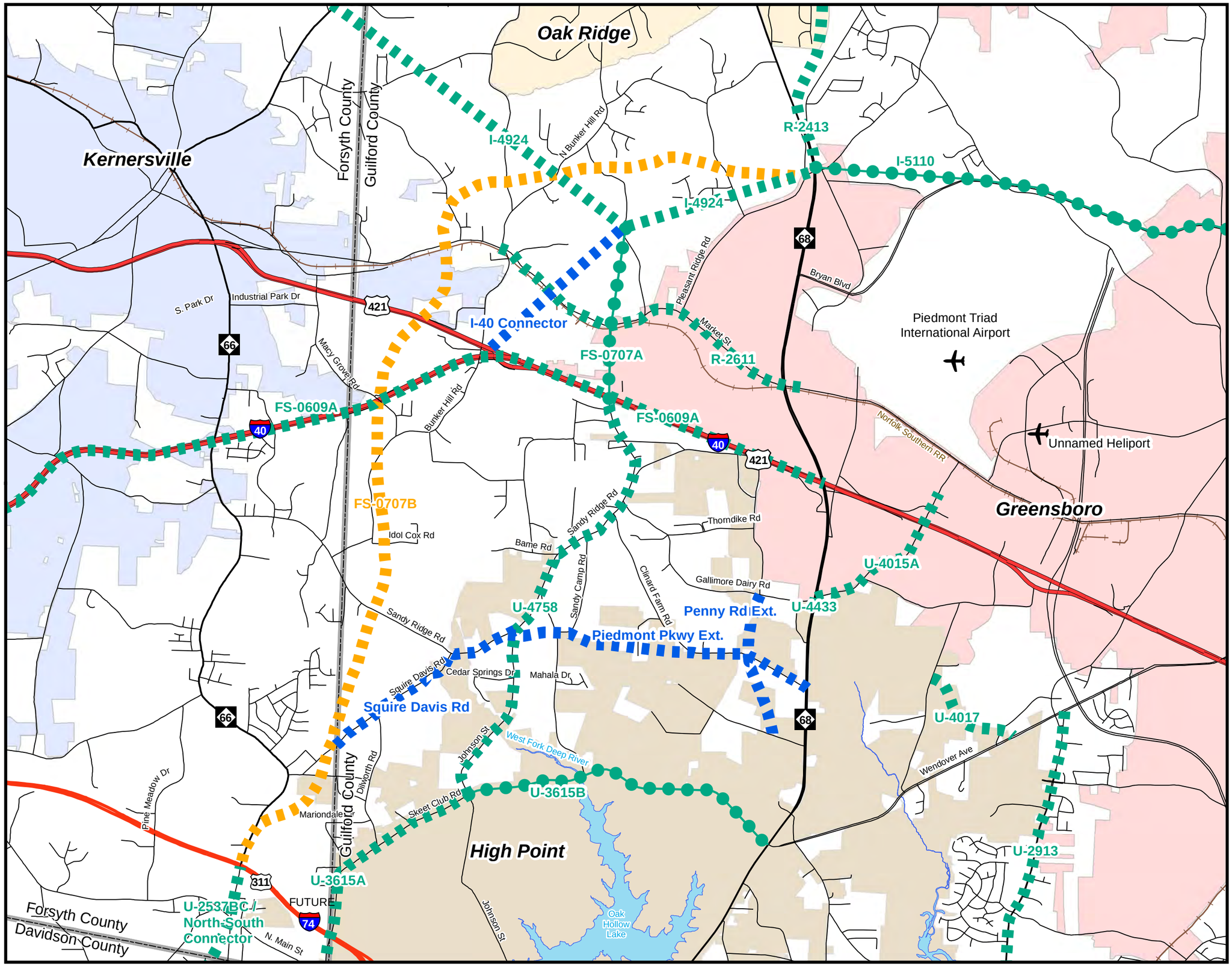
1.7. Proposed Projects and Existing Studies

STIP Project I-5110 Future I-73

STIP Project I-5110 is a proposed 3-mile freeway (Future I-73) on new location from NC 68 to the Greensboro Western Loop. The 2009-2015 NCDOT STIP indicates that this project is programmed for planning and environmental study, and that right-of-way and construction are unfunded. However, STIP Project I-5110 is funded in the Draft 2012-2018 NCDOT STIP, which indicates that right-of-way acquisition is scheduled for Fiscal Year 2015 and construction is scheduled to begin in Fiscal Year 2016. See **Figure 2** for a schematic view of the regional transportation network.

STIP Project R-2413 US 220/NC 68 Connector

STIP Project R-2413 is a proposed 12-mile connector from Pleasant Ridge Road (SR2133) to US 220/NC 68 in Guilford and Rockingham Counties. The first section of the US 220/NC 68 Connector (R-2413C) will run along existing US 220 from just south of the Haw River to the NC 68 intersection in Rockingham County. The second section (R-2413A/B) will follow a new alignment from US 220 just south of the Haw River to NC 68 north of Pleasant Ridge Road. The 2009-2015 NCDOT STIP indicates that planning/design is in progress, and construction is scheduled to begin in 2012.



Legend

- FS-0707B High Point Airport Connector
- NCDOT TIP Projects
- MPO Transportation Projects
- Interstate
- US Highway
- NC Highway
- State Road
- Railroad
- Lakes
- County Boundary
- Greensboro
- High Point
- Kernersville
- Oak Ridge
- Airport

N W E S

Miles: 0 0.5 1 2

HNTB

Figure 2

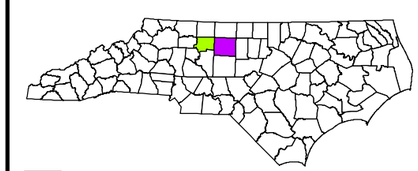
Regional Transportation Network & Context

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

March 2011

MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://www.high-point.net
Guilford County: http://www.co.guilford.nc.us
Forsyth County: http://www.co.forsyth.nc.us
HPMPO: http://www.hpdot.net/hpmpo
GUAMPO: http://www.greensboro-nc.gov/deparments/GDOT/divisions/planning/metro



- North Carolina Counties
- Guilford County
- Forsyth County

STIP Project FS-0609A I-40 Widening

The NCDOT completed a feasibility study (STIP Project FS-0609A) in July 2009 to evaluate the feasibility of widening I-40 between NC 109 in Forsyth County to NC 68 in Guilford County, which is approximately 14.8 miles in length. The feasibility study recommended an 8 to 10-lane divided freeway to accommodate the projected design year traffic volumes for the segments of I-40 within the project study area. In addition, the study recommended that the exiting I-40/Sandy Ridge Road diamond interchange be modified into a diamond with loops interchange in order to accommodate the projected 2035 design year traffic volumes.

STIP FS-0707A Sandy Ridge Road Widening and Extension

The City of Greensboro is conducting a feasibility study for STIP Project FS-0707A. This study is assessing widening Sandy Ridge Road and Pleasant Ridge Road to four-lane divided facilities, and analyzing interchange design options for upgrading the Sandy Ridge Road/I-40 interchange. As part of this feasibility study, Greensboro is looking at an interim solution for transportation improvements north of I-40 in the area of the Market Street interchange. The 2009-2015 NCDOT STIP and the Draft 2012-2018 NCDOT STIP indicate that STIP Project FS-0707A is a proposed new route from Sandy Ridge Road (SR 1850) at West Market Street (SR 1008) to NC 68 near Piedmont Triad International Airport. NCDOT's Draft 2012-2018 STIP lists the status of STIP Project FS-0707A as Feasibility Study in Progress by Others. This study is funded in NCDOT's 2011-2015 Work Program. In December 2009, a coordination meeting was held between the FS-0707A and FS-0707B study teams. The purpose of this meeting was to provide the City of Greensboro with a status update on the High Point Airport Connector feasibility study, share the findings and conclusions of the study to date, and to obtain comments from the City of Greensboro. Meeting minutes from this coordination meeting are located in Appendix D. The City of Greensboro provided comments regarding FS-0707B in October 2011, which are located in Appendix E.

STIP Project U-4758 Johnson Street / Sandy Ridge Road Widening

The City of High Point in collaboration with NCDOT is preparing the environmental studies for the 4.4 mile widening of the Johnson Street / Sandy Ridge Road (SR 1818/1850) corridor, from Skeet Club Road (SR 1820) to I-40 in High Point and Guilford County. The 2009-2015 NCDOT STIP as well as the Draft 2012-2018 NCDOT STIP indicate that right-of-way acquisition and construction are unfunded.

STIP Project R-2611 West Market Street Widening

STIP Project R-2611 proposes to widen a 3.6-mile section of West Market Street from Bunker Hill Road (SR 2007) in Colfax to NC 68 in Greensboro. The 2009-2015 NCDOT STIP and the Draft 2012-2018 NCDOT STIP indicate that construction is scheduled to begin in Fiscal Year 2011 and scheduled to be complete in Fiscal Year 2013. Additionally, the Draft 2012-2018 NCDOT STIP states that right-of-way acquisition is in progress.

STIP Project I-4924 I-73/I-74 Connector

STIP Project I-4924 (I-73/I-74 Connector) is a proposed new location freeway from the Winston-Salem Beltway north of Kernersville to NC 68 west of Greensboro. The 2009-2015 NCDOT STIP indicates that this project is programmed for planning and environmental study only. STIP Project I-4924 is unfunded, and is not listed in the Draft 2012-2018 NCDOT STIP.

STIP Project U-2537BC North-South Connector

STIP Project U-2537BC is known as the proposed North-South Connector extending from I-85 Business in Randolph County to US 311/Future I-74 in Forsyth County. This proposed

project would tie into the southern terminus of the proposed High Point Airport Connector project (FS-0707B) at US 311/Future I-74. The 2009-2015 NCDOT STIP indicates that STIP Project U-2537 is unfunded, and is not listed in the Draft 2012-2018 NCDOT STIP.

Piedmont Parkway Extension

The City of High Point completed a feasibility study in August 2007 to evaluate the feasibility of connecting an existing section of Piedmont Parkway located east of NC 68 (Eastchester Drive) to Johnson Street/Sandy Ridge Road (SR 1818/SR1850) in High Point. The total length of the proposed project is approximately 3.2 miles. The feasibility study proposes a four-lane divided curb and gutter typical section with approximately 120 feet of right-of-way. This project is not listed in NDCDOT's 2009-2015 STIP or 2012-2018 Draft STIP.

Table 2 summarizes the scheduled construction horizon of the aforementioned NCDOT STIP projects.

Table 2 – Construction Horizon of NCDOT STIP Projects

STIP Project #	Project Description	Scheduled Construction Horizon (Fiscal Year)
R-2611	West Market St Widening	Begin – 2011 End - 2013
R-2413	US 220/NC 68 Connector	Begin – 2012 End - 2017
I-5110	Future I-73	Begin – 2016 End - 2019
U-4758	Johnson St/Sandy Ridge Rd Widening	Unfunded
I-4924	I-73/I-74 Connector	Unfunded
U-2537BC	North-South Connector	Unfunded
FS-0609A	I-40 Widening	Unfunded
FS-0707A	Sandy Ridge Rd Widening / Extension	Unfunded
FS-0707B	High Point Airport Connector	Unfunded

Sources: 2009-2015 NCDOT STIP; Draft 2012-2018 NCDOT STIP

2. Initial Project Concepts

Four initial project concepts were identified from the adopted transportation plans and developed for consideration:

- No-Build Alternative;
- Improve Existing Roadways Alternatives; and
- New Location Alternative; and
- Hybrid Alternative.

Further discussion of each of these initial project concepts is included in the following sections.

2.1. No-Build Alternative Concept

The No-Build Alternative serves as the baseline comparative alternative for the design year (2035). The No-Build Alternative assumes that transportation systems in Forsyth and Guilford County would evolve as currently planned in the approved 2035 Long Range Transportation Plans (LRTPs), except for the planned new location corridor between the NC 66/US 311 interchange and I-40. The 2035 No-Build Alternative Concept highway network includes the following improved study area roadways:

- Johnson Street from Skeet Club Road to Sandy Ridge Road/Piedmont Parkway is improved to a 5-lane cross section.
- Sandy Ridge Road from Johnson Street/Piedmont Parkway to I-40 is improved to a 5-lane cross section.

2.2. Improve Existing Roadways Alternative Concepts

Two separate concepts were considered as part of this alternative. Neither of these concepts assumed additional improvements to Sandy Ridge Road, West Market Street, I-40, NC 68, or other exiting roadway facilities other than those currently planned in the adopted 2035 Long Range Transportation Plans for each of the MPOs with planning jurisdiction in the project study area (excluding the Sandy Ridge Road Extension project).

Option 1 – Widen Existing NC 66

This option considered widening existing NC 66 from US 311 to I-40 from a two-lane facility to a multi-lane median divided facility. Connectivity and access to the Piedmont Triad International Airport and the adjacent areas would be provided via existing Sandy Ridge Road, West Market Street, I-40 and NC 68.

Option 2 – Widen Existing Squire Davis Road/Sandy Ridge Road

This option assumed widening existing NC 66, Payne Road, Squire Davis Road, and Sandy Ridge Road from US 311 to I-40 from a two-lane facilities to multi-lane median divided facilities. Connectivity and access to the Piedmont Triad International Airport and the adjacent areas would be provided via existing Sandy Ridge Road, Market Street, I-40 and NC 68.

2.3. New Location Alternative Concept

A new location alternative concept assumed construction of a roadway on new location from the NC 66/US 311 interchange that ties into the NC 68/Future I-73 interchange (STIP I-5110) near the Piedmont Triad International Airport.

Initially, a freeway facility was considered for the new location alternative concept. However, after reviewing daily traffic volumes generated by the Piedmont Triad Regional Model (PTRM) for year 2035 (see Section 4.1), it was determined that a facility with a lower functional classification could more cost effectively serve anticipated travel demand. Consequently, the new location alternative between NC 66/US 311 and I-40 was designated as an expressway facility with limited access between at-grade intersections. This designation is consistent with the High Point Metropolitan Planning Organization's 2035

Long Range Transportation Plan. Access would be permitted for public streets intersecting the corridor; however, depending on projected design year peak hour traffic volumes, turning movements may be limited and signalization may be required to facilitate these movements. Should traffic volumes warrant, signalization or directional crossovers with median u-turns would be provided to provide safe and efficient traffic operations. Additionally, according to the NCDOT Facility Type & Control of Access Definitions (August 2005), signalization of the new location alternative concept would require designating the facility as a boulevard. This does not alter or modify its comparative consideration against the other initial project concepts discussed in Sections 2.1 through 2.4.

The new location alternative would include at-grade intersections at Payne Road, Squire Davis Road, Sandy Ridge Road, and Bunker Hill Road. North of I-40, the facility type for this alternative would freeway with full control of access due to increased daily traffic volumes predicted by the PTRM for 2035 (see Section 4.1). This designation is consistent with the Greensboro Urban Area MPO's 2035 Long Range Transportation Plan. Access would be provided via grade separated interchanges at the following locations:

- I-40
- West Market Street
- Future Sandy Ridge Road Extension / Future I-73/I-74 Connector
- NC 68 / Future I-73 Connector

2.4. Hybrid Alternative Concept

This concept assumes a combination of improving existing roadways and building part of the project on new location. Specifically, this alternative would widen and join segments of existing NC 66, Squire Davis Road, and Sandy Ridge Road from US 311 to I-40 in order to form a continuous multi-lane median divided roadway. The new location portion of the Hybrid Alternative concept extends north of I-40 to the terminus at the NC 68/Future I-73 interchange. The facility type for the new location portion would be a multi-lane freeway with full control of access.

North of I-40, access would be provided via interchanges at the following locations:

- West Market Street
- Future Sandy Ridge Road Extension / Future I-73/I-74 Connector
- NC 68 / Future I-73 Connector

This scenario assumed no additional improvements to West Market Street, I-40, NC 68, or other roadway facilities other than those currently planned in the adopted 2035 Long Range Transportation Plans for each of the MPOs with planning jurisdiction in the project study area.

3. Tier 1 Qualitative Screening

3.1. Tier 1 Screening Criteria and Methodology

The qualitative Tier 1 Screening was intended to identify which of the initial project concepts could be developed to meet the purpose and need of the project as discussed in **Section 1.2**. Those concepts that cannot meet the purpose and need were removed from further consideration.

The Tier 1 Screening used the following criteria:

- Is the alternative consistent with adopted transportation plans?
- Does the alternative address the need to enhance north-south mobility, increase capacity and access between northeastern Davidson County, eastern Forsyth County, western Guilford County, and the Piedmont Triad International Airport?
- Does the alternative provide a more direct connection between the NC 66/US 311 and NC 68/Future I-73?

3.2. Tier 1 Screening Results

Each project concept was evaluated according to the screening criteria listed in Section 3.1. **Table 3** presents the results of the qualitative Tier 1 Screening. It lists each initial project concept and whether each meets or does not meet the screening criteria. If the initial concept meets or has the potential to meet a criterion, there is a "**√**" next to the text. If the initial concept would not meet the criteria, there is a "**x**" next to the text.

Table 3 – Tier 1 Qualitative Screening Results

Initial Project Concepts	Consistent with Adopted Transportation Plans	Enhances North-South Mobility and Increases Capacity	Provides More Direct Connection
No-Build Alternative	x	x	x
Upgrade Existing Roadways Alternatives			
Option 1 – Widen Existing NC 66	x	√	x
Option 2 – Widen Squire Davis Rd./Sandy Ridge Rd.	√	√	x
New Location Alternative	√	√	√
Hybrid Alternative	√	√	√

x – The alternative concept does not meet this criterion
√ – The alternative concept does meet or could be designed to meet this criterion

The following sub-sections discuss the results listed in **Table 3**, including the decision on whether the initial project concept was carried forward to the Tier 2 Screening.

3.2.1. No-Build Alternative Concept

The No-Build Alternative would not meet the project's purpose and need. It would not improve north-south mobility and increase capacity between northeastern Davidson County, eastern Forsyth County, and western Guilford County with the Piedmont Triad Internal Airport and areas north of I-40. It would not improve system linkage and connectivity, nor would it provide an additional crossing of I-40. For this reason, the No-Build Alternative was eliminated from further consideration. However, the No-Build Alternative was retained for the Tier 2 Screening as a basis of comparison for the build alternatives.

3.2.2. Upgrade Existing Roadways Alternative Concepts

Option 1 – Widen Existing NC 66

The Widen Existing NC 66 Alternative is not consistent with adopted transportation plans since none of the MPO-adopted long range transportation plans include a project to improve NC 66. Although widening existing NC 66 would enhance mobility and increase capacity, it would provide a circuitous route between the proposed project termini. Additionally, it would not provide a network benefit of an additional crossing of I-40. As a result of these considerations, it was recommended that the Widen Existing NC 66 Alternative be eliminated from further consideration.

Option 2 – Widen Existing Squire Davis Road/Sandy Ridge Road

The Widen Existing Squire Davis Road/Sandy Ridge Road Alternative is consistent with adopted transportation plans. This alternative would enhance mobility and increase capacity south of I-40. However, Option 2 does not provide direct access, increase capacity or improve travel times for traffic accessing the Piedmont Triad International Airport and surrounding area(s). This option would require a circuitous route using any combination of West Market Street, Pleasant Ridge Road, I-40 and NC 68, some of which are expected to operate over capacity in the design year. Additionally, a network benefit of and additional crossing of I-40 would be provided. Therefore, since Option 2 does not fully meet the purpose of the study, it was recommended that the Widen Existing Squire Davis/Sandy Ridge Road Alternative be eliminated from further consideration.

3.2.3. Hybrid Alternative Concept

The Hybrid Alternative is a combination of five projects identified in the MPO-adopted transportation plans for the project study area. These five projects are the Squire Davis Road widening between the future North-South Connector and Sandy Ridge Road, the Johnson Street/Sandy Ridge Road widening between Skeet Club Road and I-40 (U-4758), the Sandy Ridge Road widening between I-40 and West Market Street (FS-0707A), the Sandy Ridge Road extension between West Market Street and the I-73/I-74 Connector (I-40 Connector), and the I-73/I-74 Connector between the Sandy Ridge Road Extension and NC 68 (I-4924). The Hybrid Alternative is consistent with adopted transportation plans. This alternative enhances north-south mobility and increases capacity of the transportation network. Although the Hybrid Alternative would not provide an additional crossing of I-40, it provides a more direct connection between northeastern Davidson County, eastern Forsyth County, western Guilford

County, and the Piedmont Triad International Airport. Therefore, the Hybrid Alternative was retained for further study.

3.2.4. New Location Alternative Concept

The New Location Alternative is consistent with adopted transportation plans, as it would enhance north-south mobility and increase capacity of the transportation network. It would also provide a more direct connection between northeastern Davidson County, eastern Forsyth County, western Guilford County, and the Piedmont Triad International Airport. Additionally, the New Location Alternative would provide a new crossing of I-40. Based on these factors, the New Location Alternative was recommended for further study.

3.3. Initial Project Concepts Carried Forward for Further Study

Table 4 shows which project concepts were kept for further screening and which projects were eliminated from consideration.

Table 4 – Initial Project Concepts Carried Forward for Further Study

Project Concepts Retained for Quantitative Second Screening	Project Concepts Eliminated from Further Consideration
No-Build	Widen Existing NC 66
Hybrid Alternative	New Location Freeway
New Location Expressway	Widen Existing Squire Davis Road/Sandy Ridge Road

4. Feasibility Study Alternatives

Study corridors were also identified for each feasibility study concept carried forward for further study from the Tier 1 Qualitative Screening. The study corridor for the Hybrid Alternative was determined to be 500 feet in width in the widening section, but increases to 1,200 feet in the area of new location section. Because there is greater need for design flexibility, the study corridor for the New Location Alternative was determined to be 1,200 feet in width.

Conceptual designs were prepared for each initial project concept within each of the study corridors. The Hybrid Alternative assumed asymmetrical[1]/best fit alignment along Squire Davis Road and Sandy Ridge Road. The concept designs were developed with consideration of engineering design constraints and the locations of sensitive resources as identified through field reconnaissance and existing Geographic Information Systems (GIS) data. Conceptual designs include horizontal and vertical alignments for the roadway, anticipated slope stake

[1] Asymmetrical/best fit alignment is the technique in which the extra roadway width is added to just one side of the existing paved surface.

limits, right-of-way limits, horizontal design of interchanges, and a limited evaluation of vertical alignments at interchange areas.

Conceptual designs are very preliminary and change as more detailed engineering evaluation is completed. The conceptual designs are referred to as feasibility study alternatives in the remainder of the report.

4.1. Traffic Corridor Analysis

Level of Service (LOS) is a qualitative measure of traffic operating conditions specific to each type of transportation facility. LOS is measured by letter designations A through F, with LOS A representing the best operating conditions and LOS F denoting the worst (*i.e.*, breakdown) operating conditions. LOS D is considered appropriate for heavily developed sections of urban areas, while LOS C is considered appropriate in rural areas. In general, the approach of the corridor segment analysis was to identify roadway capacities that would provide LOS D or better in year 2035.

In order to estimate the roadway capacity required to serve anticipated design year (2035) travel demand, a traffic corridor analysis was completed using the currently adopted version of Piedmont Triad Regional Model (PTRM), version 2.0, and the North Carolina Level of Service (NCLOS) software. NCLOS is based on field data collected from North Carolina roadways. Using the NCLOS software, design year roadway capacities for each feasibility study concept were identified to provide acceptable traffic operations. The traffic operations for each feasibility study concept are discussed in terms of Level of Service.

4.1.1. No Build

In the 2035 No Build Scenario, scheduled roadway improvements are included in the NCLOS capacity analysis. Even with these scheduled improvements, the majority of study area roadway facilities, 4 of 16 facility segments, are predicted to operate near or over capacity (i.e. LOS E or F). The remaining segments, 12 of the 16 facility segments, are expected to operate with roadway capacities at LOS D or better. Facilities that are expected to have segments operating near or over capacity include Sandy Ridge Road, Market Street and I-40. In 2035, the roadway segment of Sandy Ridge Road from Johnson Street to I-40 has the highest expected V/C ratios at 1.33. **Figure 3** and **Table 5** contain the results of the NCLOS analysis for the No Build Scenario.

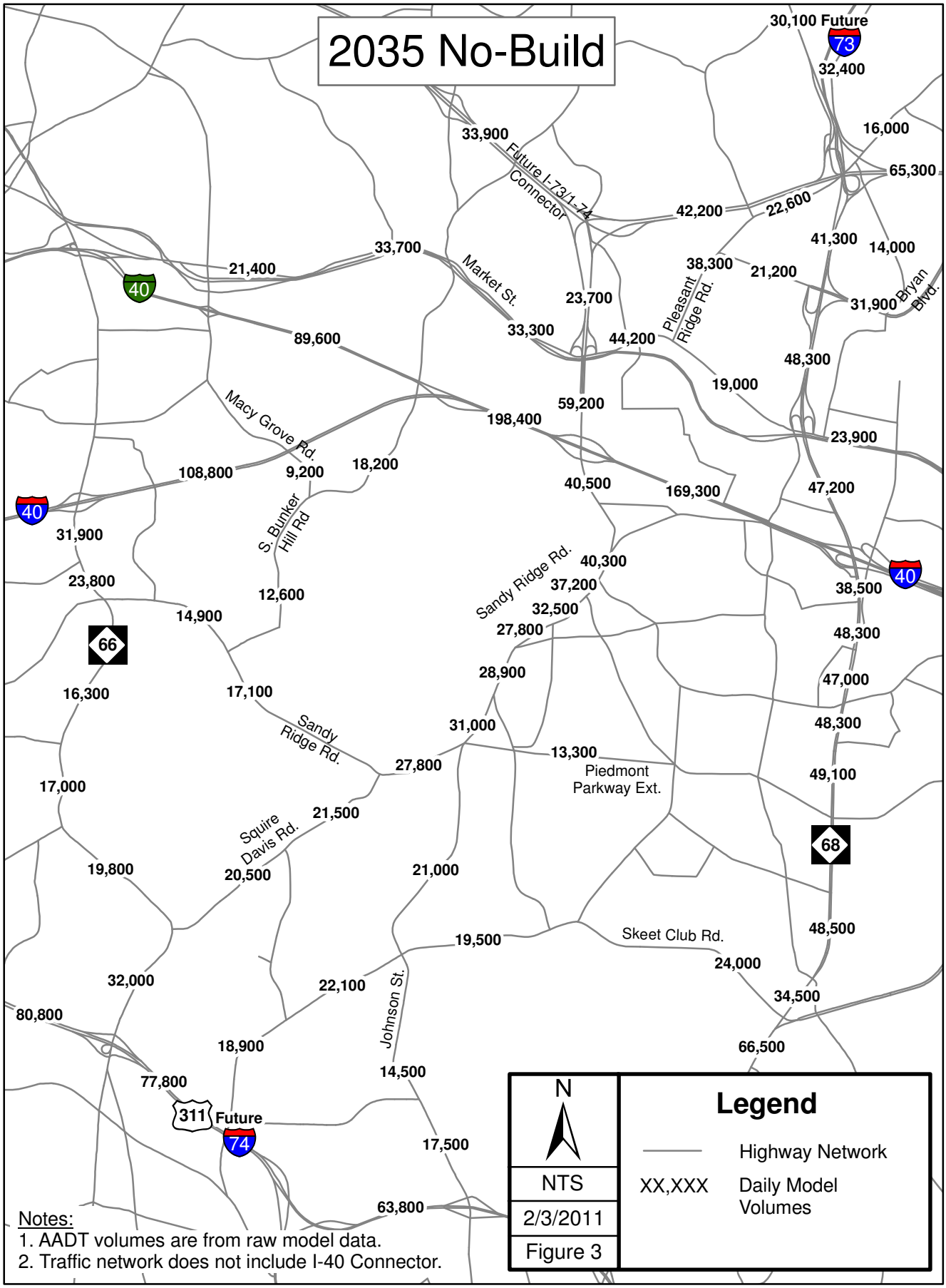

2035 No-Build
30,100 Future
73
32,400
16,000
65,300
33,900
Future I-73/I-74 Connector
42,200
22,600
41,300
14,000
33,700
21,400
Market St.
38,300
21,200
Pleasant Ridge Rd.
Bryan Blvd.
31,900
40
23,700
33,300
44,200
89,600
48,300
19,000
59,200
Macy Grove Rd.
198,400
23,900
108,800
9,200
18,200
40,500
169,300
47,200
40
31,900
S. Bunker Hill Rd
Sandy Ridge Rd.
40,300
37,200
38,500
40
23,800
12,600
32,500
14,900
27,800
48,300
66
28,900
47,000
16,300
17,100
Sandy Ridge Rd.
31,000
48,300
13,300
27,800
Piedmont Parkway Ext.
49,100
17,000
21,500
Squire Davis Rd.
68
19,800
20,500
21,000
48,500
19,500
Skeet Club Rd.
24,000
32,000
22,100
Johnson St.
34,500
80,800
18,900
66,500
14,500
77,800
311
Future
74
17,500
63,800
N
NTS
2/3/2011
Figure 3
Legend
Highway Network
XX,XXX Daily Model Volumes
Notes:
1. AADT volumes are from raw model data.
2. Traffic network does not include I-40 Connector.

Table 5 – 2035 No Build NCLOS Capacity Analysis Results

Facility Segment	From	To	Facility Type	2035 AADT*	NCLOS Capacity**	V/C	LOS
NC 66	US 311	Payne Rd	4-Lane Divided	32,000	44,400	0.72	B
NC 66	Payne Rd	Sandy Ridge Rd	2-Lane Undivided	19,800	22,200	0.89	D
NC 66	Sandy Ridge Rd	I-40	5-Lane Section	31,900	37,100	0.86	C
Payne Road	NC 66	Squire Davis Rd	4-Lane Divided	20,500	44,400	0.46	A
Squire Davis Road	Payne Rd	Sandy Ridge Rd	4-Lane Divided	21,500	44,400	0.48	A
Sandy Ridge Road	Squire Davis Rd	NC 66	2-Lane Undivided	17,100	22,200	0.77	C
Sandy Ridge Road	Squire Davis Rd	Johnson St / Future Piedmont Pkwy	4-Lane Divided	27,800	44,400	0.63	B
Sandy Ridge Road	Johnson St / Future Piedmont Pkwy	I-40	4-Lane Divided	40,500	44,400	***0.91***	***E***
Sandy Ridge Road	I-40	Market Street	4-Lane Divided	59,200	44,400	***1.33***	***F***
Johnson Street	US 311	Skeet Club Rd	5-Lane Section	17,500	37,100	0.47	B
Johnson Street	Skeet Club Rd	Sandy Ridge Rd	4-Lane Divided	21,000	44,400	0.47	A
Market Street	Sandy Ridge Rd	NC 68	4-Lane Divided	44,200	44,400	***1.00***	***E***
Sandy Ridge Road Extension	Market Street	I-73 / I-74 Connector	4-Lane Expressway	23,700	56,900	0.42	B
I-73 / I-74 Connector	Sandy Ridge Road Extension	NC 68	4-Lane Freeway	42,200	61,100	0.69	C
I-40	Sandy Ridge Road	NC 68	10-Lane Freeway	169,300	137,700	***1.23***	***F***
NC 68	I-40	Future I-73	6-Lane Expressway	48,300	85,100	0.57	C

* Highest AADT along facility segment is reported.
** Maximum LOS E volume before facility exceeds capacity and reaches LOS F.

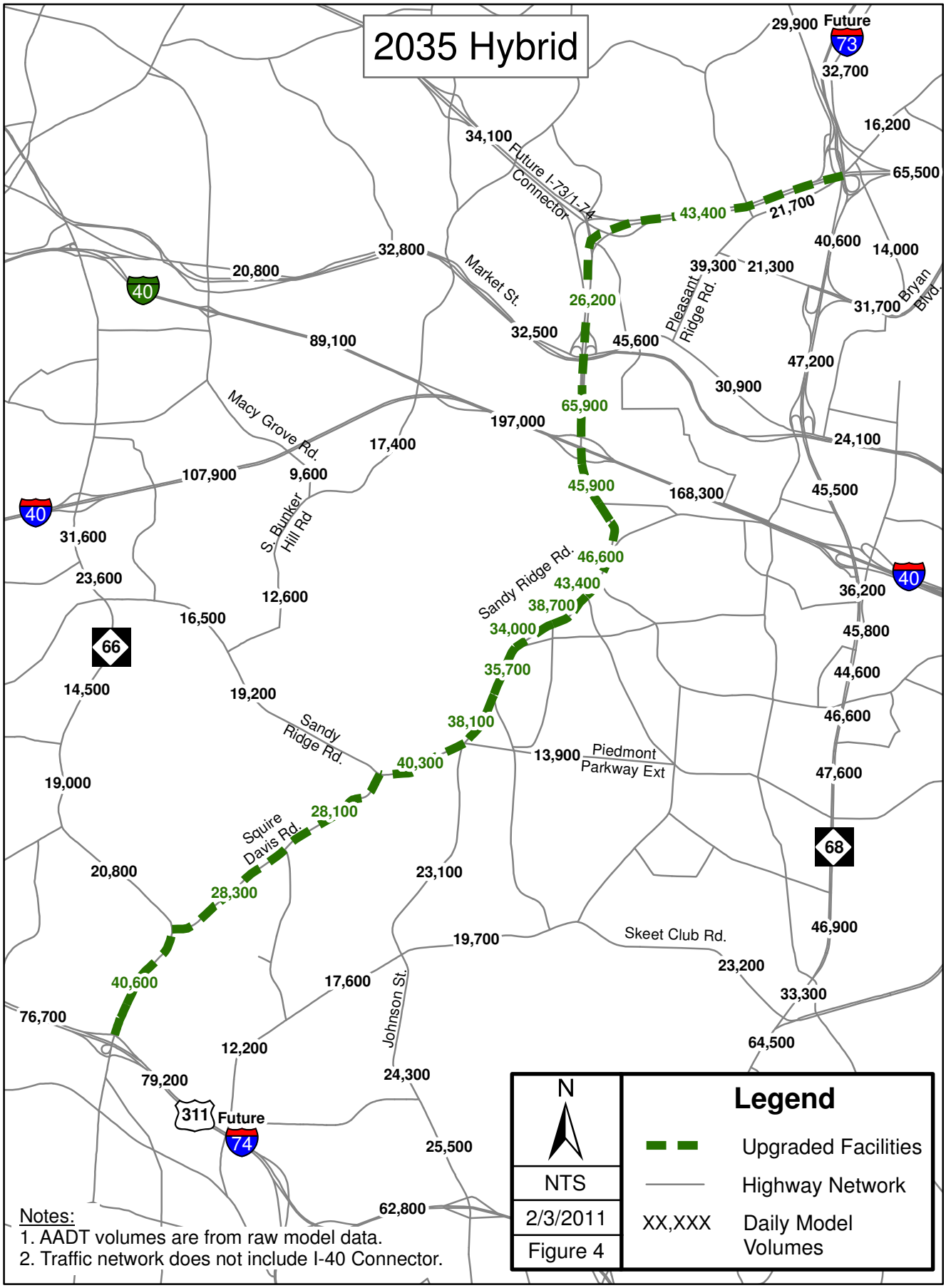
4.1.2. Hybrid Alternative

Figure 4 and **Table 6** contain the results of the NCLOS analysis for the Hybrid Alternative. The Hybrid Alternative was initially analyzed as a six-lane divided facility between US 311 and I-40. Based on the NCLOS software level of service (LOS) thresholds, a four-lane divided and a six-lane divided facility are expected to operate at LOS D or better up to 39,800 vehicles per day (vpd) and 59,700 vpd, respectively. In estimating roadway capacity for the feasibility study concepts, the general approach was to maintain a LOS of D or better for the upgraded facilities. Therefore, upon review of the model results for the Hybrid Alternative, the 2035 projected daily traffic volumes did not warrant a six-lane divided facility south of the Johnson Street/Piedmont Parkway intersection. Although the segment of NC 66 between US 311 and Payne Road slightly exceeded the LOS D threshold (V/C ratio for LOS D is 0.90), the anticipated future land use along this segment will be rural. Additionally, it is likely that some access control will be implemented in the area of the US 311/NC 66 interchange. As a result of these considerations, a four-lane roadway cross-section is recommended.

The Sandy Ridge Road corridor north of this intersection area is projected to have 46,600 vpd, which exceeds LOS D (39,800 vpd) and LOS E (44,400 vpd) thresholds for a four-lane divided facility. Based on adopted land use plans, the future land use along the Sandy Ridge Road corridor north of Johnson Street/Sandy Ridge Road is anticipated to trend toward industrial and commercial uses. As a result, the segment of Sandy Ridge Road between Johnson Street/ Piedmont Parkway and I-40 is expected to carry higher traffic volumes, have more access drives, and more future signalized intersections. These factors, in combination with it providing access and connectivity to I-40, resulted in a recommendation of a six-lane divided section to serve project year 2035 travel demand.

North of I-40, the Hybrid Alternative will transition to a facility with full control of access. However, because of the short transition distance between Market Street and the Future I-73/I-74 Connector, it is anticipated that reduction of travel lanes would be difficult. Additionally, it is anticipated that this segment will carry more than the projected 14,200 vpd. Consequently, despite the lower model volumes, this segment was modeled as a 6-lane freeway.

With these upgrades in 2035, the majority of study area roadway facilities, 5 of 7 facility segments, are predicted to operate at level of service of D or better. The remaining 2 of the 7 facility segments are expected to operate with roadway capacities at or over capacity (*i.e.* LOS E). Parts of Sandy Ridge Road and NC 66 are expected to operate at, or above, LOS E.



Notes:
1. AADT volumes are from raw model data.
2. Traffic network does not include I-40 Connector.

Table 6 – 2035 Hybrid Alternative NCLOS Capacity Analysis Results

Roadway	From	To	Facility Type	2035 AADT*	NCLOS Capacity**	V/C	LOS
Airport Connector (NC 66)	US 311	Payne Rd	4-Lane Boulevard	40,600	44,400	***0.91***	***E***
Airport Connector (Squire Davis Rd)	Payne Rd	Sandy Ridge Rd	4-Lane Boulevard	28,300	44,400	0.64	B
Airport Connector (Sandy Ridge Rd)	Squire Davis Rd	Johnson St / Future Piedmont Pkwy	4-Lane Boulevard	40,300	44,400	***0.91***	***E***
Airport Connector (Sandy Ridge Rd)	Johnson St / Future Piedmont Pkwy	I-40	6-Lane Boulevard	46,600	66,700	0.70	B
Airport Connector (Sandy Ridge Rd)	I-40	Market Street	6-Lane Freeway	65,900	92,200	0.71	C
Airport Connector	Market Street	I-73 / I-74 Connector	6-Lane Freeway	26,200	92,200	0.28	A
Airport Connector	I-73 / I-74 Connector	NC 68	6-Lane Freeway	43,400	92,200	0.47	B

* Highest AADT along facility segment is reported.
** Maximum LOS E volume before facility exceeds capacity and reaches LOS F.

4.1.3. New Location Alternative

Figure 5 and Table 7 contain the results of the NCLOS analysis for the New Location Alternative roadway segments. The New Location Alternative was analyzed as a multi-lane expressway facility between NC 66 and I-40. Based on the NCLOS software, a four-lane expressway facility with partial control of access is expected to operate at LOS D or better when traffic volumes are less than 54,200 vpd. All projected daily traffic volumes south of I-40 are below this threshold. Therefore, a four-lane expressway section was recommended. It is important to note that at-grade intersections, driveways, posted speed limits and other factors can reduce capacity and level of service thresholds.

North of I-40, the New Location Alternative was analyzed as a four-lane freeway. The segments between I-40 and the Sandy Ridge Road Extension are anticipated to operate at LOS C or better. The roadway segment between the Sandy Ridge Road Extension and NC 68 is projected to have 50,700 vpd, which is 92% of the LOS D threshold for a four-lane controlled access facility (54,300 vpd). Based on review of the projected model volumes, level of service of surrounding facilities, and professional judgment, a six-lane freeway section was recommended.

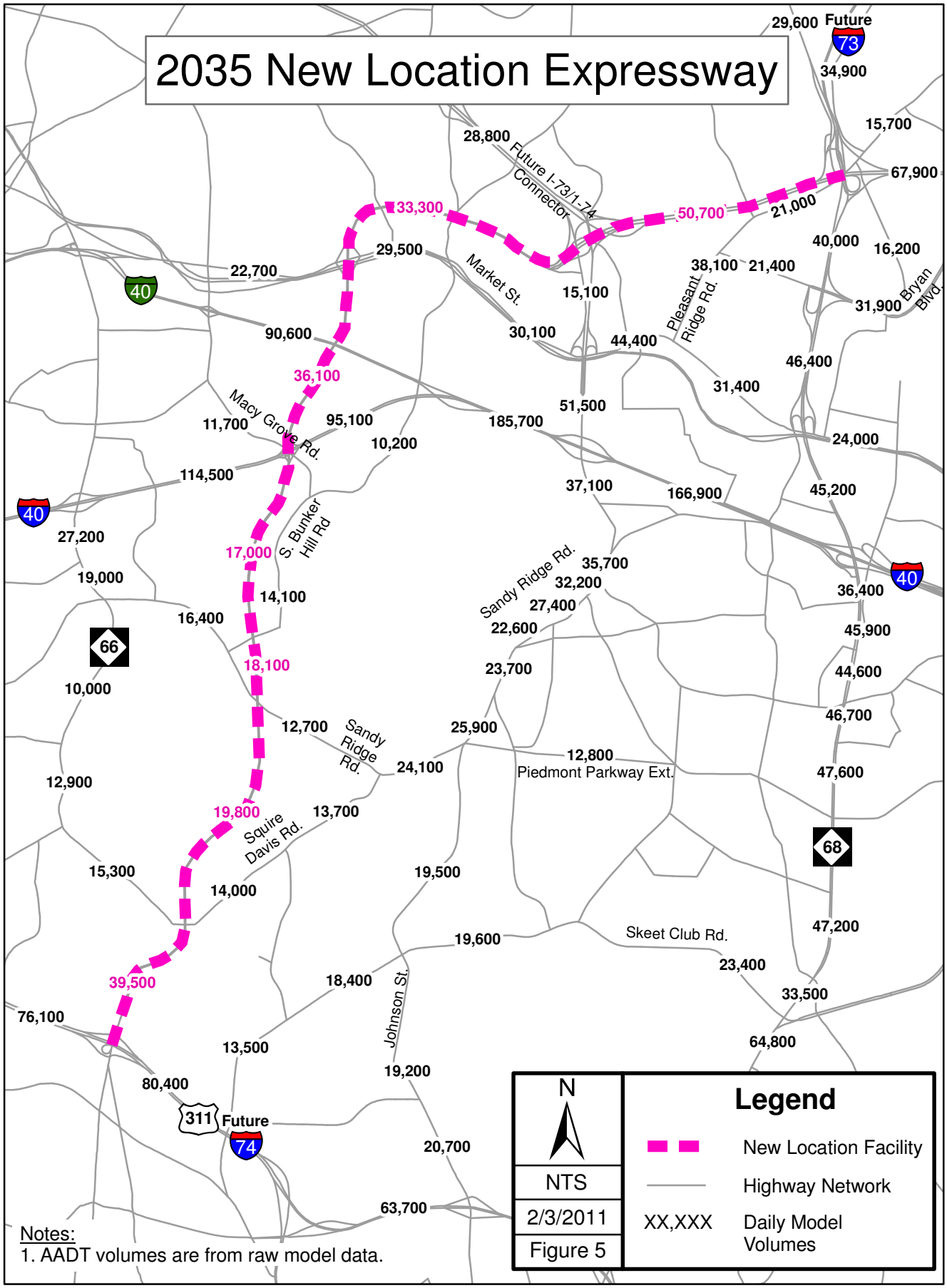

2035 New Location Expressway
29,600
Future
73
34,900
15,700
28,800
Future I-73/I-74 Connector
67,900
33,300
50,700
21,000
40,000
16,200
29,500
22,700
Market St.
38,100
21,400
40
15,100
Pleasant Ridge Rd.
31,900
Bryan Blvd.
90,600
30,100
44,400
46,400
36,100
31,400
Macy Grove Rd.
51,500
11,700
95,100
185,700
24,000
10,200
114,500
37,100
166,900
45,200
40
27,200
S. Bunker Hill Rd
17,000
35,700
Sandy Ridge Rd.
32,200
40
19,000
14,100
27,400
36,400
16,400
22,600
45,900
66
18,100
23,700
44,600
10,000
46,700
12,700
Sandy Ridge Rd.
25,900
12,800
Piedmont Parkway Ext.
24,100
47,600
12,900
19,800
13,700
Squire Davis Rd.
68
15,300
19,500
14,000
47,200
Skeet Club Rd.
19,600
23,400
39,500
18,400
Johnson St.
33,500
76,100
64,800
13,500
19,200
80,400
311
Future
74
20,700
63,700
N
NTS
2/3/2011
Figure 5
Legend
New Location Facility
Highway Network
XX,XXX
Daily Model Volumes
Notes:
1. AADT volumes are from raw model data.

Table 7 – 2035 New Location Alternative NCLOS Capacity Analysis Results

Roadway	From	To	Facility Type	2035 AADT*	NCLOS Capacity**	V/C	LOS
Airport Connector	US 311	NC 66 / Payne Rd	4-Lane Expressway	39,500	56,900	0.69	C
Airport Connector	NC 66	Bunker Hill Road	4-Lane Expressway	19,800	56,900	0.35	B
Airport Connector	Bunker Hill Road	I-40	4-Lane Expressway	17,000	56,900	0.30	A
Airport Connector	I-40	Market St	4-Lane Freeway	36,100	61,100	0.59	C
Airport Connector	Market St	Sandy Ridge Rd Ext	4-Lane Freeway	33,300	61,100	0.55	C
Airport Connector	Sandy Ridge Rd Ext	NC 68	6-Lane Freeway	50,700	92,200	0.55	C

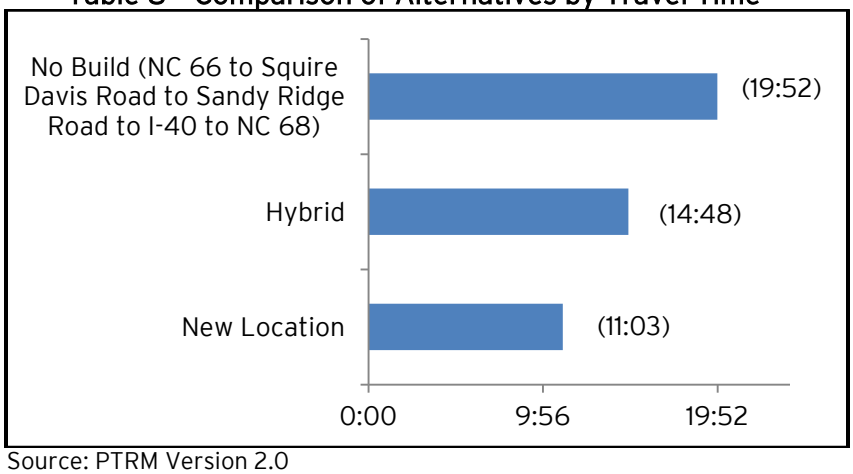
* Highest AADT along facility segment is reported.

** Maximum LOS E volume before facility exceeds capacity and reaches LOS F.

4.1.4. Model Comparison Results

A comparison of travel times from US 311 at NC 66 to NC 68 at Pleasant Ridge Road for the feasibility study alternatives is shown in **Table 8**. The travel times are for the PM peak travel period, 5:00-6:00 PM, which represents operations under congested conditions. Travel time comparisons revealed that all scenarios with roadway improvements improved travel times for every corridor listed compared to the No Build scenario. The new location facility proved to be the fastest path between the US 311 and NC 68 termini by over four minutes than the next closest scenario. As expected, the model results indicate that the average speeds for each corridor correlate with the travel times, with the New Location alternative having the highest average speed. This can be attributed to the high speed, grade separated freeway facility type of the New Location alternative.

Table 8 – Comparison of Alternatives by Travel Time



Source: PTRM Version 2.0
Travel Times are from the 5:00-6:00 PM highway assignment file. Results shown in minutes:seconds.

4.2. Design Criteria and Typical Sections

The design criteria used to develop the conceptual designs are based on the results of traffic analysis using the North Carolina Level of Service (NCLOS) software, as well as the project's location, functional classification, and design speed. The design criteria established for each of the feasibility study concepts conform to the standards in the NCDOT Roadway Design Manual and American Association of State Highway and Transportation Officials (AASHTO) *A Policy on Geometric Design of Highways and Streets*. The design criteria are in **Appendix B**.

4.2.1. Hybrid Alternative

The design criteria and typical roadway typical section for the Hybrid Alternative are shown in **Appendix B** (Table 1 and Figure 1, respectively). The segment between US 311 and Johnson Street is proposed as a four-lane, median-divided boulevard with curb and gutter and partial control of access. Two 12-foot travel lanes are proposed for each direction of travel, separated by a minimum 30-foot median. This median width would allow for dual left-turn lanes at signalized intersections along the corridor. A minimum 4-foot striped bicycle lane and 5-foot sidewalk area are also proposed in each direction. The total right-of-way width proposed for this facility varies from a minimum of 150 feet.

Between Johnson Street and West Market Street, an additional 12-foot travel lane per direction is added. The proposed bicycle lanes and sidewalks continue to the I-40 interchange. All other cross-section dimensions remain the same. The total proposed right-of-way for the six-lane section is a minimum of 180 feet. The segment between I-40 and West Market Street is also currently under study as part of project FS-0707A, which proposes a multi-lane boulevard facility featuring at-grade intersections with partial or no control of access. This is in contrast to the freeway facility with full control of access proposed under FS-0707B. In general, the FS-0707A typical section is 103 feet between faces of curb and FS-0707B is 131.5 feet.

Asymmetrical best-fit widening was employed through this existing roadway corridor in order to minimize impacts to properties and flatten existing roadway curvature, which allows for a continuous 50 mph design speed. At the I-40 and West Market Street interchanges, the horizontal geometry was also designed to minimize impacts to properties where possible, yet provide the minimum loop ramp and slip ramp radii per NCDOT standards.

Between West Market Street and NC 68, the proposed facility type changes to a six-lane, median divided, full control of access freeway with shoulders. Three 12-foot travel lanes are proposed for each direction, separated by a minimum 70-foot median. No bicycle or pedestrian facilities are proposed. The total proposed right-of-way width is a minimum of 350 feet.

The Hybrid Alternative was designed with partial control of access south of I-40 and with full control of access north of I-40. South of I-40, this was done because the traffic volumes did not warrant a freeway facility and access to residential and commercial driveways could be maintained, as well as connectivity of the existing roadway network via at-grade intersections. North of I-40, the additional traffic

volumes introduced at the I-40 interchange warranted a freeway facility with interchanges, which would also provide consistency with the future freeway facilities of the I-73/I-74 Connector and NC 68/US 220 Connector, which interface with the Airport Connector at interchanges.

NCDOT standards for a boulevard facility south of I-40 would limit access to one driveway connection per parcel. At the US 311, I-40, and West Market Street interchanges, 1,000' should be provided from the Y-line ramp terminal to the nearest access point, or where impractical, 350' with full control of access and an additional 650' with a raised island, which limits access to right-in/right-out only.

4.2.2. New Location Alternative

The design criteria and typical roadway typical section for the New Location Alternative are shown in **Appendix B** (Table 1 and Figure 2, respectively). The new location segments south of I-40 are proposed as a four-lane, median divided expressway with shoulders and limited control of access. Two 12-foot travel lanes are proposed for each direction of travel, separated by a 46-foot median. This width would allow for future median widening to provide an additional 12-foot travel lane in each direction without having to purchase additional right-of-way. The minimum proposed right-of-way width for the new location segments south of I-40 is 240 feet. Additional right-of-way may be required around intersection areas.

North of I-40, the proposed facility type is a 4 to 6-lane, median divided, full control of access freeway with shoulders. The median width increases to 70 feet to allow future widening without acquiring additional right-of-way. Additionally, the total right-of-way width is proposed to increase to a minimum of 350 feet. This width would increase at interchange areas. Two 12-foot travel lanes for each direction of travel are proposed between I-40 and Sandy Ridge Road Extension. This increases to three 12-foot travel lanes per direction between Sandy Ridge Road Extension and the project terminus with NC 68.

The New Location corridor follows a rural route chosen to minimize impacts to existing properties and roadways, yet still meet the Purpose and Need of the project. The horizontal geometry was designed for a 60 mph design speed south of I-40 and a 70 mph design speed north of I-40, per the Design Criteria in **Appendix B** (Table 1). At the I-40 and West Market Street interchanges, the horizontal geometry was designed to minimize impacts to properties where possible, yet provide the minimum ramp radii per NCDOT standards. A flyover option and single point urban interchange (SPUI) were studied as the proposed interchange at I-40. The interchange option as the long-term solution was based on 2035 PRTM model volumes without the proposed I-40 Connector because the proposed I-40 Connector was not deemed reasonable and foreseeable by High Point and NCDOT staff at the time as there was no allocated funding in the STIP or MTIP. With this approach, heavy northwest quadrant interchange movement would likely exceed the capacity of a loop ramp. Operationally, this made the flyover option a better ultimate solution. It is recommended that all interchange concepts be further explored during the NEPA and design phase.

The New Location Alternative was designed with partial control of access through the area south of I-40 and full control of access north of I-40. South of I-40, this was done since the traffic volumes did not warrant a freeway facility and connectivity of the existing roadway network could be maintained via at-grade intersections. North of I-40, the additional traffic volumes introduced at the I-40 interchange warranted a freeway facility with interchanges, which would also provide consistency with the future freeway facilities of the I-73/I-74 Connector and NC 68/US 220 Connector, which interface with the Airport Connector at interchanges.

Limited control of access south of I-40 would provide connections via major at-grade intersections, but prevent driveway connections, per NCDOT standards. At the US 311, I-40, and West Market Street interchanges, 1,000' should be provided from the Y-line ramp terminal to the nearest access point, or where impractical, 350' with full control of access and an additional 650' with a raised island, which limits access to right-in/right-out only.

5. Tier 2 Quantitative Screening

Tier 2 Screening involved developing an opinion of probable construction cost for each project concept, and screening for potential impacts to environmental and community features.

5.1. Criteria and Methodology

The proposed right-of-way limits for each conceptual design alternative was used to quantify potential impacts in the Tier 2 quantitative screening process. This comparison of impacts between the alternatives is preliminary and is not a substitute for the complete project planning / environmental documentation process. Data sources include 2008 aerial photography, traffic data generated from the PTRM and traffic corridor analysis, site visit observations, tax parcel mapping, and GIS databases obtained from NC One Map, NCDOT, Guilford County, Forsyth County, and the City of High Point. The Tier 2 Quantitative screening criteria and methodology are summarized below in **Table 9.**

Table 9 – Tier 2 Quantitative Screening Criteria

Screening Factor	Methodology	Source
Business Properties Affected / Business Relocations	Quantitative; Number of parcels counted within proposed alignment ROW.	2008 Guilford and Forsyth County aerial photography
Residential Properties Affected / Residential Relocations	Quantitative; Number of parcels counted within proposed alignment ROW.	2008 Guilford and Forsyth County aerial photography
Low-income or Minority Populations	Presence within proposed ROW corridor.	2000 Census data (block group level)
Major Utility Crossings	Quantitative; Number counted along corridor.	2008 Guilford and Forsyth County aerial photography, site visit observations.
Voluntary Agricultural Districts (VADs)/Enhanced Voluntary Agricultural Districts (EVADs)	Quantitative; Number counted within proposed alignment ROW.	Guilford County and Forsyth County GIS databases (accessed September 2009), tax parcel mapping
4(f) and 6(f) Properties/Recreation Properties	Quantitative; Number counted within proposed alignment ROW.	Guilford County, Forsyth County, and City of High Point GIS databases (accessed 2009), site visit observations
Schools, Libraries, Fire Stations, Community Centers	Quantitative; Number counted within proposed alignment ROW.	Guilford County, Forsyth County, and City of High Point GIS databases (accessed 2009) and site visit observations.
Churches	Quantitative; Number counted within proposed alignment ROW.	Guilford County, Forsyth County, and City of High Point GIS databases (accessed 2009), 2008 Guilford and Forsyth County aerial photography, site visit observations
Cemeteries	Quantitative; Number counted within proposed alignment ROW.	Guilford County, Forsyth County, and City of High Point GIS databases (accessed 2009), 2008 Guilford and Forsyth County aerial photography, site visit observations
Properties on or potentially eligible for National Register of Historic Places	Quantitative; Number counted within proposed alignment ROW.	NC State Historic Preservations Office (2009), Guilford County and NC OneMap GIS databases (accessed 2009).
Hazardous Materials & Superfund sites	Quantitative; Number of properties counted within proposed alignment ROW.	NC One Map GIS database (accessed 2009)
Streams	Quantitative; Number of crossings based on the corridor centerline.	Guilford County, Forsyth County, and City of High Point GIS databases (accessed 2009)
Wetlands & Ponds	Quantitative; Acres counted within proposed alignment ROW.	USFWS National Wetland Inventory GIS data (accessed September 2009)
Floodplains	Quantitative; Linear feet crossed by corridor proposed edge of travelway (EOT).	City of High Point, Guilford County, and Forsyth County GIS databases (accessed September 2009)

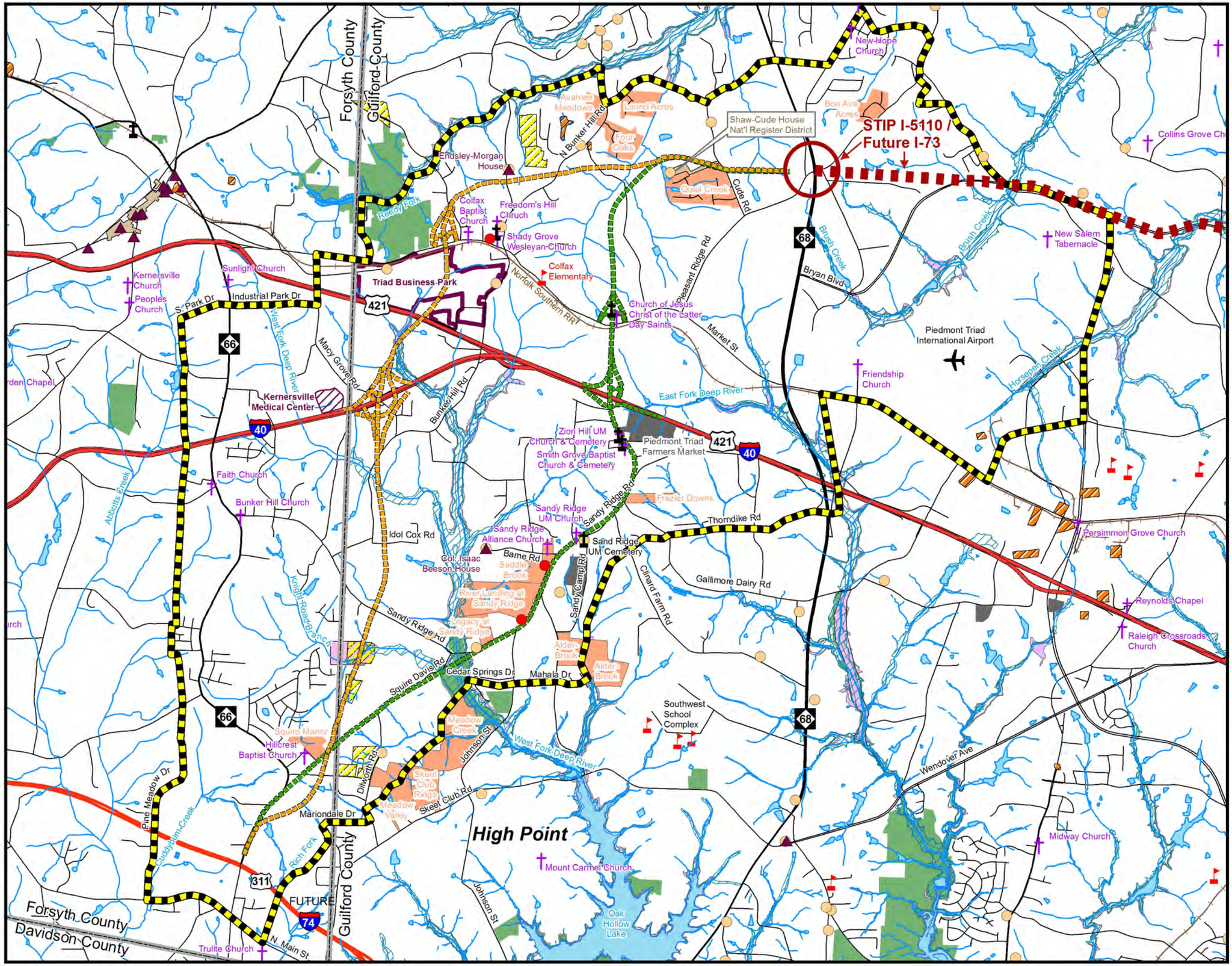
Screening Factor	Type	Methodology/Data Source
Significant Natural Heritage Areas	Quantitative; Number counted within proposed alignment ROW.	NC One Map GIS database (accessed 2009)
Conservation Easements	Quantitative; Number counted within proposed alignment ROW.	Guilford County, Forsyth County, City of High Point, and NC One Map GIS databases (accessed 2009), tax parcel mapping
Watersheds	Quantitative; Number and type counted within corridors.	NC One Map GIS database (accessed 2009), NC Division of Water Quality
303(d) Listed Streams	Quantitative; Number counted within proposed alignment ROW.	NC Division of Water Quality: 2010 Final 303(d) List (accessed November 2010).
Opinion of Probable Construction Cost (Millions $)	Quantitative; Based on unit prices of recently constructed similar facilities and/or the latest unit prices published by NCDOT	Based on unit prices of recently constructed similar facilities and/or the latest unit prices published by NCDOT dated March 2009 (inflated* to 2011 cost). *Note: Assumed a 4.0% rate of inflation.
Travel Time	Quantitative; Estimated travel time (in minutes and seconds) along alternative corridor.	Piedmont Triad Regional Model, version 2.0
Accessibility	Quantitative; Full control of access = Low, Partial control of access (no traffic signals or driveway access) = Medium, Partial control of access (traffic signals and driveway access) = High	

6. Community Issues

The project study area encompasses approximately 25,500 acres (39.8 square miles). The land use within the Hybrid Alternative study corridor consists primarily of single-family residential, rural residential, and agricultural south of I-40. North of I-40, the land use in the Hybrid Alternative study corridor transitions from primarily light industrial, industrial, and commercial with scattered single-family residential, to more rural agricultural and single-family residential land uses north of Market Street. The existing land use in the New Location Alternative study corridor is primarily rural residential with some agricultural uses south of US 421, which becomes mixed with light industrial uses between US 421 and the proposed interchange at West Market Street. North of the proposed West Market Street interchange, the New Location Alternative study corridor consists primarily of rural and single-family residential, woodland, and agricultural land uses.

Figure 6 shows the notable community features in the project study area. Community features were inventoried using 2008 aerial photography, site visit observations, tax parcel mapping, and GIS databases obtained from NCDOT, NC One Map, Guilford County, Forsyth County, and the City of High Point.

<u>Business and Residential Relocations</u>
A windshield survey based on site visit observations, assessment of GIS parcel data, and review of 2008 aerial Photogrammetry was conducted to identify business and residential locations from the conceptual alternative designs. Property impacts resulting from other projects (STIPs I-5100 Future I-73 Interchange, R-2611 West Market Street Widening and R-2413 US 220/NC 68 Connector Interchange) were considered, and excluded from this



Legend

- Study Area
- New Location Alt.
- Hybrid Alt.
- Interstate
- US Highway
- NC Highway
- State Road
- Railroad
- Stream/Creek
- 303(d) Water Body
- Water Body
- County Boundary
- Residential Subdivision
- Church
- Cemetery
- Fire or Rescue Station
- Airport
- Nat'l Register Structure
- Nat'l Register District
- Historical Property
- Public School
- Voluntary Ag. District
- State Owned Land
- Conservation Property
- Park Property
- 100 Year Floodplain
- 500 Year Floodplain
- Hazardous Subs. Disposal Site

N W E S

0 0.5 1 2 Miles

HNTB

Figure 6

Environmental & Notable Features

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

September 2011

MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://www.high-point.net
Guilford County: http://www.co.guilford.nc.us
Forsyth County: http://www.co.forsyth.nc.us

assessment. A partial take assessment methodology was used. If the alignment encroached on the building on the property or if the remnants of the property remaining from the construction of the project would not support the existing land use, a relocation was assumed. It was also assumed that there would be no residential or business impacts resulting from vacant or undeveloped parcels.

Given the rural land uses in the New Location Alternative corridor, there were fewer residential, business, church, cemetery, and historic property impacts than the Hybrid Alternative. The New Location had an estimated 14 business properties impacted, 4 of which would require relocation. The Hybrid Alternative which widens an existing developed corridor, was estimated to impact 22 businesses, 8 of which would require relocation. Similarly, the New Location would affect 124 residential properties (44 relocations) in comparison to the Hybrid Alternative with 188 residential impacts; 68 of those requiring relocations.

Major Utilities

Based on aerial photography and site visit observations, the proposed Hybrid Alternative will require two major overhead utility crossings while the proposed New Location Alternative will require one crossing. An electrical substation is located within the project study area at the southwest quadrant of Squire Davis Road / Sandy Ridge Road. However, this electrical substation would not be impacted by either proposed feasibility study alternative.

Farmland

Based on aerial photography and Guilford County GIS data, there appears to be active farming in the project study area and within both alternative study corridors. Aerial photography reveals that there are several actively farmed properties/crops along NC 66 between US 311 and Payne Road, as well as along Payne Road, in which both proposed feasibility study alternatives encroach upon. Additionally, both proposed feasibility study alternatives bisect an actively farmed property/crop located on the west side of Cude Road at the projects' northern termini. Aerial photography and GIS data indicate that the proposed right-of-way footprint of the Hybrid Alternative encroaches upon actively farmed land/crops scattered along Squire Davis Road and Sandy Ridge Road south of I-40, as well as bisects an active crop north of Market Street. The New Location Alternative is also anticipated to impact several actively farmed properties/crops, primarily between Sandy Ridge Road and Idol Cox Road, at Bunker Hill Road, between West Market Street and Crosscreek Road, and at Marshall Smith Road.

Both Guilford and Forsyth Counties have Voluntary Agricultural District (VAD) programs, under which the owners of qualifying farms receive several benefits including protection from nuisance lawsuits and exemption from some zoning and building code provisions. Guilford and Forsyth County GIS data reveal that there are seven VAD properties located within the project study area. Two Guilford County VAD properties, one of which is also a conservation property, are located within the proposed New Location Alternative right-of-way between Squire Davis Road and Sandy Ridge Road.

4 (f) and 6(f) Properties / Recreation Properties

High Point park property (Future Squire Davis Park) is located within the project study area, as well as a portion of Triad Park. Triad Park is a joint venture of Forsyth and Guilford Counties, in which 426 acres have been purchased by the counties as a regional park. The City of High Point has proposed a greenway, which would be associated with the Future Squire

Davis Park, to run along the wetland areas of the West Fork Deep River in the project study area.

Both alternatives cross the Future Squire David Park/proposed greenway. In addition, the New Location Alternative impacts two parcels of the Triad Park in the vicinity of the West Market Street Interchange.

Squire Davis Park received federal monies from the Land and Water Conservation Fund (LWCF). During the subsequent environmental phase of the project, coordination with the High Point Parks Department should be conducted to ensure than any potential proximity impacts do not result in a constructive use under Section 4(f) of the USDOT act of 1966 or conflicts with Section 6(f) of the Land and Conservation Fund Act.

Community Facilities

The right-of-way footprint of the Hybrid Alternative conceptual design encroaches upon the Piedmont Triad Ambulance and Rescue station, Municipal Fire Station #26, and the state owned Piedmont Triad Farmers Market properties. Access to and from these three facilities could be impacted by this alternative. Although the Hybrid Alternative would impact a portion of the access driveway to the Piedmont Triad Farmers Market, access would still be provided to the Farmers Market via its existing access driveway due to the proposed partial control of access south of I-40.

Churches and Cemeteries

Based on GIS data and site visit observations, there are fourteen churches located within the project study area. As shown on **Figure 6**, Colfax Baptist Church is located on the north side of West Market Street with a portion of its property located within the proposed right-of-way limits of the New Location Alternative. Four church and four cemetery properties are located within the proposed Hybrid Alternative right-of-way limits, which include (from south to north):

- Sandy Ridge United Methodist Church and Cemetery
- Smith Grove Baptist Church and Cemetery
- Zion Hill United Methodist Church and Cemetery
- Church of Jesus Christ of Latter-day Saints and Cemetery (relocation)

The Hybrid Alternative's impacts to the Church of Jesus Christ of Latter-day Saints cemetery would require the relocation of approximately 125 graves dating back to the 1940's.

Low-Income and Minority Populations

The demographic study area delineated in Section 1.3 was used to screen for any special populations within the project study area. The demographic study area is comprised of all 2000 U.S. Census Block Groups that completely or partially located within the project study area. Based on a cursory review of 2000 U.S. Census Data, (see **Tables 10** and **11**) there do not appear to be a large presence of low-income or minority populations within the project study area.

Table 10 – Low-Income

Area	Below Poverty Level		Below 50% of Poverty Level	
	Number	Percentage	Number	Percentage
Demographic Study Area	1,421	4.7%	638	2.1%
Forsyth County	32,699	11.0%	16,344	5.5%
Guilford County	43,227	10.6%	20,418	5.0%
North Carolina	958,667	12.3%	431,894	5.5%

Source: US Census Bureau, Summary File 3 - Table P87-P88 (2000)

Table 11 – Population by Race

Race / Ethnicity	Demographic Study Area		Forsyth County		Guilford County		North Carolina	
	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.	Number	% of Pop.
White	26,380	87.6%	202,338	66.1%	264,847	62.9%	5,647,155	70.2%
Black or African American	1,737	5.8%	77,041	25.2%	122,279	29.0%	1,723,301	21.4%
American Indian/Alaska Native	73	0.2%	783	0.3%	1,789	0.4%	95,333	1.2%
Asian	444	1.5%	3,133	1.0%	10,211	2.4%	112,416	1.4%
Native Hawaiian/Pacific Islander	9	0.0%	70	0.0%	110	0.0%	3,165	0.0%
Other Race	51	0.2%	397	0.1%	749	0.2%	9,015	0.1%
Two or More Races	210	0.7%	2,728	0.9%	5,078	1.2%	79,965	1.0%
Hispanic or Latino	1,206	4.0%	19,577	6.4%	15,985	3.8%	378,963	4.7%
** Total Non-White	3,730	12.4%	103,729	33.9%	156,201	37.1%	2,402,158	29.8%
Total	**30,110**	**100.0%**	**306,067**	**100.0%**	**421,048**	**100.0%**	**8,049,313**	**100.0%**

Source: US Census Bureau, Summary File 1 - Table P8 (2000)

Historic Properties and Archaeological Sites

As part of the environmental screening process, existing GIS databases were queried for the presence of any historic properties and archaeological sites within the project study area. In addition, databases at the North Carolina State Historic Preservation Office in Raleigh were researched in September 2009 for the project study area. Documentation of this research can be found in **Appendix C**.

The Shaw-Cude House, a National Register District, is located on the west side of Cude Road near the north end of both proposed alternatives and may experience proximal impacts from either alternative. The Hybrid Alternative's conceptual design right-of-wayright-of-way encroaches on portions of the Lindsay-Wagoner House (north side of Sandy Ridge Road just east of Squire Davis Road) and the Sandy Ridge United Methodist Cemetery. Both properties are listed in Guilford County's inventory of historical properties.

Regulations pertaining to historic properties and archaeological sites vary depending on the funding source used to construct the project. It is recommended that a cultural resources review be completed prior to advancing with design and construction activities.

Hazardous Substance Disposal Sites

The Hazardous Substance Disposal Sites GIS database from NC One Map was used to screen alternatives because of the liability associated with purchasing properties containing hazardous materials. This database was developed by the North Carolina Department of Environment, Health, and Natural Resources, Division of Waste Management, Superfund Section to identify locations of uncontrolled and unregulated, hazardous waste site (formerly called superfund sites) in North Carolina. Based on a review of this database, there are no hazardous substance disposal sites located within the right-of-way limits of either alternative.

Underground Storage Tanks

Guilford County's online GIS data viewer indicates that there are three underground storage tanks located in the vicinity of the Hybrid Alternative, two of which are located within the proposed right-of-way limits of the conceptual design. An underground storage tank is located on the west side of Sandy Camp Road at NCDOT's Sandy Ridge Maintenance Yard, which is just outside of the Hybrid Alternative's proposed right-of-way limits. The two underground storage tank facilities within the Hybrid Alternative's proposed right-of-way limits are located at the intersection of Sandy Ridge Road and both the eastbound and westbound on/off ramps of I-40. The listed businesses associated with these tanks are "Wilco 295" and "Neighbors Store 9."

Based on the Guilford County online GIS data viewer, there do not appear to be any underground storage tanks within the vicinity of the proposed New Location Alternative.

7. Natural Environment

As part of the study, a review of existing databases was completed to identify environmental features within the project study area. Databases reviewed include GIS databases obtained from NC One Map, NCDOT, Guilford County, Forsyth County, and the City of High Point, as well as databases at the North Carolina State Historic Preservation Office in Raleigh (September 2009). Alternatives were compared with regards to impacts associated within the conceptual design right-of-way footprint. No detailed site surveys were conducted as part of this assessment. This review is preliminary in nature and is not intended to substitute for the project planning / environmental documentation process.

Floodplains

Guilford County participates in the National Flood Insurance Program. According to GIS floodplain information obtained from Guilford County, the proposed Hybrid Alternative cross approximately 2,130-feet of 100-year and 500-year floodplains. The proposed New Location Alternative will have higher floodplain impacts due to the crossing the West Fork Deep River 100-year floodplain north of Idol Cox Road and the 100-year floodplain of an unnamed stream north of the proposed I-40/Macy Grove Road interchange totaling 3,770-feet of 100-year and 500-year floodplain impacts.

No formal determination was made as to whether the proposed project will result in a modification to the existing Federal Emergency Management Agency (FEMA) floodplain. All applicable local and state regulations regarding the 100-year floodplain should be followed when constructing the project.

Stream Classification

Both proposed feasibility study alternatives are primarily located in the Cape Fear River Basin, with the exception of the small portion southwest of NC 66/Payne Road located in the Yadkin-Pee Dee River Basin. The New Location Alternative and the Hybrid Alternative are both located within the following watersheds: WS-III, Abbotts Creek, Protected; WS-III NSW, Reedy Fork, Protected; WS-IV, West Fork Deep River, Protected. A portion of the Hybrid Alternative extends into the East Fork Deep River (High Point Lake), Protected; WS-IV.

The proposed Hybrid Alternative will require the construction of a crossing over the West Fork Deep River as well as seven other unnamed stream crossings. The proposed New Location Alternative will also require the construction of a crossing over the West Fork Deep River, and fifteen other unnamed stream crossings. The locations of these streams are shown on **Figure 6**.

The portion of the West Fork Deep River within the project study area is listed in Category 5 on the North Carolina Department of Environment & Natural Resources' (NCDENR's) 2008 North Carolina Integrated Report Category 4 and 5 Impaired Waters List. Category 5 waters are also 303(d) water bodies, as Category 5 Assessments require Total Maximum Daily Load (TMDL) development per Section 303(d) of the 1972 Clean Water Act.

Wetlands

The proposed Hybrid Alternative is anticipated to cross approximately 0.60 acres of NWI wetlands, whereas the proposed New Location Alternative is anticipated to cross approximately 4.40 acres of NWI wetlands. Due to the proposed bridge structures over these wetlands, no impacts to NWI wetlands are expected due to either proposed alternative. These wetlands should be surveyed and delineated during preliminary design and subsequent environmental documentation phase. Proper permitting from the U.S. Army Corps of Engineers (USACE) should be obtained before construction of the project and appropriate mitigation measures should be taken, if necessary.

Threatened and Endangered Species

The North Carolina Natural Heritage Program (NCHNP) database was queried to determine the presence of protected species within the project study area. The project study area is located within the following USGS quadrangles: Kernersville, Guilford, Summerfield, and Belews Creek. **Table 12** summarizes the results of the NCHNP database query.

Table 12 – Potential State and Federally-Protected Species

Common Name	Scientific Name	Federal Status	State Status	USGS Quad Map
Crustacean:				
Greensboro Burrowing Crayfish	*Cambarus catagius*	N/A	Special Concern	Kernersville Guilford
Plant:				
Drummond Moss	*Orthotrichum strangulatum*	N/A	Significantly Rare – Peripheral	Kernersville Belews Creek
Appalachian Goldenbanner	*Thermopsis mollis*	N/A	Significantly Rare – Peripheral	Guilford
Purple Fringeless Orchid	*Platanthera peramoena*	N/A	Significantly Rare – Peripheral	Summerfield
Small-anthered Bittercress	*Cardamine micranthera*	Endangered	Endangered	Belews Creek
Granite Flatsedge	*Cyperus granitophilus*	N/A	Significantly Rare – Throughout	Belews Creek
Heller's Rabbit-Tobacco	*Pseudognaphalium helleri*	N/A	Significantly Rare – Peripheral	Belews Creek
Mammal:				
Loggerhead Shrike	*Lanius ludovicianus*	N/A	Special Concern	Kernersville Guilford Summerfield Belews Creek
Eastern Small-Footed Myotis	*Myotis leibii*	Species of Concern	Special Concern	Kernersville
Bald Eagle	*Haliaeetus leucocephalus*	N/A	Threatened	Guilford Summerfield
Carolina Darter – Eastern Piedmont Population	*Etheostoma collis pop. 2*	Species of Concern	Special Concern	Summerfield
Bog Turtle	*Glyptemys muhlenbergii*	Threatened due to Similarity of Appearance	Threatened	Belews Creek

Source: North Carolina Natural Heritage Program; Kernersville, Guilford, Summerfield, and Belews Creek USGS topographic quadrangles (August 2009); http://www.ncnhp.org

During the environmental study documentation, a survey for threatened and endangered species may be required, and if the species is found to be within the project study area, additional documentation may be required.

8. Mobility, Accessibility and Costs

In addition to comparing the community and environmental impacts for both the Hybrid and New Location Alternatives, other factors such as mobility, accessibility and costs were also compared between the Hybrid and New Location Alternatives.

Travel Time

Travel times for each alternative were compared between the US 311/NC 66 Interchange and the project terminus at NC 68 and the interchange with STIP I-5110/ Future I-73. As disclosed in Section 4.1.4, the New Location Alternative has a travel time savings of 3 minutes and 45 seconds over the Hybrid Alternative. This travel time difference can be attributed to the benefits of a limited access facility and the grade separation at Market Street interchange.

Planning Level Opinion of Probable Cost

A planning level opinion of probable cost was prepared for the proposed Hybrid and New Location Alternatives using the 2009 cost per mile spreadsheet obtained from NCDOT. The opinion of probable cost is used only for long-term planning projects and is based on the cost per mile for the type of roadway facility, bridge costs, utility costs, and right-of-way costs. Drainage, traffic signals, sidewalks, signing, and pavement markings are included in the per mile cost and the estimated contingency rather than explicitly itemized. The opinion of probable cost also includes consideration of general improvements required for intersecting roads. At the time of this assessment, costs of right-of-way land acquisition to be provided by NCDOT were pending.

Using an estimated 4% inflation rate, the opinion of probable cost for the project was projected out from the 2009 bases costs to assess construction costs for the current year (2011), ten year (2021), and design year (2035) planning horizon. Due to the large funding outlays for this project, it was broken into logical construction segments that could be matched with available funding in future years.

Future maintenance costs were also factored into the cost comparison between the New Location Alternative and Hybrid Alternative. The New Location Alternative introduces a new roadway to the local network between US 311 and I-40 that must be maintained in the future. Therefore, an estimate of probable additional maintenance costs of $60,500,000 for 50 years was determined for the New Location Alternative between US 311/NC66 and I-40, assuming 4% inflation over a 50-year term. All other segments of the project are new roadways north of I-40 for both the Hybrid and New Location Alternative, and were therefore not included in the maintenance cost differential comparison.

The planning level opinion of probable cost spreadsheets for the Hybrid Alternative and New Location Alternative are found in Appendix A (Tables 1 and 2, respectively). The construction of the Hybrid Alternative rather than the New Location Alternative would provide a cost savings of approximately $20 million, as the planning level opinion of probable cost for the Hybrid Alternative is approximately $180.52 million and the New Location Alternative is approximately $200.31 million.

9. Public Involvement and Stakeholder Involvement

A Citizens Informational Workshop was held on September 20, 2011 to obtain community feedback on the proposed High Point Airport Connector project. A mailing list was generated

based on Guilford County tax records, and 850 postcard notifications were mailed to residents, businesses, and churches in the vicinity of the project. The City of High Point also advertised the workshop in the Winston-Salem Journal, the High Point Enterprise, and on the HPMPO's project website.

Large board graphics of the proposed Hybrid Alternative and New Location Alternative were displayed for review. Detailed conceptual designs for the Hybrid and New Location Alternatives were shown within High Point's jurisdiction on the graphic displays, while the study corridor was displayed in the areas outside of High Point's jurisdiction. A project location map and an environmental comparison screening bar chart were also displayed on large boards at the workshop. Workshop attendees were provided a hand out showing the comparison of screening factors (see Table 13 below), as well as an environmental comparison screening bar chart.

The Citizens Informational Workshop was an "open house" style workshop with no formal presentation. Workshop attendees dropped in during the two hour time period to review the proposed alternatives, and City of High Point Department of Transportation staff and consultants were on-hand to answer questions and receive comments. More than 130 people attended the workshop, and twenty-eight (28) comment forms were received by the City of High Point during the comment period. Additionally, an electronic version of the comment form was available on the HPMPO's project website via Survey Monkey until November 1, 2011. Twenty-one (21) people completed a comment form via Survey Monkey during the comment period.

Based on the written comments received, the public seemed generally unsupportive of the new location portions of both the Hybrid and New Location Alternatives. Many residents feel that access to the airport can be improved by only widening existing infrastructure such as Johnson Street, Sandy Ridge Road, NC 66, and/or NC 68. Although the majority of attendees expressed their disapproval of the proposed project, some residents indicated their support for the proposed project. Some of these residents are in favor of the Hybrid Alternative due to its lower estimated cost and use of existing facilities, while some favor the New Location Alternative due to fewer impacted residences and businesses. A summary of the public workshop comments is included in Appendix E.

10. Alternative Recommendation

The High Point Airport Connector is an important component in the City's plan to improve system linkage, access, and connectivity by providing a north-south thoroughfare that will provide an alternate and more direct route to the Piedmont Triad International Airport and area(s) north of I-40. Additionally, by providing a north-south thoroughfare, it is believed that the High Point Airport Connector will enhance north-south transportation connectivity between US 311 (Future I-74), I-40, and Future I-73. Based on the analyses completed as part of this study, the construction of measures to enhance the north-south mobility in northern High Point and western Guilford County are feasible from an engineering and environmental perspective. **Table 13** summarizes the details of the two proposed alternatives in further detail as part of this study.

Table 13 –Screening of Feasibility Study Alternatives

Screening Factor	New Location Alternative	Hybrid Alternative
Total Business Properties Affected / Relocations	14 / 4	22 / 8
Total Residential Properties Affected / Relocations	124 / 44	188 / 68
Low-Income/Minority Populations	No	No
Major Utility Crossings	1	2
Voluntary Agricultural Districts (VADs)/Enhanced Voluntary Agricultural Districts (EVADs)	2	0
4(f) & 6(f) Parks/Recreation Properties	2	1
Schools, Libraries, Fire Stations, Community Centers	0	3
Church Properties Impacted / Relocations	1 /0	4/1
Cemetery Properties Impacted / Relocations	0/0	4/1
Properties on or potentially eligible for National Register of Historic Places	1	3
Hazardous Materials & UST sites	0	0
Streams (# of crossings)	16	8
NWI Wetlands / Ponds (acres)	4.40 / 1.67	0.63 / 0.18
Floodplains (ft)	3,770	2,130
Significant Natural Heritage Areas	0	0
Conservation Easements	1	0
Watersheds		
WS-III, Abbotts Creek, Protected	Yes	Yes
WS-III NSW, Reedy Fork, Protected	Yes	Yes
WS-IV, East Fork Deep River (High Point Lake), Protected	No	Yes
WS-IV, West Fork Deep River, Protected	Yes	Yes
303(d) Listed Streams	1	1
Planning Level Opinion of Probable Cost (Millions $)	$200.3	$180.5
Travel Time (min:sec)	11:03	14:48
Accessibility		
South of I-40	Medium	High
North of I-40	Low	Low

Based on the information outlined in this feasibility study, both the New Location Alternative and Hybrid Alternative satisfy the project Purpose & Need while providing similar benefits in terms of traffic operations. In contrast, the No Build Alternative will not keep pace with demand anticipated by the locally adopted Long Range Transportation Plans, provide direct access to Piedmont Triad International Airport, or increase connectivity of the local roadway network.

The New Location Alternative provides additional access to I-40 through a new interchange while marginally improving travel operations over the Hybrid Alternative. However, the Hybrid Alternative ranks higher in accessibility due to the proposed partial control of access south of I-40 allowing driveway access and traffic signals at major intersections. The New Location Alternative generally has fewer residential, business, church, cemetery, and historic property impacts, but greater impacts to natural resources than the Hybrid Alternative, due to of the rural route on new location.

The Hybrid Alternative maximizes the use of the existing infrastructure, including portions of the existing pavement, right-of-way, and utilities. As a boulevard, the Hybrid Alternative will maintain access to existing developments south of I-40, such as the Piedmont Triad Farmer's Market. This is consistent with the intent of the Heart of Triad Plan to maximize economic development using the existing roadway network, while also consistent with the Northwest Area Plan to increase connectivity of the existing roadway network in order to enhance future development.

The Hybrid Alternative saves approximately $20 million in direct comparison to the New Location Alternative since it allows for widening and improving the existing roadway corridor. The New Location Alternative segment from US 311 to I-40 will be a new roadway, whereas the Hybrid Alternative segment will widen an existing roadway, so the New Location Alternative will incur additional roadway maintenance costs in the future. For comparison purposes, the maintenance of this New Location segment was estimated at $82.7 million for the next 50 years assuming 4% inflation. In addition, the Hybrid Location overlaps a segment of the Johnson Street-Sandy Ridge Road Improvements Project U-4758, which is currently beginning planning and design, so this will further reduce the cost of the Hybrid Alternative.

In summary, the Hybrid Alternative is the recommended alternative over the New Location Alternative due to:

- Comparable traffic operations.
- Lesser natural resource impacts.
- Utilization of the existing corridor infrastructure.
- Consistency with development plans for the Piedmont Triad.
- Cost savings increasing project viability within a financially-constrained NCDOT STIP.

Appendix A – Planning Level Opinion of Probable Cost

New Location Alternative Planning Level Opinion of Probable Cost

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- New Location
STIP Proj. No. FS-0707B
Segment 1: From Sta. 22+40 to 303+00

US 311/NC 66 Interchange to I-40 Interchange
Typical Section: 4-Lane Divided Section with 46' or 70' median.

Date Revised: 6/21/11

SECTION	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL COST
1.0 ROADWAY					
1.01	4-lane divided with 46' median and shoulders (Sta. 22+40 to Sta. 250+20)	4.31	Miles	$ 4,100,000	$ 17,671,000
1.02	4-lane divided with 70' median and shoulders (Sta. 250+20 to Sta. 303+00)	1.00	Miles	$ 4,700,000	$ 4,700,000
1.03	2-Lane roadways with shoulders (Payne Rd., NC 66, Squire Davis Rd., Sandy Ridge Rd., and Bunker Hill Rd.)	1.95	Miles	$ 2,400,000	$ 4,680,000
1.04	See Section 4.03 for interchange (already includes Misc. and E&C costs)	1.00	Ea	$ 20,000,000	
SUBTOTAL ROADWAY					**$27,051,000**
2.0 STRUCTURES					
2.01	New bridges over water (Dual 42'X 240')	20,160	SF	$ 95.00	$ 1,915,200.00
2.02	New bridges over stream and wetland (Dual 42'X 740')	62,160	SF	$ 95.00	$ 5,905,200.00
2.03	New bridges over stream and wetland (Dual 42'X 1295')	108,780	SF	$ 95.00	$ 10,334,100.00
2.04	New bridge Bunker Hill Rd. over HP-Airport Connector (40'x515')	20,600	SF	$ 90.00	$ 1,854,000.00
2.05	New bridge Bunker Hill Rd. over stream and wetland (40'x555')	22,200	SF	$ 95.00	$ 2,109,000.00
	Bridges included with interchange cost				
SUBTOTAL STRUCTURES					**$22,117,500**
3.0 UTILITIES					
3.01	Water (assume 20% of project length)	7,667	LF	$ 70.00	$ 536,659
3.02	Sewer (assume 10% of project length)	3,833	LF	$ 46.00	$ 176,331
SUBTOTAL UTILITIES					**$712,990**
4.0 CONSTRUCTION COST SUMMARY					
	Subtotal Cost				$ 49,881,490
4.01	Contract Cost (30%)				$ 14,964,447
	Contract Cost Subtotal				$ 64,845,937
4.02	Engineering & Contingencies Cost (10%)				$ 6,484,594
4.03	Major flyover interchange with 3/4 clover (includes structures)				$ 20,000,000
4.04	Terrain Adjustment Factor (x 1.15)				$ 13,699,580
SUBTOTAL CONSTRUCTION COST					**$105,030,110**
5.0 ROW					
5.01	ROW	1.0	LS	$ 29,950,000	$ 29,950,000
SUBTOTAL ROW					**$29,950,000**
TOTAL PROJECT COST (2010)					**$134,980,110**
				SAY	**$135,000,000**

Notes:
1) The estimated costs to construct this facility are based on the planning-level cost per mile spreadsheet, provided by NCDOT for 2009 costs (dated May, 2010).
2) Conceptual horizontal and vertical alignments were developed so cost per mile can be calculated.
3) Proposed drainage and utilities elements are not developed and quantities are not calculated individually. These are estimated using the contingency percentages found in the Construction Cost Summary above.
4) Right-of-way costs were provided by NCDOT-R/W.
5) Environmental mitigation not included.
6) Cost of noise barriers not included.

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- New Location
STIP Proj. No. FS-0707B
Segment 2: From Sta. 303+00 to 421+50

I-40 Interchange to West Market Street Interchange
Typical Section: 4-Lane Divided Section with 70' median.

Date Revised: 6/21/11

SECTION	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL COST
1.0 ROADWAY					
1.01	4-lane divided with 70 'median	2.24	Miles	$ 4,700,000	$ 10,528,000
1.02	Upgrade existing curb & gutter roadway (W. Market St.)	0.95	Miles	$ 1,900,000	$ 1,805,000
1.04	2-lane roadway with shoulders (Beeson Rd.)	0.26	Miles	$ 2,400,000	$ 624,000
1.03	See Section 4.03 for interchange (already includes Misc. and E&C costs)	1.00	Ea	$ 12,500,000	
SUBTOTAL ROADWAY					**$12,957,000**
2.0 STRUCTURES					
2.01	New bridges over stream and wetlands (Dual 60'x660')	79,200	SF	$ 95.00	$ 7,524,000.00
2.02	New bridges over I-40 Business (Dual 42'x210')	17,640	SF	$ 90.00	$ 1,587,600.00
2.03	New bridge Beeson Road over Connector (40'x220')	8,800	SF	$ 90.00	$ 792,000.00
	Bridges included with interchange cost				
SUBTOTAL STRUCTURES					**$9,903,600**
3.0 UTILITIES					
3.01	Water (assume 20% of project length)	3,643	LF	$ 70.00	$ 255,024
3.02	Sewer (assume 10% of project length)	1,822	LF	$ 46.00	$ 83,794
SUBTOTAL UTILITIES					**$338,818**
4.0 CONSTRUCTION COST SUMMARY					
	Subtotal Cost				$ 23,199,418
4.01	Contract Cost (30%)				$ 6,959,825
	Contract Cost Subtotal				$ 30,159,243
4.02	Engineering & Contingencies Cost (10%)				$ 3,015,924
4.03	Half clover + 2 ramps interchange (includes structures)				$ 12,500,000
4.04	Terrain Adjustment Factor (x 1.15)				$ 6,851,275
SUBTOTAL CONSTRUCTION COST					**$52,526,442**
5.0 ROW					
5.01	ROW	1.0	LS	$ 10,450,000	$ 10,450,000
SUBTOTAL ROW					**$10,450,000**
TOTAL PROJECT COST (2010)					**$62,976,442**
				SAY	**$63,000,000**

Notes:
1) The estimated costs to construct this facility are based on the planning-level cost per mile spreadsheet, provided by NCDOT for 2009 costs (dated May, 2010).
2) Conceptual horizontal and vertical alignments were developed so cost per mile can be calculated.
3) Proposed drainage and utilities elements are not developed and quantities are not calculated individually. These are estimated using the contingency percentages found in the Construction Cost Summary above.
4) Right-of-way costs were provided by NCDOT-R/W.
5) Environmental mitigation not included.
6) Cost of noise barriers not included.

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- New Location
STIP Proj. No. FS-0707B
Segment 3: From Sta. 421+50 to 476+50

West Market Street Interchange to I-73/I-74 Connector
Typical Section: 4-Lane Divided Section with 70' median.

Date Revised: 6/21/11

SECTION	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL COST
1.0 ROADWAY					
1.01	4-lane divided with 70' median and shoulders	1.04	Miles	$ 4,700,000	$ 4,888,000
1.02	2-lane roadway with shoulders (Bunker Hill Rd. and Marshall Smith Rd.)	0.51	Miles	$ 2,400,000	$ 1,224,000
SUBTOTAL ROADWAY					**$6,112,000**
2.0 STRUCTURES					
2.01	New bridge Bunker Hill Road over Ramp BC, Airport Connector, Ramp BD, and Ramp A (40'x865')	34,600	SF	$ 90.00	$ 3,114,000.00
2.02	New bridge Marshall Smith Road over Airport Connector (40'x430')	17,200	SF	$ 90.00	$ 1,548,000.00
SUBTOTAL STRUCTURES					**$4,662,000**
3.0 UTILITIES					
SUBTOTAL UTILITIES					**$0**
4.0 CONSTRUCTION COST SUMMARY					
	Subtotal Cost				$ 10,774,000
4.01	Contract Cost (30%)				$ 3,232,200
	Contract Cost Subtotal				$ 14,006,200
4.02	Engineering & Contingencies Cost (10%)				$ 1,400,620
4.03	Terrain Adjustment Factor (x 1.15)				$ 2,311,023
SUBTOTAL CONSTRUCTION COST					**$17,717,843**
5.0 ROW					
5.01	ROW	1.0	LS	$ 19,475,000	$ 19,475,000
SUBTOTAL ROW					**$19,475,000**
TOTAL PROJECT COST (2010)					**$37,192,843**
				SAY	**$37,200,000**

Notes:

1) The estimated costs to construct this facility are based on the planning-level cost per mile spreadsheet, provided by NCDOT for 2009 costs (dated May, 2010).

2) Conceptual horizontal and vertical alignments were developed so cost per mile can be calculated.

3) Proposed drainage and utilities elements are not developed and quantities are not calculated individually. These are estimated using the contingency percentages found in the Construction Cost Summary above.

4) Right-of-way costs were provided by NCDOT-R/W.

5) Environmental mitigation not included.

6) Cost of noise barriers not included.

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- New Location
STIP Proj. No. FS-0707B
Segment 4: From Sta. 476+50 to 540+00

I-73/I-74 Connector Interchange to NC 68/I-73 Connector Interchange
Typical Section: 6-Lane Divided Section with 70' median.

Date Revised: 6/21/11

SECTION	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL COST
1.0 ROADWAY					
1.01	6-lane divided with 70' median and shoulders	1.20	Miles	$ 6,600,000	$ 7,920,000
SUBTOTAL ROADWAY					**$7,920,000**
2.0 STRUCTURES					
SUBTOTAL STRUCTURES					**$0**
3.0 UTILITIES					
SUBTOTAL UTILITIES					**$0**
4.0 CONSTRUCTION COST SUMMARY					
	Subtotal Cost				$ 7,920,000
4.01	Contract Cost (30%)				$ 2,376,000
	Contract Cost Subtotal				$ 10,296,000
4.02	Engineering & Contingencies Cost (10%)				$ 1,029,600
4.03	Terrain Adjustment Factor (x 1.15)				$ 1,698,840
SUBTOTAL CONSTRUCTION COST					**$13,024,440**
5.0 ROW					
5.01	ROW	1.0	LS	$ 13,175,000	$ 13,175,000
SUBTOTAL ROW					**$13,175,000**
TOTAL PROJECT COST (2010)					**$26,199,440**
				SAY	**$26,200,000**

Notes:
1) The estimated costs to construct this facility are based on the planning-level cost per mile spreadsheet, provided by NCDOT for 2009 costs (dated May, 2010).
2) Conceptual horizontal and vertical alignments were developed so cost per mile can be calculated.
3) Proposed drainage and utilities elements are not developed and quantities are not calculated individually. These are estimated using the contingency percentages found in the Construction Cost Summary above.
4) Right-of-way costs were provided by NCDOT-R/W.
5) Environmental mitigation not included.
6) Cost of noise barriers not included.

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- New Location
STIP Proj. No. FS-0707B

TABLE 1 - PLANNING-LEVEL ESTIMATE FOR PHASED APPROACH (New Location)

Date Revised: 4/6/11

	TOTAL COST SUMMARY			
	2009	2011	2021	2035
Segment 1	$135,000,000	$146,016,000	$216,139,350	$599,239,816
Segment 2	$63,000,000	$68,140,800	$100,865,030	$279,645,247
Segment 3	$37,200,000	$40,235,520	$59,558,399	$165,123,860
Segment 4	$26,200,000	$28,337,920	$41,947,044	$116,296,912
Total	$261,400,000	$282,730,240	$418,509,822	$1,160,305,836

Additional Maintenance Cost in Comparison to Upgrade Existing Concept (over 50 years in 2011 dollars): $82,700,000

Notes:
1) Costs assume a 4.0% rate of inflation.
2) Base costs use 2009 estimating costs escalated to current year (2011).
3) Maintenance Cost assumes $8,000 per lane-mile per year over a 50 year roadway life with inflation. Maintenance cost was added only for Airport Connector segment of new 4-lane roadway between US 311 and the West Market Street interchange in order to calculate maintenance cost differential cost with Upgrade Existing alternative. Figure used for comparison purposes only and does not represent total project mainteance cost.

Hybrid Alternative Planning Level Opinion of Probable Cost

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- Hybrid
STIP Proj. No. FS-0707B
Segment 1: From Sta. 22+55 to 198+00

US 311/NC 66 Interchange to Johnson Street
Typical Section: 4-Lane Divided Section with 30' median.

Date Revised: 4/26/11

SECTION	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL COST
1.0 ROADWAY					
1.01	4-lane curb and gutter divided with 30' median and sidewalks (widen from 2-lane to 4-lane)	2.57	Miles	$ 3,500,000	$ 8,995,000
1.02	4-lane curb and gutter divided with 30' median and sidewalks (new location)	0.76	Miles	$ 4,100,000	$ 3,116,000
1.03	Roadway Tie-ins (NC 66, Payne Rd., Dilworth Rd,, Twelve Oaks Dr., and Legacy Dr.)	1.61	Miles	$ 2,400,000	$ 3,864,000
1.04	Roadway Tie-ins for Johnson St. (4-Lane Divided section with turn lanes)	0.27	Miles	$ 4,100,000	$ 1,107,000
SUBTOTAL ROADWAY					**$17,082,000**
2.0 STRUCTURES					
2.01	New Bridges - Airport Connector over FEMA Reg. F.W. (Dual 45'X 1865') Sta. 160+35+/- to Sta. 179+00+/-	167,850	SF	$ 95.00	$ 15,945,750
2.02	New bridge - 12 Oaks over FEMA Reg. F.W. (40' X 490')	19,600	SF	$ 95.00	$ 1,862,000
SUBTOTAL STRUCTURES					**$17,807,750**
3.0 UTILITIES					
3.01	Water (assume 75% of project length)	20,632	LF	$ 70.00	$ 1,444,212
3.02	Sewer (assume 25% of project length)	6,877	LF	$ 46.00	$ 316,351
SUBTOTAL UTILITIES					**$1,760,563**
4.0 CONSTRUCTION COST SUMMARY					
	Subtotal Cost				$ 36,650,313
4.01	Contract Cost (30%)				$ 10,995,094
	Contract Cost Subtotal				$ 47,645,407
4.02	Engineering & Contingencies Cost (10%)				$ 4,764,541
4.03	Terrain Adjustment Factor (x 1.15)				$ 7,861,492
SUBTOTAL CONSTRUCTION COST					**$60,271,440**
5.0 ROW					
5.01	ROW	1.0	LS	$ 13,625,000	$ 13,625,000
SUBTOTAL ROW					**$13,625,000**
TOTAL PROJECT COST (2010)					**$73,896,440**
				SAY	**$73,900,000**

Notes:

1) The estimated costs to construct this facility are based on the planning-level cost per mile spreadsheet, provided by NCDOT for 2009 costs (dated May, 2010).

2) Conceptual horizontal and vertical alignments were developed so cost per mile can be calculated.

3) Proposed drainage and utilities elements are not developed and quantities are not calculated individually yet. These are estimated using the contingency percentages found in the Construction Cost Summary above.

4) Right-of-way costs were provided by NCDOT-R/W.

5) Environmental mitigation costs are not included.

6) This estimate does not account for noise barriers.

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- Hybrid
STIP Proj. No. FS-0707B
Segment 2: From Sta. 198+00 to 344+50

Johnson Street to I-40

Date Revised: 4/26/11

Typical Section: 6-Lane Divided Section with 30' median.

SECTION	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL COST
1.0 ROADWAY					
1.01	6-lane curb and gutter divided with 30' median and sidewalks (widen from 2-lane to 6-lane)	2.29	Miles	$ 4,300,000	$ 9,847,000
1.02	6-lane curb and gutter divided with 30' median and sidewalks (new location)	0.49	Miles	$ 5,300,000	$ 2,597,000
1.03	Roadway Tie-ins (The Links Dr., Bame Rd., Joe Dr., Sandy Camp Rd., Clinard Farms Rd., Gallimore Dairy Rd., Dairy Point Dr., National Service Rd., Norcross Rd., Endicott Rd.)	1.28	Miles	$ 2,400,000	$ 3,072,000
1.04	Roadway Tie-ins for Piedmont Pkwy. (4-Lane Divided section with turn lanes)	0.27	Miles	$ 4,100,000	$ 1,107,000
SUBTOTAL ROADWAY					**$16,623,000**
2.0 STRUCTURES					
SUBTOTAL STRUCTURES					**$0**
3.0 UTILITIES					
3.01	Water (assume 75% of project length)	17,147	LF	$ 70.00	$ 1,200,276
3.02	Sewer (assume 25% of project length)	5,716	LF	$ 46.00	$ 262,918
SUBTOTAL UTILITIES					**$1,463,194**
4.0 CONSTRUCTION COST SUMMARY					
	Subtotal Cost				$ 18,086,194
4.01	Contract Cost (30%)				$ 5,425,858
	Contract Cost Subtotal				$ 23,512,052
4.02	Engineering & Contingencies Cost (10%)				$ 2,351,205
4.03	Terrain Adjustment Factor (x 1.15)				$ 3,879,489
SUBTOTAL CONSTRUCTION COST					**$29,742,745**
5.0 ROW					
5.01	ROW	1.0	LS	$ 16,825,000	$ 16,825,000
SUBTOTAL ROW					**$16,825,000**
TOTAL PROJECT COST (2010)					**$46,567,745**
				SAY	**$46,600,000**

Notes:

1) The estimated costs to construct this facility are based on the planning-level cost per mile spreadsheet, provided by NCDOT for 2009 costs (dated May, 2010).

2) Conceptual horizontal and vertical alignments were developed so cost per mile can be calculated.

3) Proposed drainage and utilities elements are not developed and quantities are not calculated individually yet. These are estimated using the contingency percentages found in the Construction Cost Summary above.

4) Right-of-way costs were provided by NCDOT-R/W.

5) Environmental mitigation costs are not included.

6) This estimate does not account for noise barriers.

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- Hybrid
STIP Proj. No. FS-0707B
Segment 3: From Sta. 344+50 to 372+00

I-40/Sandy Ridge Road Interchange

Date Revised: 4/26/11

SECTION	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL COST
1.0 ROADWAY					
1.01	See Section 4.03 for interchange (already includes Mis. and E&C costs)	1.00	Ea	$ 15,000,000	
SUBTOTAL ROADWAY					**$0**
2.0 STRUCTURES					
	Bridges included with interchange cost				
SUBTOTAL STRUCTURES					**$0**
3.0 UTILITIES					
SUBTOTAL UTILITIES					**$0**
4.0 CONSTRUCTION COST SUMMARY					
	Subtotal Cost				$ -
4.01	Contract Cost (30%)				$ -
	Contract Cost Subtotal				$ -
4.02	Engineering & Contingencies Cost (10%)				$ -
4.03	3-level flyover interchange (includes structures)				$ 15,000,000
4.04	Terrain Adjustment Factor (x 1.15)				$ 2,250,000
SUBTOTAL CONSTRUCTION COST					**$17,250,000**
5.0 ROW					
5.01	ROW	1.0	LS	$ 17,125,000	$ 17,125,000
SUBTOTAL ROW					**$17,125,000**
TOTAL PROJECT COST (2010)					**$34,375,000**
				SAY	**$34,400,000**

Notes:

1) The estimated costs to construct this facility are based on the planning-level cost per mile spreadsheet, provided by NCDOT for 2009 costs (dated May, 2010).

2) Conceptual horizontal and vertical alignments were developed so cost per mile can be calculated.

3) Proposed drainage and utilities elements are not developed and quantities are not calculated individually yet. These are estimated using the contingency percentages found in the Construction Cost Summary above.

4) Right-of-way costs were provided by NCDOT-R/W.

5) Environmental mitigation costs are not included.

6) This estimate does not account for noise barriers.

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- Hybrid
STIP Proj. No. FS-0707B
Segment 4: From Sta. 372+00 to 405+00

I-40/Sandy Ridge Road Interchange to West Market Street Interchange

Date Revised: 4/26/11

Typical Section: 8-Lane Divided Section with 30' median.

SECTION	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL COST
1.0 ROADWAY					
1.01	8-lane divided with 30' median and curb & gutter	0.63	Miles	$ 6,500,000	$ 4,095,000
1.02	See Section 4.03 for interchange (already includes Mis. and E&C costs)	1.00	Ea	$ 12,500,000	
1.05	2-lane roadway with shoulders (Cider Road Extension, Little Santee Road Realignment)	0.70	Miles	$ 2,400,000	$ 1,680,000
1.06	Widen existing curb & gutter roadway for turn lanes (tie W. Market St. to 4-Lane R-2611 section)	2,000.00	LF	$ 300	$ 600,000
SUBTOTAL ROADWAY					**$6,375,000**
2.0 STRUCTURES					
2.01	New bridges over N.S. Railroad (Dual 80'x50')	8,000	SF	$ 105.00	$ 840,000.00
2.02	Anticipated retaining walls	24,000	SF	$ 85.00	$ 2,040,000.00
	Bridges included with interchange cost				
SUBTOTAL STRUCTURES					**$2,880,000**
3.0 UTILITIES					
3.01	Water (assume 75% of project length)	5,267	LF	$ 70.00	$ 368,676
3.02	Sewer (assume 25% of project length)	1,756	LF	$ 46.00	$ 80,758
SUBTOTAL UTILITIES					**$449,434**
4.0 CONSTRUCTION COST SUMMARY					
	Subtotal Cost				$ 9,704,434
4.01	Contract Cost (30%)				$ 2,911,330
	Contract Cost Subtotal				$ 12,615,764
4.02	Engineering & Contingencies Cost (10%)				$ 1,261,576
4.03	Half clover + 2 ramps interchange (includes structures)				$ 12,500,000
4.04	Terrain Adjustment Factor (x 1.15)				$ 3,956,601
SUBTOTAL CONSTRUCTION COST					**$30,333,941**
5.0 ROW					
5.01	ROW	1.0	LS	$ 11,175,000	$ 11,175,000
SUBTOTAL ROW					**$11,175,000**
TOTAL PROJECT COST (2010)					**$41,508,941**
				SAY	**$41,600,000**

Notes:

1) The estimated costs to construct this facility are based on the planning-level cost per mile spreadsheet, provided by NCDOT for 2009 costs (dated May, 2010).

2) Conceptual horizontal and vertical alignments were developed so cost per mile can be calculated.

3) Proposed drainage and utilities elements are not developed and quantities are not calculated individually yet. These are estimated using the contingency percentages found in the Construction Cost Summary above.

4) Right-of-way costs were provided by NCDOT-R/W.

5) Environmental mitigation costs are not included.

6) This estimate does not account for noise barriers.

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- Hybrid
STIP Proj. No. FS-0707B
Segment 5: From Sta. 405+00 to 521+00

Market Street Interchange to NC 68/I-73 Connector Interchange
Typical Section: 6-Lane Divided Section with 70' median.

Date Revised: 4/26/11

SECTION	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	SUBTOTAL COST
1.0 ROADWAY					
1.01	6-lane divided with 70' median and shoulders	2.20	Miles	$ 6,600,000	$ 14,520,000
1.02	2-lane Roadway with shoulders (Marshall Smith Road)	0.46	Miles	$ 2,400,000	$ 1,104,000
SUBTOTAL ROADWAY					**$15,624,000**
2.0 STRUCTURES					
2.01	New bridge Marshall Smith Road over Airport Connector (36'x580')	20,900	SF	$ 90.00	$ 1,881,000.00
SUBTOTAL STRUCTURES					**$1,881,000**
3.0 UTILITIES					
SUBTOTAL UTILITIES					**$0**
4.0 CONSTRUCTION COST SUMMARY					
	Subtotal Cost				$ 17,505,000
4.01	Contract Cost (30%)				$ 5,251,500
	Contract Cost Subtotal				$ 22,756,500
4.02	Engineering & Contingencies Cost (10%)				$ 2,275,650
4.03	Terrain Adjustment Factor (x 1.15)				$ 3,754,823
SUBTOTAL CONSTRUCTION COST					**$28,786,973**
5.0 ROW					
5.01	ROW	1.0	LS	$ 20,475,000	$ 20,475,000
SUBTOTAL ROW					**$20,475,000**
TOTAL PROJECT COST (2010)					**$49,261,973**
				SAY	**$49,300,000**

Notes:
1) The estimated costs to construct this facility are based on the planning-level cost per mile spreadsheet, provided by NCDOT for 2009 costs (dated May, 2010).
2) Conceptual horizontal and vertical alignments were developed so cost per mile can be calculated.
3) Proposed drainage and utilities elements are not developed and quantities are not calculated individually yet. These are estimated using the contingency percentages found in the Construction Cost Summary above.
4) Right-of-way costs were provided by NCDOT-R/W.
5) Environmental mitigation costs are not included.
6) This estimate does not account for noise barriers.

CITY OF HIGH POINT, NORTH CAROLINA
High Point Airport Connector- Hybrid
STIP Proj. No. FS-0707B

TABLE 2 - PLANNING-LEVEL ESTIMATE FOR PHASED APPROACH (Hybrid)

Date Revised: 4/26/11

	TOTAL COST SUMMARY			
	2009	2011	2021	2035
Segment 1	73,900,000	79,930,240	118,316,281	328,028,314
Segment 2	46,600,000	50,402,560	74,608,101	206,848,707
Segment 3	34,400,000	37,207,040	55,075,508	152,695,183
Segment 4	41,600,000	44,994,560	66,602,940	184,654,640
Segment 5	49,300,000	53,322,880	78,930,888	218,833,503
Total	245,800,000	265,857,280	393,533,719	1,091,060,346

Notes:
1) Costs assume a 4.0% rate of inflation.
2) Base costs use 2009 estimating costs escalated to current year (2011).

Appendix B – Proposed Design Criteria and Typical Sections

Table 1 – New Location and Hybrid Alternative Proposed Design Criteria

PROPOSED DESIGN CRITERIA

State Project: STIP Project FS-0707B
F. A. Project:
COUNTY: Forsyth/Guilford **DIVISION:** **DIVISION:** 7 & 9
PAGE: 1

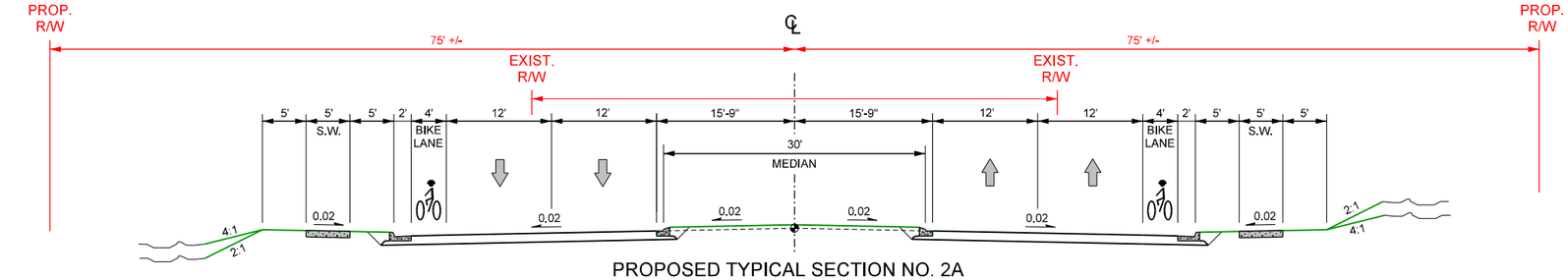
PROJECT DESCRIPTION: Airport Connector - US 311/NC 66 Interchange to NC 68/Future I-73 Interchange
DATE: 1/27/11

City of High Point, NC

PREPARED BY: HNTB

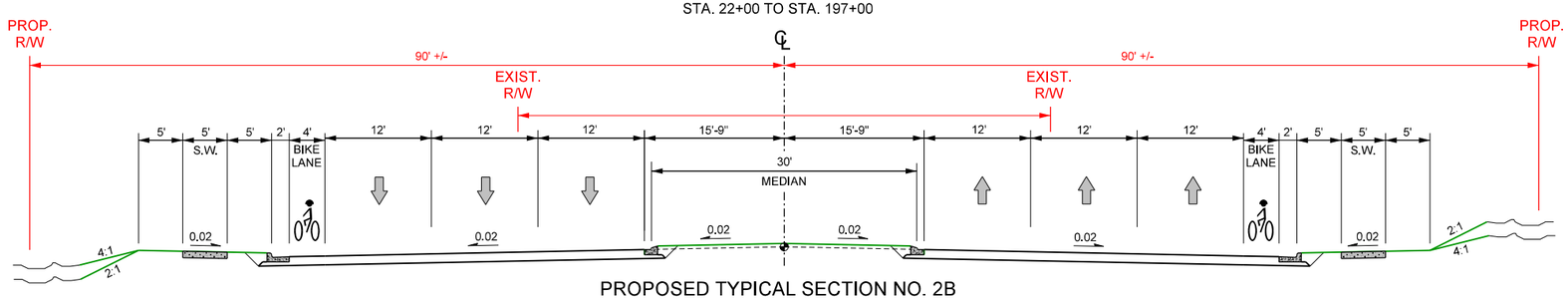
	Typical Section No. 1A	Typical Section Nos. 1B and 1C	Typical Section Nos. 2A and 2B	Typical Section Nos. 2C	Typical Section No. 2D			
ROUTE	**Airport Connector (New Location) Expressway Section South of I-40**	**Airport Connector (New Location) Freeway Section North of I-40**	**Airport Connector (Upgrade Existing Corridor) South of I-40**	**Airport Connector (Upgrade Existing Corridor) I-40 to Market St.**	**Airport Connector (Upgrade Existing Corridor) North of Market St.**	**Ramps**	**Loops**	**REFERENCE OR REMARKS**
LINE	-L-	-L-	-L-	-L-	-L-			
TRAFFIC DATA								
ADT BASE YR = 2009								
ADT DESIGN YR = 2035	<40,000	>40,000	>40,000	>40,000	>40,000			
TTST								
DUALS								
DHV								
DIR								
CLASSIFICATION	Expressway	Freeway	Boulevard	Boulevard	Freeway	Ramps	Loops	
TERRAIN TYPE	Rolling	Rolling	Rolling	Rolling	Rolling	Rolling	Rolling	
DESIGN SPEED mph	60	70	50	50	70	50	30-35	
POSTED SPEED mph	55	65	45	45	65	45	25-30	
PROP. R/W WIDTH ft	240'	350'	150'-180'	150'-180'	350'	100' from CL		
CONTROL OF ACCESS	Limited	Y	Partial	Y	Y	Y	Y	
RUMBLE STRIPS (Y/N)	N	Y	N	N	Y	Y	Y	
TYPICAL SECTION TYPE	4-Lane Median Divided	4 to 6-Lane Median Divided	Multi-lane Lane Median Divided	Multi-lane Lane Median Divided	6-Lane Median Divided			
LANE WIDTH ft	12'	12'	12'+4' bike lane outside	12'	12'	14'	16'	
SIDEWALKS (Y/N)	10' Multi-Use Path	N	Y	N	N	N	N	
BICYCLE LANES (Y/N)		N	Y	N	N	N	N	
MEDIAN WIDTH m or ft	46'	46'	30'	30'	46'	-	-	RDM I-6
MED. PROTECT. (GR/BARRIER)	N/A	N/A	Raised Median	Raised Median	N/A	-	-	
SHOULDER WIDTH (total)	12'	12'	12'	12'	12'	12' DES, 10' MIN. (INSIDE) 14'DES, 12' MIN.(OUTSIDE)	14' DES, 12' MIN. (INSIDE) 12'DES, 10' MIN.(OUTSIDE)	
BRIDGE CLEAR ROADWAY WIDTH								
MEDIAN m or ft	46'	70'	30'	30'	70'			
OUTSIDE w/o GR m or ft	12'	12'	12'	12'	12'	12'	12'	
OUTSIDE w/ GR m or ft	15'	15'	15'	15'	15'	15'	15'	
PAVED SHOULDER		-	-	-	-			
OUTSIDE TOTAL/FDPS m or ft	10' (4' full and 6' partial depth)	10' (4' full and 6' partial depth)	2'-6" C&G outside	2'-6" C&G outside	10' (4' full and 6' partial depth)	4' RT.	4' LT.	
MEDIAN TOTAL/FDPS m or ft	4'	4' for 4-lane, 10' for 6-lane	1'-6" C&G raised median	1'-6" C&G raised median	10'	4' LT	2'-6" C&G RT(INSIDE)	
GRADE								RDM I-12
MAX.	4% to 5%	4% to 5%	7%	7%	4% to 5%	5%	8%	2004 AASHTO, P.829
MIN.	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	
K VALUE								
SAG	136 (min.)	181 (min.)	96 (min.)	96 (min.)	181 (min.)	96 (min.)	49 (min.)	2004 AASHTO P.277
CREST	151 (min.)	247 (min.)	84 (min.)	84 (min.)	247 (min.)	84 (min.)	29 (min.)	2004 AASHTO P.272
HORIZ. ALIGN.								
MAX. SUPER.	0.08	0.08	0.04	0.04	0.08	0.08	0.08	
MIN. RADIUS ft	1200'	1810'	926'(0.04) or 833' (0.06)	926'(0.04) or 833' (0.06)	1810'	758'	250'-DES 230' MIN.	2004 AASHTO P.170
SPIRAL (Y/N)	Y	Y	Y	Y	Y	Y	Y	
CROSS SLOPES	(See Remarks)	(See Remarks)	(See Remarks)	(See Remarks)	(See Remarks)			
PAVEMENT	2%	2%	2%	2%	2%			RDM-P.1-4O
PAVED SHOULDER	4%	4%	4%	4%	4%			RDM-P.1-4O
TURF SHOULDER	8%	8%	8%	8%	8%			RDM-P.1-4O
MEDIAN DITCH	6:1	6:1	Raised Median	Raised Median	6:1	-	-	RDM-P.1-2B
DITCH TYPICAL (A,B,C)								
CLEAR ZONE ft	30'	30'	30'	30'	30'	30'	30'	
TYPICAL SECTION NO.	1	1	2	2	2			

NOTES:



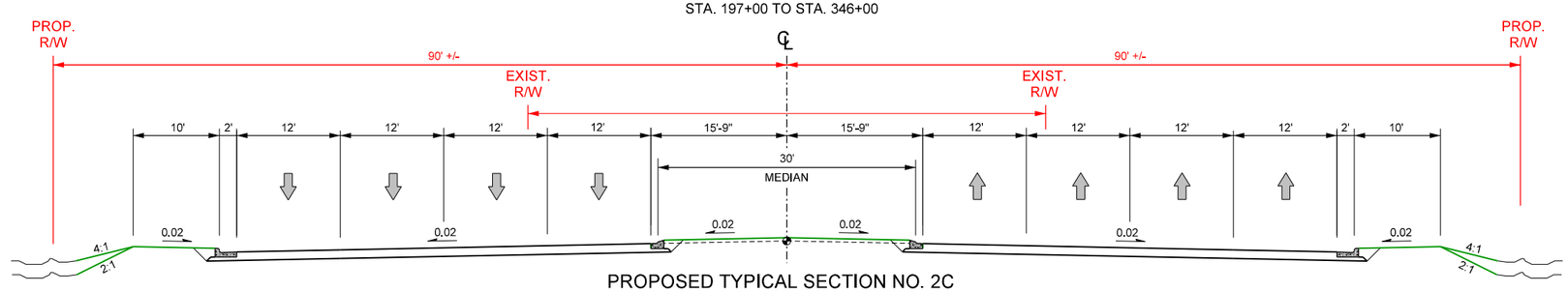
PROPOSED TYPICAL SECTION NO. 2A

AIRPORT CONNECTOR - HYBRID
NC 66 / US 311 TO JOHNSON ST.
STA. 22+00 TO STA. 197+00



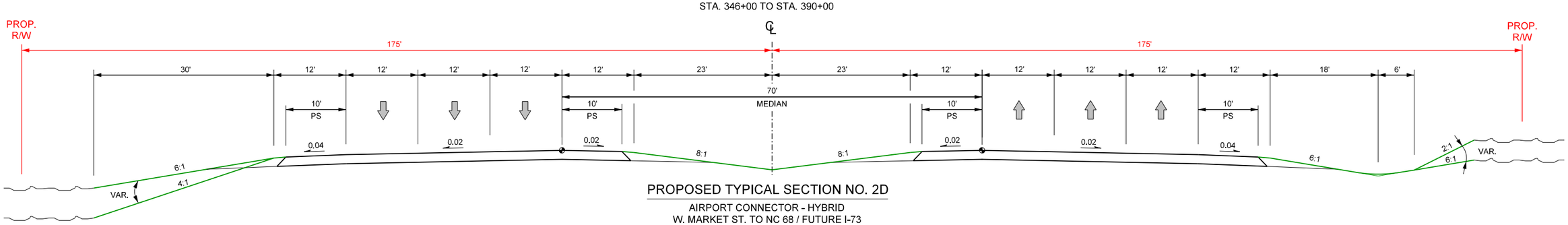
PROPOSED TYPICAL SECTION NO. 2B

AIRPORT CONNECTOR - HYBRID
JOHNSON ST. TO I-40
STA. 197+00 TO STA. 346+00



PROPOSED TYPICAL SECTION NO. 2C

AIRPORT CONNECTOR - HYBRID
I-40 TO W. MARKET ST.
STA. 346+00 TO STA. 390+00



PROPOSED TYPICAL SECTION NO. 2D

AIRPORT CONNECTOR - HYBRID
W. MARKET ST. TO NC 68 / FUTURE I-73
STA. 390+00 TO STA. 521+00

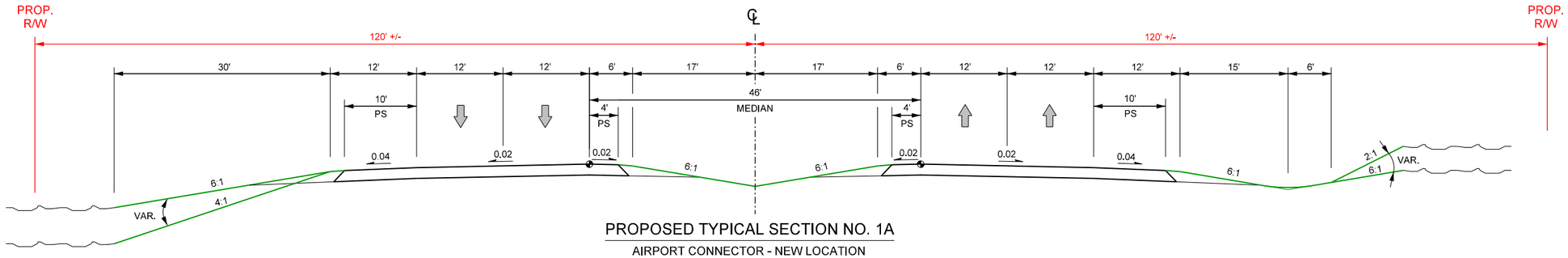
HIGH POINT
NORTH CAROLINA'S INTERNATIONAL CITY

AIRPORT CONNECTOR STUDY

HYBRID - PROPOSED TYPICAL SECTIONS

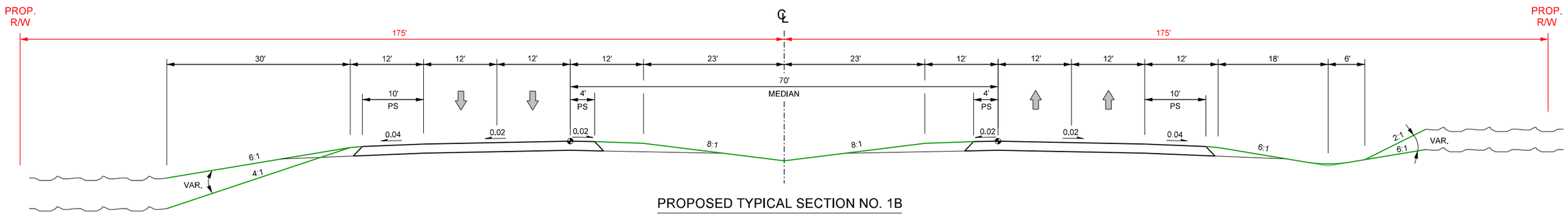
FEBRUARY 2011

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554



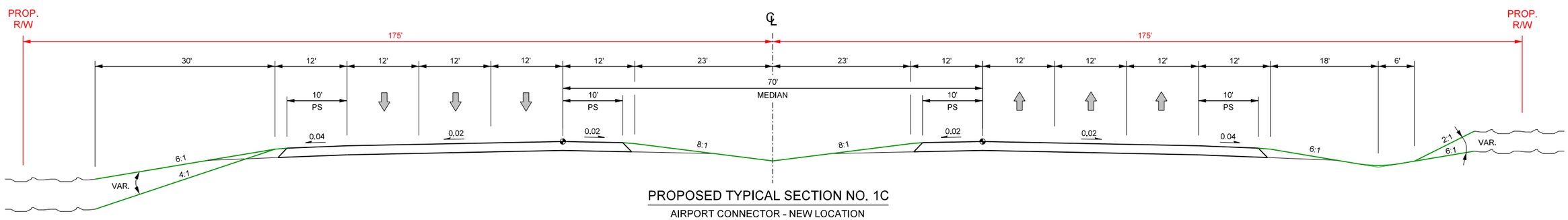
PROPOSED TYPICAL SECTION NO. 1A

AIRPORT CONNECTOR - NEW LOCATION
US 311 / NC 66 TO I-40
STA. 22+00 TO STA. 252+00



PROPOSED TYPICAL SECTION NO. 1B

AIRPORT CONNECTOR - NEW LOCATION
I-40 TO SANDY RIDGE RD. EXT.
STA. 252+00 TO STA. 465+00



PROPOSED TYPICAL SECTION NO. 1C

AIRPORT CONNECTOR - NEW LOCATION
SANDY RIDGE RD. EXT. TO NC 68 / FUTURE I-73
STA. 465+00 TO STA. 539+45

HIGH POINT
NORTH CAROLINA'S INTERNATIONAL CITY

AIRPORT CONNECTOR STUDY

NEW LOCATION - PROPOSED TYPICAL SECTIONS

FEBRUARY 2011

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
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Appendix C – NC SHPO Documentation

HNTB Corporation
Engineers Architects Planners

343 E. Six Forks Road
Suite 200
Raleigh, NC 27609

Telephone (919) 546-8997
Facsimile (919) 546-9421
www.hntb.com

Date
9/02/2009

To
Adin McCann, HNTB

From
Paige Dixon, HNTB

PROJECT CORRESPONDENCE

Subject
STIP FS-0707B Airport Connector
Summary of NC SHPO Inventory
on 9/01/2009

Paige Dixon visited the Survey and Planning Branch of the NC State Historic Preservation Office (SHPO) in Raleigh on 9/01/2009. Paige Dixon researched the appropriate quad maps with the assistance of Renee Shearin of the Survey and Planning Branch. The quad maps revealed that there are several study list (SL) and national register (NR) structures in the study area.

The following sites were identified in Guilford County:

- GF37 (NR) – Shaw-Cude House
- GF570(SL) – Freedom's Hill Church
- GF1544(SL) – Mendenhall House
- GF21(NR) – Beeson House
- GF177(NR) – Endsley-Morgan House (Reuben Starbuck House)

The following sites were identified in Forsyth County:

- FY365 (SL) – Idol House
- FY367 (SL) – Jun Idol House

The following files were available (copies were obtained) in the Survey and File Room with the assistance of Chandrea Burch of the Survey and Planning Branch:

- GF1544(SL) – Mendenhall House
- GF570(SL) – Freedom's Hill Church
- GF37(NR) – Shaw-Cude House
- GF177(NR) – Endsley-Morgan House (Reuben Starbuck House)
- GF21(NR) – Beeson House
- FY365(SL) – Idol House
- FY367(SL) – Jun Idol House
- GF1656 – Quaker School
- GF1744 – Beason Gray House / Farm

- GF1759 – Bud Idol Log House
- GF1758 – Sandy Ridge United Methodist Church Cemetery
- GF1760 – Lindsay-Ogburn-Reynolds House

Appendix D – Meeting Minutes and Telephone Logs from Local Official Meetings

HNTB

Project: STIP Project FS-0707B – Airport Connector

Subject: Preliminary Coordination Meeting Minutes

Meeting Date: 6/24/09

Meeting Location: NCDOT Roadway Design Conference Room

Present:

David Hyder	City of High Point
Derrick Lewis	NCDOT / Feasibility Studies Unit
Derrick Weaver	NCDOT / PD&EA
Michael Abuya	NCDOT / Transportation Planning Branch
Danny Gardner	NCDOT / Roadway Design
James Speer	NCDOT / Roadway Design
Pat Ivey	NCDOT / Division 9
Whit Webb	HNTB
Adin McCann	HNTB
Keith Lewis	MAB

The following items were discussed during the meeting:

Introductions

- Mr. Derrick Lewis asked that everyone in attendance introduce themselves.

Project Background and Overview

- Mr. McCann gave a brief overview of STIP Project FS-0707B. The High Point Metropolitan Planning Organization (HPMPO) 2035 Long Range Transportation Plan (LRTP) shows the project as a new location freeway/expressway extending between the NC 68/US 311 interchange to I-40 near Macy Grove Road. The HPMPO LRTP concept corridor basically follows the Forsyth/Guilford county line. The HPMPO 2035 LRTP calls this project the "Airport Connector."
- According to the Greensboro Urban Area MPO (GUMPO) 2035 LRTP, the I-40 Connector extends from I-40/Business 40 split to the interchange between the I-73/I-74 Connector and Sandy Ridge Road Extension (STIP Project FS-0707A).
- The NCDOT and the City of High Point initiated the environmental planning work for STIP Project U-2537 a few years ago. This project has been known locally as both the Westside Thoroughfare and, more recently, the North-South Connector. The termini for this project are I-85 and US 311. US 311 is also designated as Future I-74 by NCDOT and FHWA.
- During the environmental planning studies, the City of High Point requested that NCDOT extend the study area for STIP Project U-2537 from US 311 north to I-40. However, NCDOT has delayed STIP Project U-2537.
- During the scoping and negotiation of the municipal agreement for STIP Project FS-0707B, NCDOT requested that the feasibility study limits be extended north of I-40 to NC 68 at Bryan Boulevard.
- The primary purpose of today's meeting is to discuss this request, agree on the feasibility study process and timeline, and determine how to best coordinate with other roadway projects in various stages of development.
- MAB is currently working with NCDOT and the City of Greensboro on the Sandy Ridge Road Extension feasibility study (STIP Project FS-0707A).

- The termini for the Sandy Ridge Road Extension feasibility study (FS-0707A) are the I-40/Sandy Ridge Road interchange on the south and NC 68/Bryan Boulevard on the north.
- There are several alternatives under consideration in the FS-0707A feasibility study. These alternatives include:
    - Widen Sandy Ridge Road between I-40 and Market Street, new location between Market Street and I-73/I-74 Connector;
    - Widen Sandy Ridge Road between I-40 and Market Street, upgrade existing Sandy Ridge Road/Market Street/Pleasant Ridge Road; new location to Bryan Boulevard; and
    - Widen Sandy Ridge Road between I-40 and Market Street, upgrade existing Sandy Ridge Road/Market Street/NC 68 to Bryan Boulevard.
- MAB is also working with the City of Greensboro to complete a study of the roadway network in the area of the PTIA. This analysis included approximately 3500 model runs using the 2035 Existing + Committed (E+C) Triad Regional Travel Demand Model network.
- The primary purpose of the airport area transportation network study is to evaluate user benefits based on the reduction of delay as measured in vehicle-hours. The study will include a cost-benefit analysis for each of the modeling scenarios to determine the most effective transportation project expenditures. This data will be used to develop a prioritization list of future airport area roadway projects.
- Based on discussions with the City of High Point, the MAB airport area study and traffic forecasting for the Sandy Ridge Road Extension project do not include consideration of FS-0707B. The inclusion of this project may change traffic loadings on the design year network.
- Additionally, the Sandy Ridge Road Extension (FS-0707A) study being developed by MAB will not include consideration of the design and costs associated with a potential connection to the FS-0707B project.
- Preliminary results of the airport area study indicate that the I-40 Connector is at or near the bottom of the airport area project prioritization list due low user benefits relative to the estimated project costs.
- No estimated cost data was discussed for the I-40 Connector or the Sandy Ridge Road Extension project. However, it was noted that complex design components such as the planned interchanges (listed below) were major cost and project scope considerations. A few specific planned interchanges were mentioned during the meeting:
    - I-73/I-74 Connector and the Sandy Ridge Road Extension;
    - I-73/I-74 Connector, NC 68, and I-73 Connector; and
    - Sandy Ridge Road Extension and Bryan Boulevard
- Additionally, even with a southern terminus at I-40/Macy Grove Road, the I-40 Connector project would likely require modifications in the area of the I-40/Business 40 split that would increase the cost and complexity of the project.
- It was noted that the Johnson Street/Sandy Ridge Road improvements project (STIP Project U-4758) does not currently include improvements to the existing interchange at I-40. NCDOT indicated that the existing interchange may need to be improved under STIP Project U-4758. This would require completion of an Interchange Modification Report (IMR) in conjunction with the environmental document.
- It was noted that improvements to the existing NC 68/I-40 interchange were not feasible due to extremely high right-of-way acquisition costs.
- It was noted that access to the Kernersville Medical Center was a key factor in consideration of a new interchange at I-40/Macy Grove Road.
- MAB has recently been asked by the GUAMPO to downgrade the facility type for the I-73/I-74 Connector in the Triad Regional Travel Demand Model. Mr. Lewis indicated that the I-73/I-74 Connector is included in the 2035 horizon, but is not included on the 2035 Existing + Committed network.

- Mr. Lewis indicated that land uses in the area between I-40 and the I-73/I-74 connector are changing to light industrial and distribution-type facilities. North of the I-73/I-74 Connector, land use is becoming more residential in character.
- The PTIA is currently updating its master plan. NCDOT was provided with an earlier version of the draft master plan for review. Preliminary indications are that the plan will include a 3rd runway between Bryan Boulevard and NC 68, as well as a planned realignment of NC 68 to accommodate the new runway. It is believed the planned alignment would not affect the NC 68/I-73 Connector interchange. However, NC 68 would be realigned to the west between the I-73 Connector and Market Street or I-40.
- NCDOT noted that PTIA owns the necessary land to provide the required right-of-way for the I-73 Connector. However, they do not own the land necessary to construct the I-73 Connector interchange with NC 68.
- The attendees agreed that the FS-0707B feasibility study being developed by HNTB may provide further substantiation for removal of the I-40 Connector from the 2035 roadway network.
- The attendees agreed that the FS-0707B feasibility study termini would be the NC 68/US 311 Bypass on the south and the NC 68/I-73 Connector (STIP Project I-5110) interchange on the north.
- The attendees agreed that, in order to reduce duplication of effort, MAB will provide results from its airport area study to the City of High Point/HNTB for incorporation/reference in the FS-0707B feasibility study report. Also, when available, MAB will provide the City of High Point/HNTB with its project-level traffic forecast and analysis for FS-0707A.

FS-0707B Feasibility Study Scope Overview

- Mr. Hyder indicated that the FS-0707B feasibility study will consider three basic options:
    - Do nothing (i.e., No-Build)
    - New location facility (freeway or boulevard)
    - Upgrade existing
- Mr. Hyder indicated that upgrading NC 66 was considered in initial scoping but eliminated from further consideration early in the planning process because it does not meet the purpose and need of the project. Documentation of the alternative screening process will be included in the FS-0707B feasibility study report.
- Mr. McCann indicated that three scenarios will be evaluated to determine the most effective facility type and typical section. It is envisioned that one scenario each will be utilized for the new location freeway and upgrade existing options. The third modeling scenario will be used to either explore a different upgrade existing option or a different new location facility type (e.g., boulevard).
- Mr. Hyder noted that HNTB will be using the Triad Regional Travel Demand Model Version 2.0 for all modeling and traffic forecasting completed as part of the FS-0707B feasibility study. This is not the current model version approved by the HPMPO; however, it will be prior to the feasibility study completion. No concerns were noted with this approach. (In a letter dated July 10th, 2009 PART notified NCDOT that the Model Executive Committee had approved version 2.0 of the PTRM and it is now the official model for the Triad.)
- HNTB's design staff will evaluate two corridors at a conceptual design level to identify fatal flaw issues that would preclude project development. This will include a cursory evaluation of vertical alignment. Mr. Derrick Lewis noted that is standard process for all NCDOT feasibility studies.
- The design staff will use professional judgment to make alignment shifts targeted at minimizing impacts to adjacent properties and resources.
- The conceptual designs of the two corridors and the screening criteria will be presented to the public at a workshop to solicit input prior to screening.
- NCDOT suggested that the conceptual designs be reviewed by NCDOT prior to the public workshops. This consideration will need to be added to the project schedule.

- Once the selected corridor is identified, HNTB will develop a project-level traffic forecast. The traffic forecasting technical memorandum will be submitted to Transportation Planning Branch for review.
- Mr. McCann asked if NCDOT could provide information regarding conservation easements in GIS/CAD format. NCDOT indicated that this dataset did not currently exist and would likely require a property deed search to create.
- It was agreed by the attendees that right-of-way acquisition estimates for the FS-0707B study would be provided by NCDOT. This information will be requested by Mr. Derrick Lewis at the appropriate time. The construction cost estimates should also be coordinated with Mr. Doug Lane to ensure that the latest unit prices and estimating methodology is employed.
- NCDOT stated that it does not typically conduct public workshops for feasibility studies. On rare occasions, a workshop may be conducted. This is usually determined in close coordination with the NCDOT Division Engineer.

Coordination with Other Projects

- It was agreed by the attendees that the FS-0707B feasibility study should be coordinated with the following projects:
    - Sandy Ridge Road Extension (STIP Project FS-0707A) – Currently being studied by MAB for City of Greensboro and NCDOT. No-build projections and analysis are complete.
    - I-73/I-74 Connector (STIP Project I-4924) – Currently designated as a North Carolina Turnpike Authority candidate toll project.
    - Bryan Boulevard Relocation (STIP Project U-2815C)
    - West Market Street Widening (STIP Project R-2611)
    - Johnson Street/Sandy Ridge Road Widening (STIP Project U-4758)
    - I-73 Connector (STIP Project I-5110) – NCDOT FSU can provide a copy of the feasibility study that was completed for this project.
    - STIP Project R-2413 – Tony Houser is the Roadway Design Unit contact. Derrick Lewis can provide an Abobe PDF of design concept.

Stakeholder Coordination

- NCDOT indicated that FHWA could be invited to FS-0707B project meetings. However, FHWA does not typically provide project input at the feasibility study stage.
- Mr. Derrick Lewis is the main point of contact for NCDOT. He will facilitate all reviews and send invitations to all NCDOT staff when needed at a meeting.

Schedule

- The attendees agreed that it would be beneficial for NCDOT to review the concept designs for the two corridors prior to taking them to the local stakeholders and public for review and comment.
- The schedule will be updated to include this consideration and will be re-distributed to the attendees with the meeting minutes.

Next Steps

- No discussion.

Action Items/Follow-Up

- HNTB to update FS-0707B project schedule to allow for submittal of concept plans to NCDOT for review prior to stakeholder meetings and first public workshop.
- NCDOT to provide copy of feasibility study completed for STIP Project I-5110 (I-73 Connector)

- MAB to provide City of High Point/HNTB with results/data from airport area network study for incorporation/reference in FS-0707B feasibility study.
- MAB to provide City of High Point/HNTB with project-level traffic forecast and analysis for FS-0707A (Sandy Ridge Road Extension) when available.
- City of High Point to provide Triad Regional Travel Demand Model Version 2.0 for traffic modeling associated with FS-0707B.
- NCDOT to provide City of High Point/HNTB with STIP Project I-5110 feasibility study.
- NCDOT to provide HNTB with Adobe PDF of design concept for STIP Project R-2413.

The foregoing constitutes our understanding of the matters discussed and the conclusions reached. If there are any questions, corrections, omissions, or additional comments please advise Adin McCann (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File

HNTB

Project: STIP Project FS-0707B – Airport Connector

Subject: Design Concept Plan Review Meeting

Meeting Date: 9/3/09

Meeting Location: HNTB Raleigh Conference Room

Present:

David Hyder	City of High Point
Whit Webb	HNTB
Anne Redmond	HNTB
Enrico Roque	HNTB
Phillip Rogers	HNTB
Adin McCann	HNTB

The following items were discussed during the meeting:

Updated Travel Demand Model Runs

- HNTB provided Mr. Hyder with a packet of figures showing raw model data for the following scenarios:
    - 2035 New Location Freeway (Dated 8/20/09)
    - 2035 New Location Expressway (Dated 8/20/09)
    - 2035 New Location Expressway (Dated 8/25/09)
    - 2035 Upgrade Existing (Dated 8/20/09)
    - 2035 Upgrade Existing (Dated 8/25/09)
- The figures dated 8/25/09 included changes made to the Piedmont Triad Regional Model (PTRM) coding at the termini to address discrepancies with the North-South Connector, Pleasant Ridge Road, and Regional Road. These model changes were discussed and confirmed with Mr. Hyder during a conference call on 8/20/09.
- Mr. McCann stated that HNTB had completed travel demand model runs for six (6) initial scenarios:
    - 2035 No-Build
    - 2035 Upgrade NC 66
    - 2035 Upgrade Squire Davis/Sandy Ridge Road (without Sandy Ridge Rd. Ext.)
    - 2035 Upgrade Squire Davis/Sandy Ridge Road (with Sandy Ridge Rd. Ext.)
    - 2035 New Location Freeway
    - 2035 New Location Expressway
- Mr. McCann indicated that several various measures of effectiveness were extracted from the travel demand model for the six initial model scenarios to differentiate between alternatives. These parameters included VMT, VHT, Average Travel Speed, Travel Time, and Route Length. Although these parameters provided good comparative data between the new location and the upgrade existing alternatives, there was not much differentiation between the non-new location options.
- Mr. Hyder suggested that this data could be presented graphically (bar charts, etc.) to help more clearly communicate.
- After reviewing the figures showing the raw model data, it was noted that HNTB would need to confirm network coding for a link of Sandy Ridge Road between National Service Road and Tyner Road.
    - Note: Following the meeting, HNTB reviewed the PTRM network in this area. Based on a cursory review of the model, it appeared that traffic was using National Service Road as

an alternative route between Sandy Ridge Road and NC 68. Using National Service Road allows the traffic to avoid using a heavily congested section of I-40 to get to NC 68. HNTB made no changes to the model in this area.

- As previously discussed with High Point, HNTB suggested that it may be appropriate to consider downgrading the facility to an expressway or arterial/boulevard type facility. HNTB felt there may be some difficulty substantiating a new location freeway facility when anticipated 2035 traffic volumes were lower than those seen on an existing arterial immediately east (Johnson Street/Sandy Ridge).
- Mr. Hyder indicated that the future land use assumptions for the Heard of the Triad (HOT) study may be less dense that what is currently considered in the model.
- Mr. Hyder agreed with the proposed approach to scale-down the facility type for the new location alternative. Additionally, Mr. Hyder indicated that he had discussed this option with Mr. Mark McDonald and that he also agreed with the proposed approach.
- Mr. Hyder stated that he would discuss the new location expressway concept with Mayor Smothers. Mr. Hyder will let HNTB know if any issues arise from this discussion.
- Mr. McCann stated that accommodations for turning movements on the new location expressway option, if selected for further study, would be evaluated in the next stage of the study. This is when the traffic projections and peak hour turning movements will be developed. For the initial submittal to NCDOT, the new location expressway would show at-grade intersections with adjacent roadways and no median breaks or median crossovers.

NCLOS Analysis Results

- HNTB provided Mr. Hyder with a table of draft results from the NCLOS analysis. These results were used as a guide in determining typical sections for both the new location and upgrade existing alternatives. Mr. McCann stated that some segments deviated slightly from the NCLOS analysis results when other factors (future land use, continuity with adjacent projects, etc.) were considered.
- Mr. Hyder stated that he would review this data and let HNTB know if he had any questions.
- Mr. Hyder suggested that the NCLOS results might be clearer on a color-coded figure.
- Mr. Hyder stated that I-40 serves as a barrier for travel between the Piedmont Triad International Airport and areas south, including High Point. Mr. Hyder stated that a component of the purpose and need for the Airport Connector project is to address this transportation deficiency by enhancing and/or expanding transportation connectivity across I-40. Mr. Hyder stated that this point should be explicit in the final feasibility study report for the Airport Connector project.

Typical Sections and Design Criteria

- Mr. McCann briefly reviewed the design criteria and typical sections. Mr. McCann noted that the recommended median width for the new location segments north of I-40 was 70-feet. The primary reason for this recommendation was consistency with adjacent projects. The Winston-Salem Outer Loop proposes a median width that varies between 46 feet to 70 feet. The I-73 Connector Feasibility Study recently completed by NCDOT (FS-0507A) identified a six-lane typical section with a 70-foot median as the preferred alternative.
- Mr. Hyder stated that the typical section recommendations developed by HNTB seemed reasonable.

Upgrade Existing Design Concept Plan

- The new location design concept plans were reviewed. Key items discussed during this review included the following:
    - High Point obtained a greenway easement when the sewer and water utilities were constructed to serve the FedEx ground facility. This greenway easement is documented in a greenway plan that was developed, but has not yet been adopted by High Point. Mr.

Hyder indicated that Mr. Alan Oliver is the contact for the High Point Parks & Recreation Department.

- Mr. Hyder will work with Mr. Oliver to obtain the greenway easement information for HNTB, as well as to identify a transportation corridor for identification in the appropriate parks master plan prior to programming of any transportation improvements. HNTB will provide information to Mr. Hyder as needed to assist with this task.
- It was decided that the concept plans will show control of access limits. However, when discussing with NCDOT Right of Way Branch staff, it will need to be pointed out that access will be provided to adjacent properties as much as possible to avoid complete acquisitions due to "land locking" parcels.
- The proposed alignment in the area of Sandy Ridge Road, Johnson Street, and Future Piedmont Parkway was discussed at length. However, no alternative options were identified for the transportation network configuration in this area.
- Mr. Hyder thinks the City has studied realignment of the Farmer's Market entrance on Sandy Ridge Road to accommodate the D.H. Griffin development plans. Mr. Hyder will provide this information to HNTB for inclusion on the concept design plans.
- HNTB believes it has developed an alternative alignment which minimizes impacts to the adjacent cemeteries and churches in the area of the Sandy Ridge Road/Sandy Camp Road intersection and to the north. This alternative alignment would require some acquisition of right-of-way in the area of the Farmer's Market entrance.
- Mr. Hyder indicated that Mr. McDonald was very supportive of the new location alignment considered in the Sandy Ridge Road widening feasibility study.
- Mr. Hyder indicated that he would review the alternative alignment developed by HNTB in the area between Sandy Camp Road and I-40 with Mr. Mark McDonald. Mr. Hyder will let HNTB know the results of this discussion.
- The upgrade existing design concept will show Triad Drive on the west side of Sandy Ridge Road being cut-off from Sandy Ridge Road. Traffic wishing to access Sandy Ridge Road will have to travel north to Farrington Road. The upgrade existing concept will show Triad Drive east of Sandy Ridge Road being re-aligned with Farrington Road to provide additional spacing between signalized intersections.
- The Triad Drive/Farrington Road network modifications should be included in the upgrade existing concept design plans. However, they should be broken-out separately for cost-estimating purposes.
- The upgrade existing corridor was developed assuming that a single point urban interchange (SPUI) would be constructed at the I-40/Sandy Ridge Road interchange.
- During the meeting, the quadrant turning movements at the I-40/Sandy Ridge Road interchange were reviewed. This information showed that approximately 14,600 vehicles make the move from I-40 eastbound to Sandy Ridge Road Extension northbound in the course of a day. Assuming a 10% peak hour volume and a 60% directional split, this would equate to approximately 875 vehicles in the peak hour. NCDOT typically considers implementation of a flyover when peak hour volumes reach 1000 vehicles.
- During the review of the new location concept plans it was decided that HNTB should re-run the travel demand model to consider a scenario in which the I-40 Connector was not constructed. It was believed that removal of the I-40 Connector from the network would change the distribution of traffic along the existing I-40 interchanges in the project study area (NC 66, Sandy Ridge Road, and NC 68). Depending on the re-distribution of traffic, the upgrade existing option may need to include consideration of additional improvements to the I-40/Sandy Ridge Road interchange.
- HNTB will evaluate the effort required to complete this assessment and will discuss approach with High Point prior to undertaking this work.

New Location Design Concept Plan

- The new location design concept plans were reviewed. Key items discussed during this review included the following:

- HNTB will revise the concept plans to consider a bridge over the pond in the area immediately north of US 311.
- HNTB will remove all turn-lane arrows from the design concept plans. In general, only through laneage will be shown on the concept plans.
- HNTB indicated that accommodations for intersection turning movements will be considered in the next stage of the project if the new location corridor is selected for additional analysis. This is when the traffic projections and peak hour turning movements will be developed.
- HNTB noted that the proposed interchange with I-40 does not include access to/from Macy Grove Road. Mr. Hyder indicated that this topic will likely require further discussion with the Town of Kernersville.
- Mr. Hyder noted that Kernersville had been planning an interchange at NC 66/Business 40 for several years.
- HNTB noted that the new location alignment traverses directly through the Triad Business Park development. Portions of this development are currently under development (e.g., FedEx Ground Facility).
- HNTB has contacted the Town of Kernersville to obtain the approved site plans for both the Triad Business Park and the Kernersville Medical Center. Once this data is obtained, the information from the approved site plan will be shown on the concept design plans.

Corridor Screening

- Mr. McCann stated that HNTB was currently developing the documentation of the corridor screening process. It is believed that the initial project concepts discussed in the report will include the following:
  - No-Build
  - Widen NC 66
  - Widen Squire Davis Road/Sandy Ridge Road
  - Hybrid Alternative (widening and new location)
  - New Location Freeway
  - New Location Expressway
- The screening process will likely be multi-tiered and both qualitative and quantitative in nature.
- The initial concepts will likely be screened on several criteria, including the following:
  - Consistency with adopted transportation plans
  - Enhances mobility/increase capacity
  - Provides more direct connection to PTIA
- After screening of the initial concepts is complete (Tier 1), the corridor alternatives will be screened primarily on anticipated construction costs and impacts.

Schedule

- Mr. McCann asked if High Point would want to meet with NCDOT Division staff prior to submitting the design concept plans to NCDOT Feasibility Studies Unit and Roadway Design Unit for review. Mr. Hyder liked this idea and indicated that he would coordinate with Division 7 and Division 9 to coordinate a feasible meeting time.
- HNTB will provide Mr. Hyder with an estimate as to when the updated concept plans will be ready for discussion. HNTB will also confirm the level of effort and proposed scope modifications with High Point prior to engaging in a more detailed evaluation of the I-40/Sandy Ridge Road interchange.
- Mr. McCann stated that HNTB is still working toward conducting the first public workshop in early December. Mr. Hyder agreed with this approach and felt that completion of a workshop in early December was feasible from the City's perspective.

Next Steps

- Mr. Hyder indicated that stakeholder coordination meetings will be conducted with PART, Winston-Salem, Kernersville, and Greensboro. These meetings will be coordinated and consolidated to reduce the number of meetings.

Action Items/Follow-Up

- HNTB will confirm the coding of the network in the area of Sandy Ridge Road between Tyner Road and National Service Road to ensure correct.
- Mr. Hyder stated that he would discuss the new location expressway concept with Mayor Smothers. Mr. Hyder will let HNTB know if any issues arise from this discussion.
- Mr. Hyder will review the draft NCLOS results and let HNTB know if there are any questions.
- Mr. Hyder will provide HNTB with greenway easement information in the area of Sandy Ridge Road/Squire Davis Road.
- Mr. Hyder will coordinate with the Parks & Recreation Department to ensure that a future transportation corridor is identified in the appropriate reference documents.
- Mr. Hyder will provide HNTB with any existing information regarding the possible realignment of the Farmer's Market entrance with the D.H. Griffin property on Sandy Ridge Road.
- Mr. Hyder will review the alternative alignment developed for the upgrade existing corridor in the area between Sandy Camp Road and I-40 with Mr. Mark McDonald. Mr. Hyder will let HNTB know the results of this discussion.
- HNTB will develop an estimate of the level of effort associated with evaluating the I-40/Sandy Ridge Road interchange in further detail. This effort will be reviewed with High Point prior to initiating any work.
- HNTB will provide High Point with an estimate of when the updated design concept plans will be ready for review with NCDOT Division 7 and Division 9.
- Mr. Hyder will schedule a meeting(s) with NCDOT Division 7 and Division 9 to review the revised concept design plans.
- HNTB will revise the design concept plans to address all comments discussed during the meeting.

The foregoing constitutes our understanding of the matters discussed and the conclusions reached. If there are any questions, corrections, omissions, or additional comments please advise Adin McCann (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File

HNTB

Project: STIP Project FS-0707B – Airport Connector

Subject: Design Concept Plan Review Meeting Minutes

Meeting Date: 10/21/09

Meeting Location: High Point DOT Conference Room

Present:

David Hyder	City of High Point
Mike Mills	NCDOT / Division 7
Whit Webb	HNTB
Adin McCann	HNTB
Phillip Rogers	HNTB
Bradley Reynolds	HNTB
Adin McCann	HNTB

The following items were discussed during the meeting:

Introductions

- Introductions were conducted around the room.

Meeting Purpose

- HNTB is currently developing the feasibility study for the High Point Airport Connector project. This project is identified as STIP Project FS-0707B.
- The purpose of today's meeting is to provide a status update on the feasibility study, share the findings and conclusions of the study to date, and to obtain NCDOT Division 7 input and consensus on the design concepts and direction of the feasibility study.

Project Background and Overview

- A project study area map was provided for the meeting attendees to view.
- The High Point Airport Connector project, as defined in the MPO-adopted 2035 Long Range Transportation Plan would extend between US 311/NC 68 and I-40. However, at the request of NCDOT, the study area was extended north of I-40 to NC 68 near Piedmont Triad International Airport (PTIA). The extension of the project study area created some overlap between other planned transportation projects, including: Sandy Ridge Road Widening and Extension (STIP Project FS-0707A), the I-40 Connector, and the I-73/I-74 Connector (Winston-Salem Airport Connector).
- The purpose of the project is to improve mobility, connectivity, and access between High Point and the Piedmont Triad International Airport (PTIA). Due to the limited number of crossings, I-40 also serves as a barrier to travel between High Point, PTIA, and areas north of I-40. Consequently, an additional purpose of the Airport Connector project is to improve mobility across I-40.
- The proposed termini for the project are the US 311/NC 66 interchange and NC 68/I-73 Connector interchange. The I-73 Connector is identified as STIP Project I-5110.
- US 311 is also designated as Future I-74.
- As part of the feasibility study, HNTB developed four initial concepts intended to meet the purpose and need of the project. To provide consistency and eliminate duplication of effort, these initial concepts were developed utilizing MPO-adopted long range transportation plans and other prior studies completed in the project area.

- One of the initial concepts included widening existing NC 66 between US 311 and I-40. However, based on a qualitative screening, it was determined that this route would not meet the purpose and need of the project. Upon reaching I-40, traffic wishing to continue to PTIA and surrounding areas would need to utilize already congested segments of I-40 and NC 68. Additionally, widening existing NC 66 to I-40 would not improve mobility across I-40. Consequently, widening of existing NC 66 was eliminated from further consideration early in the study.
- Using qualitative screening criteria, the four initial concepts were reduced to two feasibility study concepts: New Location Alternative and Hybrid Alternative. The Hybrid Alternative is a combination of widening existing facilities (NC 66, Squire Davis Road, and Sandy Ridge Road) and new location segments (Sandy Ridge Road between West Market Street and the northern terminus at NC 68). During the meeting and in the information provided to the meeting attendees, the Hybrid Alternative was referred to as the Upgrade Alternative.
- The two feasibility study concepts will be comparatively evaluated based on costs and a GIS screening of environmental constraints. One alternative will be selected for further study. This additional study will include traffic forecasting, capacity analysis, access management recommendations, and development of additional design details such as intersection geometry. A feasibility study report will be developed to document the evaluation of alternatives, the alternative screening process, and the corresponding results. Opinions of probable cost will also be developed for each feasibility study alternative.

Traffic Modeling

- The concepts evaluated in this feasibility study were intended to build upon prior planning efforts. However, as the study progressed from traffic modeling to concept design, it became apparent that several core assumptions needed to be re-assessed or revised. One particular example of this was the I-40 Connector project planned to extend between the I-40/Business 40 split and the Sandy Ridge Road Extension.
- The segment of the New Location Alternative between I-40 and Sandy Ridge Road Extension is basically the I-40 Connector.
- For the Upgrade Alternative, a feasible design concept to modify the I-40/Business 40 split was not identified to accommodate the planned I-40 Connector. Consequently, the decision was made to look at the Macy Grove Road area to provide this connection point. However, this change still does not result in a feasible design concept for the I-40 Connector in the Upgrade Alternative.
- Although an opportunity may exist to modify the I-40 Connector alignment such that it would have an interchange with the planned I-73/I-74 Connector, this assessment is beyond the scope of this study. Additionally, it was believed that elimination of the I-40 Connector from the design year transportation network would provide a "worst case" assessment of traffic along I-40 for the purposes of this study. Consequently, the traffic modeling for this study was completed without the I-40 Connector in the design year (2035) model network. All other projects from the MPO-adopted LRTPs remained in the design year model network.
- Two figures were provided to each attendee to show the projected daily traffic volumes data for both the New Location and Upgrade Alternatives without the I-40 Connector. The traffic volumes contained on the figures were extracted directly from the regional travel demand model and are not the product of a project-level traffic forecast.
- North Carolina Level of Service (NCLOS) was utilized to develop a planning-level estimate of capacity required to accommodate design year (2035) traffic for both alternatives. This information was used to develop proposed typical sections for each feasibility study alternative.
- The typical sections and recommended facility types will be re-confirmed once the project-level traffic forecast and analysis is completed.
- A figure showing the breakout of traffic at the I-40/Sandy Ridge Road for the No-Build, Upgrade and New Location Alternatives was also provided to each attendee.

- The following points were discussed regarding the New Location Alternative:

- According to the HPMPO 2035 LRTP, the High Point Airport Connector between US 311 and I-40 is currently planned as a freeway/expressway facility. However, after reviewing the projected daily traffic volumes for these segments, it is believed that a freeway facility is not warranted. Consequently, the proposed functional classification of the New Location Alternative between US 311 and I-40 is an expressway or boulevard.
- North of I-40 (outside HPMPO), the proposed New Location Alternative would be a freeway/expressway with interchanges at I-40, Sandy Ridge Road/I-73/I-74 Connector and NC 68/I-73 Connector.
- A "Superstreet" concept (or something similar) might be possible; however, this determination cannot be made until the detailed traffic forecasting and analysis is completed to determine how best to accommodate the peak hour turning movements.
- The New Location Alternative would have limited control of access (i.e., no driveway connections).
- Based on travel demand model output, projected design year (2035) traffic in northwest quadrant of the I-40/High Point Airport Connector interchange is approximately 25,000 vehicles per day. This is approximately 1,500 vehicles in the peak hour.
- In general, the capacity of a loop ramp is approximated at 800 to 1,200 vehicles in the peak hour depending on several factors (*e.g., truck traffic, design speed, etc.*). If this threshold is exceeded, it is recommended that a directional ramp be evaluated.
- A flyover from eastbound I-40 to northbound High Point Airport Connector was incorporated as part of the New Location Alternative design concept plans.
- The preliminary interchange configuration is based on raw model output volumes and is provided for corridor selection discussions only. Detailed traffic forecasting and analysis is required before geometric recommendations can be determined.

- The following points were discussed regarding the Upgrade Alternative:

  - The Upgrade Alternative would be classified as a boulevard facility with partial control of access (*i.e., consolidation of driveways and/or driveway movements limited to right-in/right-out only*).
  - The I-40 widening feasibility study (STIP Project FS-0609A) completed by NCDOT in July 2009 recommended improvements to the I-40/Sandy Ridge Road interchange to serve design year (2035) traffic. The study evaluated a single point urban interchange (SPUI) and a diamond with loop ramps.
  - The I-40 widening feasibility study concluded that the SPUI could not provide acceptable traffic operations in the 2035 design year; consequently, the diamond with loop ramps was identified as the preferred interchange improvement concept.
  - Based on travel demand model output, it was determined that projected design year (2035) traffic in the northwest quadrant of the I-40/Sandy Ridge Road interchange is approximately 25,000 vehicles per day in the No-Build and Upgrade Existing scenarios. This is approximately 1,500 vehicles in the peak hour.
  - In general, the capacity of a loop ramp is approximated at 800 to 1,200 vehicles in the peak hour depending on several factors (e.g., truck traffic, design speed, etc.). If this threshold is exceeded, it is recommended that a directional ramp be evaluated.
  - A flyover from eastbound I-40 to northbound Sandy Ridge Road was incorporated as part of the Upgrade Alternative design concept plans.
  - The preliminary interchange configuration is provided for corridor selection purposes only. Detailed traffic forecasting and analysis is required before geometric recommendations can be determined.

Design Concepts

- The draft design concept plans for the New Location Alternative were reviewed. The following points were discussed:

    - North of I-40, the New Location Alternative is equivalent to the planned I-40 Connector project.
    - The proposed interchange at I-40 includes a collector-distributor road on I-40 for the back-to-back loop ramps.
    - The bridge concept over I-40 spans the recommended typical section as identified in the I-40 widening feasibility study completed in July 2009 (STIP Project FS-0609A).
    - The design concept includes a two-lane flyover ramp to accommodate traffic from I-40 eastbound to northbound Airport Connector.
    - The existing Macy Grove Road grade separation would be removed to construct the new interchange. Cul-de-sacs would be placed on Macy Grove Road on both sides of I-40. No other hospital access points or routes would be modified by the design concept.
    - During the meeting, a potential option to connect Macy Grove Road over I-40 via Wishbone Farm Road and Twin Creek Road. This option may be explored further to maintain the connection across I-40.
    - It was noted that the alignment of the Airport Connector north of I-40 crosses the approved Triad Business Park site. Based on information provided by the Town of Kernersville, it was not believed that proposed alignment conflicted with any pending developments. The FedEx facility was located west of the proposed alignment.

- The draft design concept plans for the Upgrade Alternative were reviewed. The following points were discussed:

    - The I-40/Sandy Ridge Road interchange concept includes a two-lane flyover ramp from eastbound I-40 to northbound Sandy Ridge Road. This would result in a five-lane section in the area of the flyover ramp merge (3 northbound through lanes). One northbound lane would merge prior to the bridge over Cider Road. A second northbound lane would drop as an exit ramp to West Market Street.
    - For the southbound side between West Market Street and I-40, one lane would add at the West Market Street interchange. This lane would become the free flow ramp for traffic wishing to access westbound I-40. Three southbound through lanes would continue through the interchange.
    - Full control of access would be implemented between I-40 and West Market Street. This will require closure of Triad Drive and Fairington Road at-grade intersections.
    - A connector between Triad Drive and Fairington Road would be constructed west of Sandy Ridge Road.
    - A bridge would be constructed to span the Norfolk Southern Railroad and West Market Street. The inclusion of this bridge would allow Cider Road to cross under Sandy Ridge Road to maintain access to land on the east side of Sandy Ridge Road. Cider Road would be connected to Little Santee Road to allow access to/from Triad Industrial Park.
    - The attendees could not recall if the West Market Street widening project included a full-movement access point at Little Santee Road. HNTB attempted to obtain these design plans at the start of this study, but had not been able to do so.
    - Retaining walls would be implemented on the west side of Sandy Ridge Road to reduce impacts to Cemex Construction Materials, which is located in the southwest quadrant of Sandy Ridge Road/West Market Street. Retaining walls would also be utilized for several interchange ramps to reduce limits of fill material.
    - The interchange concept includes a loop ramp in the northeast quadrant to accommodate northbound Sandy Ridge Road traffic wishing to travel westbound on I-40.
    - South of the interchange, Norcross Drive would be realigned to provide greater spacing from the interchange ramps.

- The following discussion points were common to both the New Location Alternative and the Upgrade Existing Alternative:
    - There are several planned roadway projects north of I-40 that are designated as freeways. The design concept plans show each of these interchanges with directional ramps between the Airport Connector and the planned facility. These planned freeways and the corresponding interchanges encompass a large land area and could serve as a potential barrier to local mobility and development patterns.
    - The study team should review the planning-level cost estimates to ensure that interchanges include only components that need to be constructed as part of the High Point Airport Connector project. Two examples were specifically mentioned for the New Location Alternative: Proposed interchange with I-73/I-74 Connector and proposed interchange with I-73 Connector.
    - NCDOT suggested contacting the Highway Design Branch and/or the Roadway Design Unit to coordinate assumptions between the High Point Airport Connector and the I-73 Connector. Mr. Mills thought that the design plans and cost estimates for the I-73 Connector may not include the costs to construct the connection to the Airport Connector.

Next Steps

- High Point would like to conduct a public workshop in early December. The workshop will be intended to obtain comments on the proposed feasibility study alternative corridors. Only the corridors will be presented at the public workshop for comments.
- If possible, High Point would like to obtain comments from NCDOT Division 7 and 9 within approximately two weeks. This would allow any changes to be made prior to the public workshop.
- Both NCDOT and High Point felt it was important to conduct the stakeholder meeting(s), particularly the coordination with City of Greensboro, prior to taking the corridors to the public for comment.
- These meetings will be coordination with NCDOT Divisions 7 and 9 to allow them to participate in the project discussions.

Action Items/Follow-Up

- High Point/HNTB to evaluate planning-level cost estimates to ensure that interchanges include only what is required to be constructed as part of the High Point Airport Connector project.
- High Point/HNTB to evaluate option of providing bridge over I-40 between Macy Grove Road and Twin Creek Road.
- High Point/HNTB to contact Highway Design Branch and/or Roadway Design Unit to discuss construction plan and corresponding construction costs associated with the NC 68/I-73 Connector interchange.
- High Point/HNTB to schedule stakeholder meetings. These meetings will be coordinated with NCDOT Divisions 7 and 9.
- High Point/HNTB to follow-up with NCDOT Division 9 prior to scheduling stakeholder meetings.
- NCDOT Division 7 to review draft design concept plans and provide High Point/HNTB with review comments within approximately 2 weeks.

The foregoing constitutes our understanding of the matters discussed and the conclusions reached. If there are any questions, corrections, omissions, or additional comments please advise Adin McCann (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File

HNTB

Project: STIP Project FS-0707B – Airport Connector

Subject: Stakeholder Coordination Meeting

Meeting Date: 12/2/09

Meeting Location: City of Greensboro – Engineering Conference Room

Present:

David Hyder	City of High Point
Mark McDonald	City of High Point
Greg Morris	City of High Point
Mike Mills	NCDOT / Division 7
Tyler Meyer	City of Greensboro
Lydia McIntyre	City of Greensboro
Dick Hails	City of Greensboro
Adam Fischer	City of Greensboro
Mike Kirman	City of Greensboro
Whit Webb	HNTB
Adin McCann	HNTB
Bradley Reynolds	HNTB
Keith Lewis	MAB
Don Bryson	MAB
Greg Saur	MAB

The following items were discussed during the meeting:

Meeting Purpose

- HNTB is currently developing the feasibility study for the High Point Airport Connector project (STIP Project FS-0707B). MAB is currently developing the feasibility study for the Sandy Ridge Road widening and extension (STIP Project FS-0707A).
- The purpose of the meeting is to provide the City of Greensboro with a status update on the High Point Airport Connector feasibility study, share the findings and conclusions of the study to date, and to obtain comments from the City of Greensboro. High Point would like to incorporate written comments from Greensboro in the final feasibility study report.

Project Background and Overview

- A project study area map was provided for the meeting attendees to view.
- At the request of NCDOT, the study area was extended north of I-40 to NC 68 near Piedmont Triad International Airport (PTIA). This created some overlap between other planned transportation projects, including: Sandy Ridge Road Widening and Extension (STIP Project FS-0707A), the I-40 Connector, and the I-73/I-74 Connector (Winston-Salem Airport Connector).
- The purpose of the project is to improve mobility, connectivity, and access between High Point and the Piedmont Triad International Airport (PTIA). Due to the limited number of crossings, I-40 also serves as a barrier to travel between High Point, PTIA, and areas north of I-40. Consequently, an additional purpose of the Airport Connector project is to improve mobility across I-40.
- The proposed termini for the project are the US 311/NC 66 interchange and NC 68/I-73 Connector interchange. The I-73 Connector is identified as STIP Project I-5110.

- HNTB developed four initial concepts intended to meet the purpose and need of the project. The initial concepts were developed utilizing MPO-adopted long range transportation plans and other prior studies completed in the project area.
- One initial concept included widening existing NC 66 between US 311 and I-40. However, this concept was eliminated early in the study due to its inability to meet the purpose and need of the project.
- Four initial concepts were reduced to two feasibility study concepts or corridors: a New Location Alternative and a Hybrid Alternative. The Hybrid Alternative is a combination of widening existing facilities (NC 66, Squire Davis Road, and Sandy Ridge Road) and new location segments (Sandy Ridge Road between West Market Street and the northern terminus at NC 68). During the meeting and in the information provided to the meeting attendees, the Hybrid Alternative was referred to as the Upgrade Alternative.
- The two feasibility study concepts will be comparatively evaluated based on costs and a GIS screening of environmental constraints. One alternative will be selected for further study. This additional study will include traffic forecasting, capacity analysis, access management recommendations, and development of additional design details such as intersection geometry.
- A feasibility study report will be developed to document the evaluation of alternatives, the alternative screening process, and the corresponding results. Opinions of probable cost will also be developed for each feasibility study alternative.
- The planned alignment and functional classification of the I-40 Connector causes the City of Greensboro concern with regard to potential feasibility of new development.
- The City of Greensboro would like to see the area west of the Airport and north of I-40 develop a grid-based transportation network with parallel routes and good internal circulation. The City feels that there are too many planned freeway facilities in this area and that these facilities would serve as a barrier to potential development, as well as hinder local circulation.

Traffic

- As the study progressed from traffic modeling to concept design, it became apparent that several assumptions needed to be re-assessed or revised. One particular example of this was the I-40 Connector project planned to extend on new location between the I-40/Business 40 split and the Sandy Ridge Road Extension.
- The New Location Alternative is basically the I-40 Connector between I-40 and Sandy Ridge Road Extension.
- No feasible design concept identified to accommodate the planned new location I-40 Connector as part of the Upgrade Existing Alternative. Consequently, the traffic modeling for the High Point Airport Connector study was completed without the I-40 Connector in the design year (2035) model network. Without this project, the widening and extension of Sandy Ridge Road basically serves the same purpose as the planned I-40 Connector. All other projects from the MPO-adopted LRTPs remained in the design year model network.
- Two figures were provided to each attendee to show the projected daily traffic volumes data for both the New Location and Upgrade Alternatives without the planned I-40 Connector project. The traffic volumes contained on the figures were extracted directly from the regional travel demand model and are not the product of a project-level traffic forecast.
- A figure showing the breakout of traffic at the I-40 interchanges for the No-Build, Upgrade and New Location scenarios was also provided to each attendee.
- North Carolina Level of Service (NCLOS) was utilized to develop a planning-level estimate of capacity required to accommodate design year (2035) traffic for both alternatives. This information was used to develop proposed typical sections for each feasibility study alternative.
- The typical sections and recommended facility types will be re-confirmed once the project-level traffic forecast and analysis is completed.

- The following points were discussed regarding the Upgrade Alternative:

- The Upgrade Alternative would be classified as a boulevard facility with partial control of access (*i.e., consolidation of driveways and/or driveway movements limited to right-in/right-out only*).
- The I-40 widening feasibility study (STIP Project FS-0609A) completed by NCDOT in July 2009 recommended improvements to the I-40/Sandy Ridge Road interchange to serve design year (2035) traffic. The study evaluated a single point urban interchange (SPUI) and a diamond with loop ramps.
- The I-40 widening feasibility study concluded that the SPUI could not provide acceptable traffic operations in the 2035 design year; consequently, the diamond with loop ramps was identified as the preferred interchange improvement concept.
- Based on travel demand model output, it was determined that projected design year (2035) traffic in the northwest quadrant of the I-40/Sandy Ridge Road interchange is approximately 25,000 vehicles per day in the No-Build and Upgrade Existing scenarios. This is approximately 1,500 vehicles in the peak hour.
- The traffic forecast completed as part of the I-40 widening feasibility study (STIP Project FS-0609A) showed similar daily quadrant turning movement; however, it was shown in the southwest quadrant of the interchange.
- In general, the capacity of a loop ramp is approximated at 800 to 1,200 vehicles in the peak hour depending on several factors (e.g., truck traffic, design speed, etc.). If this threshold is exceeded, it is recommended that a directional ramp be evaluated.
- A flyover from eastbound I-40 to northbound Sandy Ridge Road was incorporated as part of the Upgrade Alternative design concept plans.
- The preliminary interchange configuration is provided for corridor selection purposes only. Detailed traffic forecasting and analysis is required before geometric recommendations can be determined.

- The following points were discussed regarding the New Location Alternative:

  - According to the HPMPO 2035 LRTP, the High Point Airport Connector between US 311 and I-40 is currently planned as a freeway/expressway facility. However, after reviewing the projected daily traffic volumes for these segments, it is believed that a freeway facility is not warranted. Consequently, the proposed functional classification of the New Location Alternative between US 311 and I-40 is an expressway or boulevard.
  - A "Superstreet" concept (or something similar) might be possible; however, this determination cannot be made until the detailed traffic forecasting and analysis is completed to determine how best to accommodate the peak hour turning movements.
  - North of I-40 (within GUAMPO planning jurisdiction), the proposed New Location Alternative would be a freeway/expressway with interchanges at I-40, Sandy Ridge Road/I-73/I-74 Connector and NC 68/I-73 Connector.
  - The New Location Alternative would have limited control of access (i.e., no driveway connections).
  - Based on travel demand model output, projected design year (2035) traffic in northwest quadrant of the I-40/High Point Airport Connector interchange is approximately 25,000 vehicles per day. This is approximately 1,500 vehicles in the peak hour.
  - In general, the capacity of a loop ramp is approximated at 800 to 1,200 vehicles in the peak hour depending on several factors (*e.g., truck traffic, design speed, etc.*). If this threshold is exceeded, it is recommended that a directional ramp be evaluated.
  - A flyover from eastbound I-40 to northbound High Point Airport Connector was incorporated as part of the New Location Alternative design concept plans.
  - The preliminary interchange configuration is based on raw model output volumes and is provided for corridor selection discussions only. Detailed traffic forecasting and analysis is required before geometric recommendations can be determined.

City of Greensboro Studies (Airport Area Network Study and STIP Project FS-0707A)

- MAB created a sub-area model for its work on the Airport Area Network Study. The land use information in the sub-area model was provided by Greensboro DOT and was vetted by the Steering Committee, which included Greensboro, High Point, Winston-Salem, and Kernersville
- In coordination with the MPOs, including HPMPO, MAB used the 2035 Existing + Committed (E+C) network as the basis for its work in both the Airport Area Network Study and the Sandy Ridge Road Extension Feasibility Study. This included twelve transportation projects in the Airport Area. These twelve projects were reviewed by the project Steering Committee, which included Greensboro, High Point, Winston-Salem, Kernersville, and NCDOT.
- During the Sandy Ridge Road Extension feasibility study scoping meeting, NCDOT instructed MAB to assume that the I-73 Connector (STIP Project I-5110) as a 2035 E+C project.
- The Airport Area Network Study evaluated E+C projects based on a cost benefit analysis which considered reduction of delay (in vehicle-hours) and Long Range Transportation Plan (LRTP) costs.
- Feasibility study recommendations were incorporated into the E+C network.
- Access for adjacent developments, as well as for the Piedmont Triad International Airport (PTIA), was looked at closely as part of the Airport Area Network Study.
- The analysis completed as part of the Airport Area Network Study has also shown that potential benefits of planned transportation projects vary depending on the order of implementation. Consequently, the basic purpose of the Airport Area Network Study is to establish a set of prioritized transportation projects to get from year 2009 to year 2035.
- The I-73 Connector project is a lynchpin for other freeway projects in the Airport Area.
- The City of Greensboro indicated that it is considering downgrading the I-73 Connector to a boulevard. The City does not think a freeway is necessary. Additionally, the City is concerned that a freeway facility would serve as a barrier to potential development.
- The project-level traffic forecast for the Sandy Ridge Road feasibility study has not yet been approved by NCDOT.
- MAB is currently evaluating feasible interchange improvements for the I-40/Sandy Ridge Road interchange as part of the feasibility study work. These concepts include construction of loop ramps and/or a single point urban interchange (SPUI). The concepts being studies do not include a freeway-to-freeway interchange configuration.
- The current recommendation in the Sandy Ridge Road feasibility study is the Upgrade Existing Alternative. This alternative would widen Sandy Ridge Road between I-40 and West Market Street, as well as Pleasant Ridge Road from West Market Street to NC 68.

Design Concepts

- The draft design concept plans for the Upgrade Alternative were reviewed. The following points were discussed:

    - The I-40/Sandy Ridge Road interchange concept includes a two-lane flyover ramp from eastbound I-40 to northbound Sandy Ridge Road. This would result in a five-lane section in the area of the flyover ramp merge (3 northbound through lanes). One northbound lane would merge prior to the bridge over Cider Road. A second northbound lane would drop as an exit ramp to West Market Street.
    - For the southbound side between West Market Street and I-40, one lane would add at the West Market Street interchange. This lane would become the free flow ramp for traffic wishing to access westbound I-40. Three southbound through lanes would continue through the interchange.
    - Full control of access would be implemented between I-40 and West Market Street. This will require closure of Triad Drive and Fairington Road at-grade intersections.
    - A connector between Triad Drive and Fairington Road would be constructed west of Sandy Ridge Road.

- A bridge would be constructed to span the Norfolk Southern Railroad and West Market Street. The inclusion of this bridge would allow Cider Road to cross under Sandy Ridge Road to maintain access to land on the east side of Sandy Ridge Road. Cider Road would be connected to Little Santee Road to allow access to/from Triad Industrial Park.
- The attendees could not recall if the West Market Street widening project included a full-movement access point at Little Santee Road. HNTB attempted to obtain these design plans at the start of this study, but had not been able to do so.
- Retaining walls would be implemented on the west side of Sandy Ridge Road to reduce impacts to Cemex Construction Materials, which is located in the southwest quadrant of Sandy Ridge Road/West Market Street. Retaining walls would also be utilized for several interchange ramps to reduce limits of fill material.
- The interchange concept includes a loop ramp in the northeast quadrant to accommodate northbound Sandy Ridge Road traffic wishing to travel westbound on I-40.
- South of the interchange, Norcross Drive would be realigned to provide greater spacing from the interchange ramps.

- The draft design concept plans for the New Location Alternative were reviewed. The following points were discussed:

  - North of I-40, the New Location Alternative is equivalent to the planned I-40 Connector project.
  - The proposed interchange at I-40 includes a collector-distributor road on I-40 for the back-to-back loop ramps.
  - The bridge concept over I-40 spans the recommended typical section as identified in the I-40 widening feasibility study completed in July 2009 (STIP Project FS-0609A).
  - The design concept includes a two-lane flyover ramp to accommodate traffic from I-40 eastbound to northbound Airport Connector.
  - The existing Macy Grove Road grade separation would be removed to construct the new interchange. Cul-de-sacs would be placed on Macy Grove Road on both sides of I-40. No other hospital access points or routes would be modified by the design concept.
  - It was noted that the alignment of the Airport Connector north of I-40 crosses the approved Triad Business Park site. Based on information provided by the Town of Kernersville, it was not believed that proposed alignment conflicted with any pending developments. The FedEx facility was located west of the proposed alignment.

- There are several planned roadway projects north of I-40 that are designated as freeways. The design concept plans show each of these interchanges with directional ramps between the Airport Connector and the planned facility. These planned freeways and the corresponding interchanges encompass a large land area and could serve as a potential barrier to local mobility and development patterns.

Schedule/Next Steps

- High Point would like to conduct a public workshop in early 2010. However, since there is overlap between the HNTB and MAB studies, both High Point and Greensboro hope to present coordinated design concepts to the public. This will require further coordination and, depending on the comments provided by Greensboro, may not be possible within the scope of the current feasibility study.
- It is important to note that the feasibility study is an initial step in the project development process. It is not the final decision-making document with regard to the project and recommendations are subject to change in the future. However, the design concepts presented at today's meeting can always be "scaled-back" at a later date. Therefore, it may not be worthwhile to revise the design concepts presented at today's meeting.

- As part of the final feasibility study report, High Point would like to incorporate specific written comments from Greensboro. These comments will serve as documentation of potential assumptions and issues to be studied and/or refined in the next stage of the project.
- The City of Greensboro is conducting a stakeholder meeting later in the month for the Sandy Ridge Road Extension project. Further discussion of these two studies will occur at this meeting.

Action Items/Follow-Up

- High Point will coordinate further with Greensboro regarding the design criteria and concepts for the area north of I-40.
- Once the additional coordination is complete, Greensboro will provide High Point with written comments on the feasibility study design concepts. These comments will be incorporated into the final feasibility study report.

The foregoing constitutes our understanding of the matters discussed and the conclusions reached. If there are any questions, corrections, omissions, or additional comments please advise Adin McCann (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File

Appendix E – Public Involvement

The HNTB Companies
Engineers Architects Planners

343 E. Six Forks Drive
Suite 200
Raleigh, NC 27609

Telephone (919) 546-8997
Facsimile (919) 546-9421
www.hntb.com

Date
11/08/11

To
David Hyder, City of High Point
File

From
Paige Hunter, HNTB

Subject
Citizens Informational Workshop
STIP FS-0707B High Point Airport Connector

PROJECT CORRESPONDENCE

On Tuesday, September 20th 2011, the City of High Point held a Citizens Informational Workshop in Colfax. This memorandum summarizes the public outreach efforts and public comments associated with the Workshop.

Event: Citizens Informational Workshop
Date: September 20, 2011
Location: Multipurpose Room, River Landing Clubhouse
Time: 5:00pm – 7:00pm

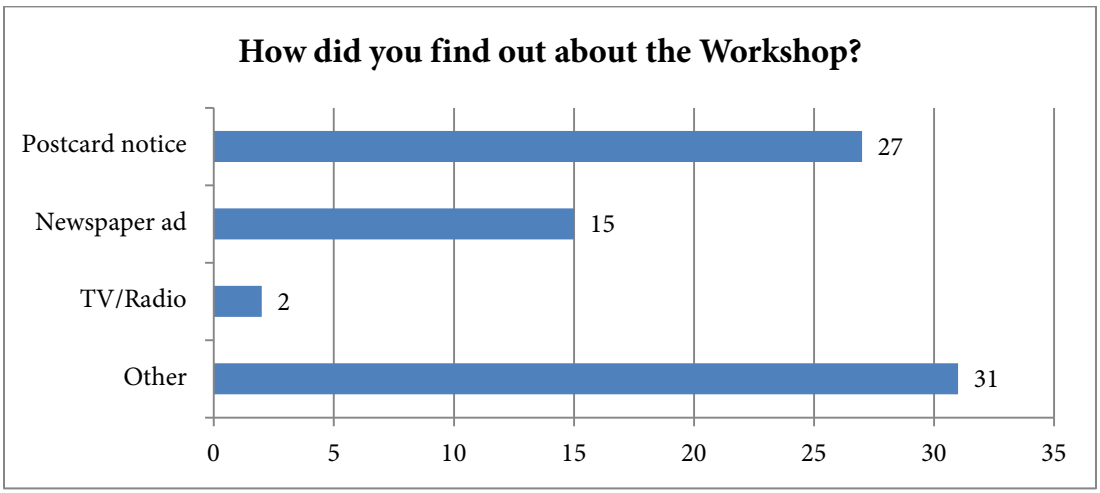
Summary of public notification efforts:

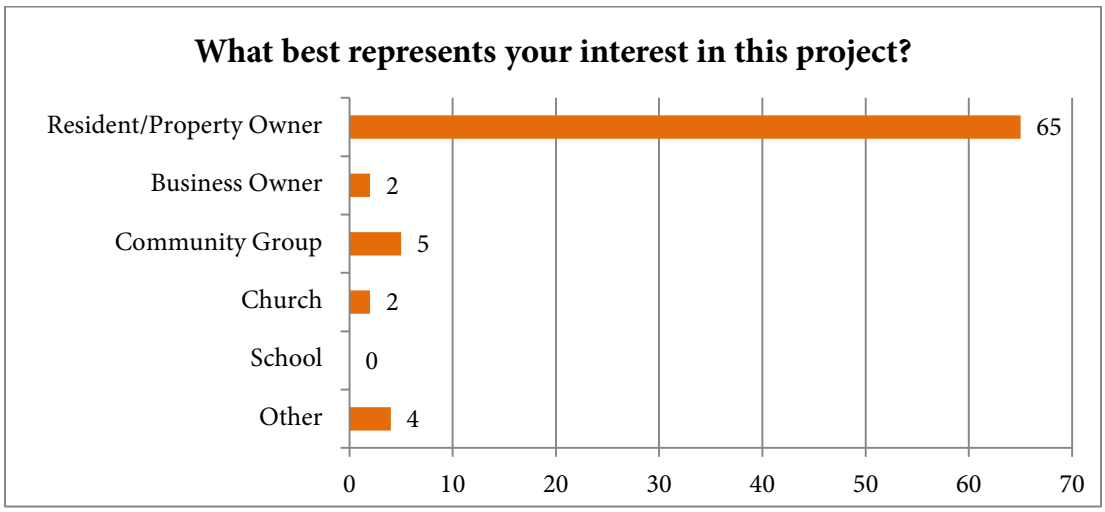
- HNTB mailed 850 postcard notifications to residents, businesses, and churches in the vicinity of the project study area. The mailing list was provided to HNTB by the City of High Point and was based on Guilford County tax records.
- The City of High Point advertised the project website on the postcard notifications (http://www.highpointnc.gov/transit/HPMPO/projects/NS-Airport-Connector/airport.html).
- The City of High Point sent notices to the following local newspapers:
  - Winston-Salem Journal
  - High Point Enterprise
- The City of High Point advertised the Workshop on the City's website: http://www.highpointnc.gov/transit/HPMPO/default.htm
- The City of High Point posted project maps and the comment form (via Survey Monkey) from the Workshop on the project website: http://www.highpointnc.gov/transit/HPMPO/projects/NS-Airport-Connector/airport.html

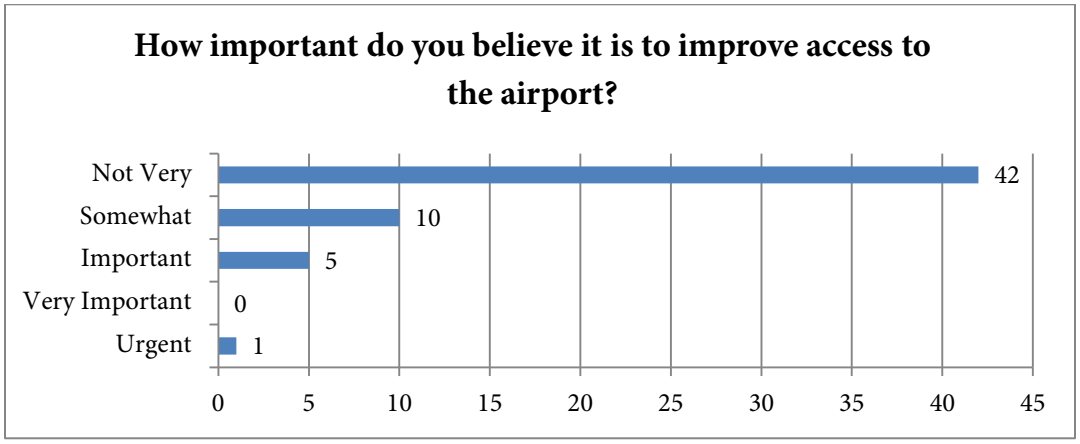
Summary of Comments

130 attendees signed in, and each person was offered a comment form. HNTB provided 100 comment forms, but due to the vast number of attendees, there were not enough comment forms for each attendee. Index cards were provided to attendees that did not receive a comment form in order to write down comments. HNTB and City staff recorded names, mailing address, and/or e-mail addresses from attendees that requested to receive a comment form via mail or e-mail. HNTB followed up with these requests on September 21, 2011. Meeting attendees were also encouraged to visit the project website to take an online survey. Twenty-four (24) comment forms were submitted at the Workshop and twenty-eight (28) comments forms were submitted following the Workshop. In addition, the City of High Point set up an electronic version of the comment forms on Survey Monkey, which was posted on the project website. Twenty-one (21) citizens completed a comment form via Survey Monkey.

Below is a summary of the comments forms. It should be noted that some respondents checked more than one response on multiple selection questions, and some respondents did not respond. Also, a few residents submitted both a paper comment form and an electronic comment form on Survey Monkey; however, duplicate comment forms were not counted in the summary tables below. A detailed summary of each comment form can be found in the attached matrix.







In general, most attendees did not support the new location portions of the project and felt that the benefits of the project are not worth the cost. Many attendees felt that access to the airport can be improved by widening existing infrastructure (*e.g.* Johnson Street, Sandy Ridge Road, NC 66, NC 68) without building any new location facilities. Several residents expressed concern that the proposed project is a violation of the Heart of the Triad Plan, as well as concerns that Piedmont Triad International Airport does not generate enough traffic to warrant improved access. Residents value the rural open spaces and farmland in the project area, and fear that the proposed project will disrupt farmland, residences, and rural open space. However, some residents expressed their support for the proposed Airport Connector Project. Some of these residents are in favor of the Hybrid Alternative due to its lower estimated cost and use of existing facilities, while some favor the New Location Alternative due to fewer impacted residences and businesses.

Name	How did you find out about the workshop?	What best represents your interest in this project?	How important do you believe it is to improve access to the airport?	Comments
David Fabrizio	Community notice through HOA	Resident/Property Owner; Community Group	Not very	The incremental gains in commute time don't seem to justify cost or displacement. Also contradicts plans that Greensboro MPO recommends for north of I-40. Would like to see the project factor in road improvements at Market St., Pleasant Ridge Rd., and NC 68. Also would like to see long range costs for maintenance of new roads. Cancel the project. The area MPO's need to work together. The HOT is failing and the surrounding jurisdictions are focusing on self-interest as opposed to the best interest of the entire region.
Steve and Cheryl Holt	Postcard notice	Resident/Property Owner; Church	Somewhat	Unfavorable elements of the project include the route Sandy Ridge Road takes that would affect Smith Grove Baptist Church and cemetery (Map EX-2) and all other homes along Sandy Ridge in the curve.
Lynn Davis	Email	Resident/Property Owner	Somewhat; Important	PTIA is already the easiest airport in NC to get in and out of. Can some of the existing roads be sufficiently widened to "do the trick?" Concerned about the amount farmland that will be lost.
Andrew and Carol Grochowski	Postcard notice	Resident/Property Owner	Important	Would like to see the use of existing infrastructure (i.e., fix NC 66 and NC 68 interchanges with I-40). Widen Johnson Street as the connector to Sandy Ridge and improve I-40 interchange. Concerned with spending tax dollars for minor improvement in driving time. Would rather see tax dollars spent to maintain current infrastructure. Show consideration for environment and existing community. Please keep public informed on a timely basis.
John Cerak	Postcard notice	Resident/Property Owner	Not Very	Unfavorable elements include disrupting wetlands, farmland, houses, people lives, and cost. Would like to see what else the money could be spent on (schools, parks, teachers, police, fire dept.). Project is a waste of money.
Mark and Gwen Scott	Postcard notice; Newspaper ad	Resident/Property Owner	Not Very	Project is too much of an impact on our area. Unfavorable elements include loss of farmland, loss of history, loss of personal property, and relocation of old cemeteries. Lack of money the city has, it would be fiscally irresponsible to take on a project of this size, given the economic conditions that exist today. Do not want project. Relocated to this area for peace and quiet. Have no trouble getting to PTIA from Sandy Ridge Road – it takes 10 minutes. Project would disrupt this area and destroy a way of life that has existed for generations. Project is in violation of the Triad Land Use Plan.
Nelson Leonard	Postcard notice	Resident/Property Owner	Not Very	Access to the airport from High Point is much more direct using NC 68. From Winston-Salem, I-40 is direct. Airport access is poor excuse for proposed routes. Additional HP access to I-50: Make south starting point at intersection of US 311 / Johnson St. – 4 lanes with median (like Piedmont Pkwy) – north to intersection of Sandy Ridge / US 421 using exiting path of Johnson Street and Sandy Ridge Road. This would accomplish purpose without distress to land and residents.

Name	How did you find out about the workshop?	What best represents your interest in this project?	How important do you believe it is to improve access to the airport?	Comments
Robert Frederick	Newspaper article	Resident/Property Owner	Not Very	Appreciates public involvement. Seems to not be in the interest of the community of High Point, just developers. Was told by Pat Schreiber that the project is in violation of the Land Use. Does not favor spending hundreds of millions of dollars on a road to save people 8 minutes of travel time to and from the airport. Would like to see the City study the potential road improvements in terms of attracting businesses/jobs to High Point. Would like to see the City show why this is the best investment for all of the citizens of High Point in the long term, not just the ones who fly regularly. As a new resident of High Point, I have made several trips to/from the airport. It truly is not burdensome to get to the airport. This city already has the best airport access that we've experienced.
Richard Stahli	From a neighbor	Resident/Property Owner	Not Very	In favor or widening Sandy Ridge Road up to I-40. Sandy Ridge Road is rather busy at rush hour. Not in favor of building a new highway north of I-40 because it impacts residential areas and is a waste of resources. Also, I-40 and NC 68 already achieve the same thing and are not congested. Would like to see High Point utilize the existing infrastructure. Would support the project if it widened up to I-40 and then used existing roads to access the airport.
Barry and Sandy Einhellig	Postcard notice	Resident/Property Owner	Somewhat	One alternative takes my home and the other takes my neighbor and leaves me and only 10 acres on a busy road.
Farrell D. Childers	Newspaper ad; Word of mouth	City of High Point	Not Very	Unfavorable because NCDOT should not spend $200 million for a new connector to the airport when they are not maintaining our existing road system. Why do the NC Legislature's divert designated money from the highway trust fund for other uses than road construction and maintenance? Do not build project. Improve existing roads systems (from NC 66 / US 311 to I-40).
Joseph C. Simcox	Word of mouth	Resident/Property Owner	Somewhat	Favor widening roads to airport, but do not see the need to connect to US 311. Violation of the Heart of the Triad Land Use Plan. The project is not really needed and a waste of funds. Would like to see improved communication from High Point. Would like to see more options that widen existing roads.
H. Larry Stafford	Postcard notice	Resident/Property Owner	Not Very	Unfavorable to spend millions of dollars you do not have to save a few minutes travel time and disrupting properties and a cemetery. Support could be earned for project is shown credible evidence that this project is really necessary. Property has been in the family since 1867.
Joan Voss	Postcard notice	Resident/Property Owner	Not Very	Do not want or need project. It violates the Heart of the Triad Plan. Project goes straight though my property, which is family-owned property where my husband was raised.
Elizabeth Conner	Newspaper ad	Personal	Not at all	Waste of money and a paring over of needed green space. Widening Sandy Ridge Road and Skeet Club Road will supply all the needed roads.
Gary Silverstein	E-mail notice from friend	Resident/Property Owner; Business Owner	Somewhat	Vehemently opposed to project. Little benefit with high cost. Please be more responsible with tax payer money in the future.
Greg Shue	Newspaper ad	Resident/Property Owner	Not Very	The benefits are not worth the expenditures, disruption, and future maintenance costs. Would like to see existing NC 68 improved.
Bob Reetz	Newspaper ad	Resident/Property Owner	Not Very	Improve airport access by widening NC 66 instead of building a new road.

Name	How did you find out about the workshop?	What best represents your interest in this project?	How important do you believe it is to improve access to the airport?	Comments
Jan Hodgin	Postcard notice; Newspaper ad	Resident/Property Owner	Important	Favor alternate routes off Sandy Ridge Road. Project puts too much traffic on widening Sandy Ridge. People will not be able to get out of neighborhoods and driveways. Improve NC 68 to Bryan Blvd.
Charles and Kathy Flynt	Postcard notice; TV/Radio	Resident/Property Owner	Somewhat	Improve existing infrastructure (i.e., Johnson Street, Sandy Ridge Road, Kendale Road
Andrew Ritenour	Other: e-mail from concerned citizen	Resident/Property Owner	-	Strongly opposed to New Location alternative. This is not consistent with Heart of Triad study and community consensus that existing alignments should be used first. It is hypocritical for High Point to oppose locating the Airport Area High School south of I-40 and then supporting a major new location highway north of I-40. New road alignments which will negatively impact rural, farming, and environmental areas of western Guilford County are unfavorable. Having lived in the DC area, one thing I don't desire is miles of sprawl which is a plausible outcome from new alignments. In favor of widening existing roads.
C. Robin Dean	-	-	-	Roads in NC are development motivated and not the movement of traffic and this is another example. The alternatives are shown to create a division amongst the landowners. The preferred route has probably already been decided. The problem is not with the engineers, the problem is with the elected and appointed decision makers that are controlled by the special interest groups.
John R. Anderson, Jr.	-	-	-	The only logical route to the airport is Johnson Street straight to Market Street. The money spent on this study was a waste of money. Johnson Street is already 5 lanes to Skeet Club Road, so they only portion involved is from Skeet Club Road to I-40 since Greensboro is widening from I-40 to Market Street.
N/A	-	-	-	Accessibility to Kernersville Medical Center by way of Macy Grove Road and I-40 should be of great concern.
Larry Edwards	Postcard notice	Resident/Property Owner	Not Very	Waste of our money. Concerned that few High Point residents utilize the airport.
Roger Payne	Newspaper ad	Resident/Property Owner	Not Very	Do not see a need for either proposed alternative. We have plenty of access routes to the airport. Concerned with project destroying rural areas such as along Squire Davis Road. Use money to improve streets in the city.
Joyce Collins	Postcard notice	Resident/Property Owner	Not Very	Project goes against the use agreed to earlier. Major highway through an area that should be preserved is unfavorable. Should widen Johnson Street / Sandy Ridge Road from Skeet Club to Market Street.
Marianne P. Royle	Postcard notice; Newspaper ad; E-mail from David Hyder	Resident/Property Owner; Community Group; Environmentalist	Not Very (Not at all for now and foreseeable future)	Preferable, more sensible and cost-effective route to airport: Johnson St. off US 311 to Sandy Ridge Road (widened) to I-40 entrance. Should be made clear that a No-Build option exists. Reasons include cost now and in the next 20 years, destruction of wetlands and degradation of rural areas, and more air and water pollution problems and ensuing cost of alleviating those. Project violates Heart of the Triad Plan which involved representatives of 7 governing bodies and had a strong contingent of local land owners and business owners. The HOT plan took several years and was approved by all towns, counties and cities in the area that were being planned.
Rafe Royle	Postcard notice; Newspaper ad; E-mail	Resident/Property Owner; Community Group	Not Very	Should have included No-Build alternative. Johnson Street off of US 311 to Sandy Ridge Road to I-40 entrance should be gateway to the airport.

Name	How did you find out about the workshop?	What best represents your interest in this project?	How important do you believe it is to improve access to the airport?	Comments
Allison Upchurch	Word of mouth	Resident/Property Owner	Not Very	We do not need yet another road to an airport that has already seen a decline in customers. Move the project out of our area. Stop trying to take our land, homes, and beautiful countryside for a project that's merely a waste of money in an already challenging economic recession. We, along with many of our neighbors, are 100% opposed to this project and cannot support this endeavor know the cost and the ruination of our beloved area we call home.
Billy G. Dillon	Postcard notice	Resident/Property Owner	Not Very	This project disturbs our life and home. Go another route.
Brian Terrell	Neighbor	Resident/Property Owner	Not Very	I oppose the proposed North/South Airport connector. Constructing a new north/south connector through the region does not utilize taxpayer funds efficiently. This is especially so with the long term fundamental economic problems facing governments, businesses and individuals. There are other north/south connectors in the adjacent area that should be utilized or upgraded long before a new one is considered. This will be less disruptive to rural areas and to fewer people. Please choose no to the North/South Airport Connector when the proposal is up for consideration.
John Hoyle	Newspaper ad	Resident/Property Owner	Not Very	No elements of the project have any merit. Another example of waste of taxpayer's dollars to fund unneeded, unwanted government officials pet projects while taking the land and homes of longtime residents. Project needs to be abandoned. A visit to the airport would confirm the lack of need for an "improved access" from High Point or any other location for that matter. The terminal is a ghost town compared to only ten years ago. The number of passengers has dramatically decreased. Due to the lack of service and higher rates for flying from PTI, a substantial number of travelers choose to use Raleigh-Durham or Charlotte airports. So why spend scarce transportation money to simply reduce the travel time from High Point by a few minutes to "enhance" a decreasing demand?
Megan Royle	E-mail	Resident/Property Owner	Not Very	Completely unnecessary to create yet another route to a destination that already has more than enough access. Drop the entire idea. I have a farm located in your proposed connector route. My parents lived here first, and I plan to pass it on to my children. My property is part of the land conservancy. Deep River runs through it and we have beautiful wildlife that lives here in harmony with us. Do you all not have anything better to do with your time and money than soak up the precious few acres of land in this area and pave it? It is so unnecessary to create this N/S Connector to take people to and from a place that is not over traveled in the first place. Let those people sit in traffic, drive a little slower, leave a little earlier. May they – and you – could take time on your drive to wherever you go and see the beauty in the land rather than figure out how you can get from point A to point B faster than the speed of light. If you have this surplus of money you want to spend on unnecessary new roads, try doing the right thing with it and give it back to our tanking deficit in this country.
Talus and Rachel Tsoi	HOA e-mail	Resident/Property Owner	Not Very	Feel blindsided by not receiving a postcard notice since this road involves Colfax (my neighborhood). Waste of money. Affects my neighborhood. Travelers should plan accordingly if traffic is bad and leave early. Study the widening of NC 68 instead.
Vickie Grant	Word of mouth	Resident/Property Owner	Not Very	Project is not necessary and is too wasteful. It is not worth the cost of both financial and land usage to proceed with the project. More travelers commute to either Charlotte or Raleigh than use the local terminal. Merely removing a few minutes of travel time in no way justifies consideration of this wasteful spending or depredation to the land and land owners.

Name	How did you find out about the workshop?	What best represents your interest in this project?	How important do you believe it is to improve access to the airport?	Comments
Cathy M. Poole	Postcard notice; Newspaper ad; TAC Meeting	Resident/Property Owner; Community Group; NC Alliance for Transportation Reform	Not Very	A copy of the feasibility study should have been available to the public at the workshop. The project is a waste of money. Note: Ms. Poole provided more comments in a letter attached to her comment form. Her letter is attached at the end of this document.
Tim and Peggy Terrell	Word of mouth	Resident/Property Owner	Not Very	We do not favor this project in any form. It is unnecessary and a waste of taxpayer's money. We do not need an additional road to the airport which will cost millions of dollars to only save a few minutes of travel time. We would like to see the project end and our elected officials to no pursue this project. This money should be spent on more important issues. This land is one of the few natural settings that still exist in the area. We have wildlife, farms, and beautiful open spaces. The residents have made a choice to live here. We do not want to see more traffic and destruction of our land and homes. This project would not be considered a wise move by anyone were it not for the greed of a few who stand to profit. We ask our elected officials to protect our area and to terminate this project. This money could be better spent on something other than a road this is totally unnecessary. It is time that our elected officials listen to the taxpayers and act accordingly.
Dorothy Darr	Newspaper ad	Resident/Property Owner; Community Group; Church	Not Very	Sprawl doesn't pay; it's a sink hole for municipal taxpayers. Taxpayers should not be providing highways so developers and businesses can buy cheap rural land. I'd like to support the no road option. Recent studies in North Carolina have shown that urban sprawl doesn't pay: governments can spend as high as $1.50 in services for ever $1.00 collected in new tax revenue. Urban sprawl is unsustainable, running state and municipal governments into the red. This type of planning reminds me of the 1960s, 70s, and early 80s, which is now 30 years old.
Meredith Terrell	Word of mouth	Resident/Property Owner	Not Very	I find the entire project unfavorable. It is a waste of land, money, and resources. There is no validation to spend over $200 million on something that only adds approximately 9 miles of road. The current route to the airport is perfectly sufficient for the community. I do not feel that the idea for the North/South Connector represents the ideas of the community as a whole; but merely those of a select few city officials. It is not logical to assume that simply adding more roads, widening existing roads, and thus infringing on people's person property is going to increase the amount of people that use Piedmont Triad International Airport. Please consider the residents of this area, and what this unnecessary and wasteful proposal for the Connector would do to their homes and land. People moved to this area for a reason, and now officials are trying to take that away for something that, at best, will only save a few minutes for some people.
Laura Hamilton	VOTR – stakeholders	Resident/Property Owner	Not Very	The concept of building a $200 million – less than 15-mile long – road for High Point residents to get to PTIA is an absurd idea at any time but especially during slow economic times. You will be facing strong opposition to the project as the 188 homeowners whose homes will be destroyed for this senseless project will join hands with family and neighbors to fight this action. We stand united.
Ed Shifflette	Postcard notice	Resident/Property Owner; Business Owner	Not Very	Only in favor of widening Johnson Street/Sandy Ridge Road.

Name	How did you find out about the workshop?	What best represents your interest in this project?	How important do you believe it is to improve access to the airport?	Comments
Edwin E. Beazlie, Jr.	Word of mouth	Resident/Property Owner	Not Very	Pristine rural area does not need to be taken and destroyed for the time convenience of a few at millions of taxpayers' expense. Minutes saved does not equal hundreds of millions of taxpayers' dollars. There are so many empty buildings and factories in the downtown High Point area that city government should concentrate on revitalization of that area and leave private rural areas along. Ignore special interest developers desire for person gains.
Phyllis Shifflette	Postcard notice	Resident/Property Owner	Not Very	Only in favor of widening Johnson Street/Sandy Ridge Road. The Piedmont Triad Airport does not generate enough traffic from High Point to warrant spending this exorbitant amount of money.
Bob Fricke	Workshop wayfinding sign on side of the road	Resident/Property Owner	Not Very	Do not favor any elements of the project. Would like to see NC 68 improvements studied – eliminate stop lights to the airport. Also study I-85B to Bryan Boulevard as airport connector since entrance is north side of airport.
N/A	N/A	Resident/Property Owner	Not Very	Cost is unjustifiable.
Henry C. Johnson	Postcard notice	Resident/Property Owner	Not Very	Do not favor any elements of the project.
Jimmy and Joanne Morgan	HPMPO e-mail	Resident/Property Owner	Not Very/Somewhat	Current routes adequately serve present needs to an underutilized airport. Only widening Sandy Ridge Road will serve the area for many years to come. It would be very poor stewardship of limited transportation funds to spend as much as $200 million to save a few minutes of travel time. Widening Sandy Ridge Road from Skeet Club Road to I-40 will accomplish what is needed, and is also the only option supported by the Heart of the Triad Land Use Plan. Limited transportation funds could be better spent on repairing, improving, and maintaining existing roads and bridges. Costs and environmental threats posed by the proposed alternatives are not justified. Real possibility of harming watershed areas. Spending upwards of $200 million for a far western route that High Point travelers will have to drive out of their way to access is a terrible waste of tax dollars. Widening Sandy Ridge Road, when coupled with Greensboro's plans to widen Sandy Ridge, Market Street, and Pleasant Ridge Road, produces a more efficient, centrally located route.
Nancy P. Potts	Postcard notice	Resident/Property Owner; Rental homes	Somewhat	New Location Alternative was a shock to residents in the area, as we had heard the road was already planned to go between a different location nearby. I prefer the Hybrid Alternative due to lower cost, less wetland impacts, and because my property is not involved. The amount of wetlands involved in the New Location Alternative is unfavorable. Do not dead-end Macy Grove Road or make changes on South Bunker Hill Road to connect to Idol Cox Road. Prefer that road frontage on our farm is taken rather than splitting the farm. Making Macy Grove Road a dead-end means that the route to the new hospital is closed off for residents in this area and would mean an extra 4-5 miles to travel to the new hospital. New Location Alternative will split my 48 acres farm, which will decrease the value of the land and make it difficult to access the split property. Rental property on Macy Grove Road will be more difficult to rent if Macy Grove becomes a dead-end.

Name	How did you find out about the workshop?	What best represents your interest in this project?	How important do you believe it is to improve access to the airport?	Comments
Rhonda J. Owens	Other	Resident/Property Owner	Not Very	The Hybrid Alternative affects the church I grew up in and have attended all of my life. Disturbing a cemetery is extremely disgraceful and in poor taste. I do not favor any of the elements of the project. Do not disadvantage those affected by making travel from their homes longer due to poor access to roads from their driveways. It makes more sense to widen NC 68 to better handle High Point traffic traveling to the airport. I have a hard time believing that there is enough of a need for travelers from High Point going to/from the airport to warrant the cost of this project. Citizens never expected to have to be this stressed during their retirement. They never counted on being uprooted in their "golden years" for the sake of a quicker route to the airport. We have had enough of a once close knit community destroyed for the sake of progress.
Ricky L. Gray	Postcard notice	Resident/Property Owner	Urgent	Favor the New Location Alternative, as it affects far fewer people, businesses, churches, etc. It will help the new hospital on Macy Grove Road and FedEx on Old Greensboro Road, and will ease traffic on Market Street. The Hybrid Alternative will limit access to some of the smaller neighborhoods throughout the whole route. Would like to see the project accelerated.
Sandra L. Hart	Other: a friend	Resident/Property Owner	Somewhat	Favor the widening of Sandy Ridge Road. Accessing the New Location Alternative will cause many residents of High Point to drive out of their way. Would like for Sandy Ridge Road to be widened because it is the most direct route to the airport other than NC 68. Consider the public's comments and suggestions. Passenger service is down at the airport and we should be able to handle with existing roads. What analysis has been done of the environmental damage to drinking water supplies? The need to minimize stream crossings and no heavy impacts on watershed areas?
Brian Trotter	Postcard notice	Resident/Property Owner	Not Very	Favor the New Location Alternative over the Hybrid Alternative. The Hybrid Alternative affects so many more homes, churches, businesses, and increases the risk of more vehicular crashes due to more stoplights. Don't look at the difference in cost between the two alternatives when you have to add police/fire/EMS to the mix.
David and Penny Rowe	Other: neighbor	Resident/Property Owner	Not Very	The Airport Connector is not needed. It is a waste of money to save 5-6 minutes of commute time to the airport. We do not think the project should progress.
Trevor Pool	Other: neighbors	Resident/Property Owner	Not Very	In favor of widening Squire Davis and Sandy Ridge Roads for better access to I-40. Do not favor spending $180-200 million to save 5-9 minutes while displacing 200 homes, businesses, churches, etc. There are much better things to spend our money on. Why do we need to save 5-9 minutes to the airport when people routinely travel to Raleigh and Charlotte for better prices on flights? Would like to see better consideration of the opinions and thoughts of the residents.
Lee and Gwen Smith	Postcard notice	Resident/Property Owner	-	Do not favor either alternative. The Hybrid Alternative is a waste of tax payers' money because it isn't necessary. The New Location Alternative is also a waste of tax payers' money, but impacts me personally. We built our house ourselves, and plan to retire and die at this place we love so much. There is no value the State could place on it that would compensate us. In addition, this is a violation of the Heart of the Triad Land Use Plan. Please notify me of any updates regarding this project.

Name	How did you find out about the workshop?	What best represents your interest in this project?	How important do you believe it is to improve access to the airport?	Comments
Rob Baugh	Other: word of mouth	Resident/Property Owner	-	Spending this amount of money when there are existing options is ridiculous. All elements of the project are unfavorable. Alternative that do not include building new roads should be developed. If the Triad is to grow it should grow in the form of public transportation such as those found in major metropolitan cities not by building unnecessary roads.
Scott Tucker	Other: friend	Resident/Property Owner	Not Very	Do not favor any elements of the project. The proposed project will increase traffic around my residence, which is unfavorable.
Cindy Hayden	Postcard notice	Resident/Property Owner	Important	Supportive of making the airport accessible.
Mark Grunenwald	Newspaper article	Resident/Property Owner	-	Do not favor building new roads. Prefer the improvement of existing corridors as well as reducing the cost of the project.
Billy Clinard	Other: neighbor	Resident/Property Owner	-	New Alternative route at workshop was not the same as High Point Airport Connector Feasibility (FS-0707B) Study page 13 that clearly shows New Location Alternative crossing S. Bunker Hill and proceeding west of S. Bunker Hill Rd. In favor of the Hybrid Alternative. Do not favor the wetlands and floodplain impacts of the New Location Alternative.
Steve Gray	Other: neighbor	Resident/Property Owner	-	In favor of widening the existing roads (NC 68 and/or Sandy Ridge Road). The cost of the proposed projects is not worth saving 9 minutes at most.
Steven Thaggard	Postcard notice	Resident/Property Owner	-	Do not favor any elements of the project. Especially do not favor the Hybrid Alternative because it is too close to my home. NC 68 is more than sufficient as a corridor to the airport.
Scott Lawrence	TV/Radio	Resident/Property Owner	-	Do not favor any elements of the project. Do not favor cutting off Macy Grove Road at I-40 which will prevent fast access to the new hospital. Also not in favor of the section of new road that cuts our animals off from drinking water provided out of our creek. Need more detailed information available to those impacted.
Bob Harman	Other: e-mail from HOA	Resident/Property Owner	Somewhat	-
Lynn Hughes	Postcard notice	Resident/Property Owner	Somewhat	Favor the New Location Alternative because it affects far fewer existing residences and it will provide quicker accessibility to the airport. Do not favor the Hybrid Alternative. There will be increased noise for residents along Sandy Ridge Road and limited accessibility for existing residents. There would have to be a stop light at the intersection of Sandy Ridge Road and Rosemont Drive.
Zhichao Li	Other: Community Board Meeting	Resident/Property Owner	-	Would like to see an explanation of how the project will affect the residents nearby, and what the residents should do now.
Jesse Brinson	Other	Resident/Property Owner	-	-
Otis A. Nunn, Jr.	Newspaper article	Resident/Property Owner	Not Very	Do not favor any elements of the project. I think our tax money could be used in much wiser ways such as holding down property taxes or maybe even helping to create more jobs.
Raymond D. Quance	Postcard notice	Resident/Property Owner	Important	In favor of the proposed speed and ease of access for the project. Prefer the Hybrid Alternative.

Please join us for the

Airport Connector Citizens Informational Workshop

The City of High Point will hold a Citizens Informational Workshop to discuss the proposed High Point Airport Connector project that will extend from the US 311/NC 66 interchange in Forsyth County to the NC 68/Future I-73 interchange near Piedmont Triad International Airport in Guilford County. Two alternatives are currently under consideration. City staff and consultants will be on-hand to present information, answer questions, and receive comments regarding the proposed project. If you are unable to attend the workshop, comment forms and project maps can be accessed through the High Point Department of Transportation's website, http://www.hpdot.net/hpmpo/projects/NS-Airport-Connector/airport.html.

This will be an "open house" style meeting with no formal presentation. Please drop in any time between 5:00 p.m. – 7:00 p.m.

River Landing Clubhouse

1575 John Knox Drive

Colfax, NC 27235

September 20, 2011

5:00 PM until 7:00 PM

The City of High Point will provide auxiliary aids and services for disabled persons who wish to participate in the meeting. For more information or to receive special services, call 336-883-3225, by September 13, 2011.

City of High Point
Department of Transportation
P.O. Box 230
211 South Hamilton Street
High Point, NC 27261

Join us to discuss the

Airport Connector

September 20, 2011
5:00 p.m. – 7:00 p.m.

River Landing Clubhouse
1575 John Knox Drive
Colfax, NC 27235

High Point Airport Connector

State Transportation Improvement Program (STIP) Project No. FS-0707B

Citizens Informational Workshop
Questionnaire and Comment Form

Location: River Landing Clubhouse

Date: Tuesday, September 20, 2011

Time: 5:00 P.M. to 7:00 P.M.

The City of High Point Department of Transportation appreciates your participation in this process. Your comments are important to the project's success. You may leave this form with us after the workshop, or mail it later to the address below. Comment forms and project maps can be accessed through HPDOT's website, http://www.hpdot.net/hpmpo/projects/NS-Airport-Connector/airport.html. Please call us at 883-3225 or email david.hyder@hightpointnc.gov if you have additional questions or comments.

Please mail your comments no later than October 15, 2011 to:

Mr. David Hyder
City of High Point
Department of Transportation
P.O. Box 230
High Point, NC 27261

Please help us track your comments and get information about the project to you by giving us your contact information:

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

E-mail: _____ Telephone: _____

1. How did you find out about today's workshop? [ ] Postcard notice [ ] Newspaper ad [ ] TV/Radio

   [ ] Other (please list): _____

2. What best represents your interest in this project?

   [ ] Resident/Property Owner [ ] Business Owner [ ] Community Group [ ] Church

   [ ] School [ ] Other: _____

3. Were you able to attend the public workshop? [ ] Yes [ ] No

If so, was the information provided useful to you? [ ] Yes [ ] No

What could have been done better?

_____

_____

_____

4. How important do you believe it is to improve access to the airport?

[ ] Not Very [ ] Somewhat [ ] Important [ ] Very Important [ ] Urgent

5. Has your understanding of the project changed as a result of this workshop?

[ ] Yes [ ] No

If Yes,

[ ] better or [ ] worse

6. What elements of the project as presented do you favor, and why?

_____

_____

_____

7. What elements are unfavorable, and why?

_____

_____

_____

8. Are there any features you would like to see included in the project?

_____

_____

_____

9. What action could be taken to earn your support of this project?

_____

_____

_____

10. Do you have any additional comments?

_____

_____

_____

_____

_____

_____

Thank you for your comments.

September 30, 2011

Mr. David Hyder
City of High Point
Department of Transportation
P.O. Box 230
High Point, NC 27261

Subject: **High Point Airport Connector Feasibility (FS-0707B)**

Dear David:

Thank you for the opportunity to comment on the alternatives under evaluation in the High Point Airport Connector Feasibility Study. I write to convey comments on behalf of the Greensboro Urban Area MPO.

The Airport Connector Feasibility Study is inconsistent with the findings and methodology in two recent and comprehensive studies of airport area roads conducted by the Greensboro MPO, the Greensboro Airport Area Modeling Study (completed December 2009) and the Sandy Ridge Feasibility Study FS-0707A (completed January 2011).

Thank you for deemphasizing the alternatives north of I-40 at the public meeting rather than presenting information on the study's detailed recommendations north of I-40 (inside the Greensboro MPO area). That was helpful in reducing public confusion, especially for those who had attended previous meetings on the Sandy Ridge Road Feasibility Study.

The Sandy Ridge and Airport Area Modeling studies recommended widening existing Sandy Ridge Road to West Market Street (currently being widened under project R-2611) in sequence with widening Pleasant Ridge Road from West Market to NC 68. A Sandy Ridge Interchange configuration was also recommended. The studies found that while an extension of Sandy Ridge Road could be a beneficial component of the surface street network, a high capacity Sandy Ridge extension directly to the airport would be incompatible with economic development goals, access needs, current land uses, and environmental constraints in this area. Also, it would pull traffic off of NC 68 and I-40 and yield relatively small delay reduction benefits given the high construction cost it would involve.

The Greensboro MPO anticipates using the Sandy Ridge and Airport Area Modeling studies as a guide to development of the future Long Range Transportation Plan networks in this area. The Greensboro and High Point MPOs have an excellent opportunity to coordinate on future year

network development as both organizations gear up for the development of the 2035 LRTP update later this year. Such discussions may be further aided by recent discussions between Greensboro, High Point, Winston-Salem and Kernersville officials about potential planned roadway network changes in this area in the future.

I look forward to coordinating with you on coordination of the Long Range Transportation Plan Update. In the mean time, please feel free to contact me if you would like to discuss future roadway plans.

Sincerely,

Tyler Meyer, AICP, Chair
Greensboro Urban Area MPO Technical Coordinating Committee

cc: Robbie Perkins, Chair, Transportation Advisory Committee, Greensboro MPO
Rebecca Smothers, Chair, Transportation Advisory Committee, High Point MPO
Michael Fox, Division 7 Member, Board of Transportation, NCDOT
Mike Mills, PE, Division 7 Engineer, NCDOT
Mark McDonald, PE, Director, High Point DOT
Adam Fischer, PE, Director, Greensboro DOT
Derrick Lewis, PE, Unit Head, Feasibility Studies Unit, NCDOT
Michael Abuya, EI, Transportation Engineer III, Transportation Planning Branch, NCDOT
Lydia McIntyre, EI, Transportation Planning Engineer, Greensboro DOT

Comments of OPPOSITION to: FS-0707B

Any citizen at all concerned about misappropriated public finances, our decaying infrastructure and center city or environmental stewardship should OPPOSE the original plan and new hybrid plan of the North-South or Airport Connector as studied in FS-0707B.

Even as some on Council focus on the potential for a land-grab from the condemnations by the North-South Connector, High Point neglects its infrastructure. I cringe driving Lindsay Street and Quaker Lane, two connectors to our hospital and medical/surgical centers, just waiting for the sinkholes to fall in and swallow cars, as happened in Greensboro.

Recently, a Washington Post Writers Group article states, ""Engineers Warn Infrastructure Crumbling" — accompanied by stories saying it's imperative we spend billions, sometimes trillions to fix America's deteriorating roadways, bridges, water and sewer systems.

Keeping public infrastructure in shape, like fixing leaks and keeping a house's roof in decent condition, is the essence of common sense.

So how should limited funds be expended? Especially on the roadways front, it's time to think again, asserts Charles Marohn, a civil engineer.

We built a massive interstate highway system — "and then built more," Marohn asserts: "We poured money into highways, county roads and local streets. We have so much transportation infrastructure — a huge proportion of it with no productivity — that every level of government is now choking on maintenance costs."

Quite often, Marohn contends, we maintain our "overbuilt" road network while virtually every other city and state service is being cut. Big dollar sums simply "feed strip development." And on our superhighways, he argues, "We've spent trillions to save seconds in the first and last mile of each trip" — resulting in "the fake prosperity of a land use pattern that is bankrupting us, housing bubble and all."

The American Society of Civil Engineers (ASCE) issued its latest report, arguing the United States needs to spend $1.7 trillion on repair of existing highways and transit systems just by 2020 — doubling current budget projections.

So what should cities, towns and counties do in the face of radically reduced federal and state dollars for roads? Marohn has a harsh prescription: Focus on the roads you can actually build and maintain from your own resources.

Some localities are already there. Growing numbers of hard-pressed counties — in Michigan, Alabama, Pennsylvania and other states — are actually "depaving," tearing up lightly-used asphalt rural roads and replacing them with gravel or other rough surfaces.

Other long-term, cost-saving strategies also exist for local governments. Examples: stop extending or improving roads for strip development. Focus on downtowns and neighborhood centers. Shift zoning to encourage mixed use instead of separated residential and commercial areas. Repeal sprawl inducements.

The "Complete Streets" movement offers a promising model to make roads safer and "multi-use" friendly by redesigning them to be welcoming for everyone — walkers, cyclists, transit users, and motor vehicles. Costs for maintaining and replacing antiquated urban water and sewer systems may be even tougher to deal with. But like roadways, they can more easily be made cost-efficient in areas of concentrated rather than spread-out development.

The harsh fact, however, is that no matter how well we reform land use and transportation planning, America's need for prompt infrastructure repair and replacement remains a massive challenge.

In addition to its beauty and local history, Squire Davis Road is a unique economic contributor to the local and state economy. On our 1-mile country road we grow hay, tobacco, soybeans, corn and other produce. We have equine activities including, horse boarding, riding lessons and summer horse camp for children.

It's past time for High Point planners to focus financially on the core of the city or all headlights will continue to head outward at the end of the workday as citizens look for a place to dine, shop or relax. Far too much time and money has been wasted on feasibility studies for roads that will never pass an environmental impact statement. The Enterprise just reported that High Point has no money for sidewalks and our air quality is failing. Planning such as this is the reason North Carolina leads the nation is loss of farmland, even though agri-business is our number one economic contributor. What are you thinking?

Please accept these comments of opposition to anything except for widening Sandy Ridge-Johnson Street to I-40 as needed for traffic. High Point had already indicated there was some funding for this other version of an "Airport Connector" that would be far less costly to taxpayers and far less environmentally damaging. I have also included the Resolution on Climate Change from NCATR where I serve on the Board of Directors and Chair of the Ethics Committee.

Cathy M. Poole
1607A Squire Davis Road Kernersville, N.C. 27284 Phone: 336-869-0256

NC Alliance for Transportation Reform
Resolution Proposing Legislation for NC Climate Change Policy

The North Carolina Department of Transportation and the North Carolina Department of Environment and Natural Resources have an obligation to adopt policies addressing the impacts associated with Global Climate Change in Long-term Planning and Environmental Review Programs.

Whereas, unequivocal evidence documented by the Intergovernmental Panel on Climate Change in four comprehensive assessments over the past twenty (20) years, the conclusions of which were unanimously endorsed by the national academies of science in all the world's leading nations, including the United States, Canada, India, Russia, the United Kingdom, Brazil, France, Italy, Germany, and Japan, indicate projections of the worst-case outcome have understated how serious the climate change crisis is and how rapidly it is growing; and

Whereas, greenhouse gasses are causing the Earth's temperature to rise, resulting in global climate change. In 2006, over twenty percent (20%) of the world's total energy-related carbon dioxide was emitted by the United States, and eighty seven percent (87%) of greenhouse gas emissions in the United States were related to fossil fuel combustion; and greenhouse gas emissions have increased seventy percent (70%) between 1970 and 2004; and

Whereas, The International Energy Agency's analysis of the 800 largest oil fields worldwide reported in 2008 that the majority of the largest fields are already past peak production rate and the predicted declines in production are now accelerating at twice the rate predicted in 2007; and

Whereas, the United States is spending half a trillion dollars per year for foreign oil, making the U.S. current account deficit impossible to manage and the value of the dollar increasingly vulnerable, threatening our national economy and national security; and

Whereas, failure to reduce greenhouse gas emissions increases the likelihood of catastrophic impacts of climate change from melting ice sheets and rising sea levels, widespread land and marine species extinction, intensified natural disasters, threatened water supplies, and a public health crisis; and

Whereas, North Carolina's population and annual vehicle miles traveled per person are increasing rapidly and transportation accounts for one-third of all U.S. end-use sector carbon dioxide emissions; and, according to the NC Climate Action Advisory Group, as of 2007, thirty-six states have completed state level Climate Action Plans, but North Carolina has not; and

Whereas, reducing greenhouse gas emissions is a shared responsibility requiring a collaborative effort, bold approaches, and new policies on the part of government agencies and private sector entities to address the implications of Global Climate Change on the State of North Carolina.

NOW THEREFORE BE IT RESOLVED, NCATR URGES THE ADOPTION OF LEGISLATION REQUIRING THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES TO GIVE PRIMARY CONSIDERATION TO THE IMPACTS OF GLOBAL WARMING IN THEIR LONG-TERM PLANNING AND ENVIRONMENTAL REVIEW PROGRAMS.

SIGNATURE: Joe McDonald

PRINTED NAME: Joe McDonald

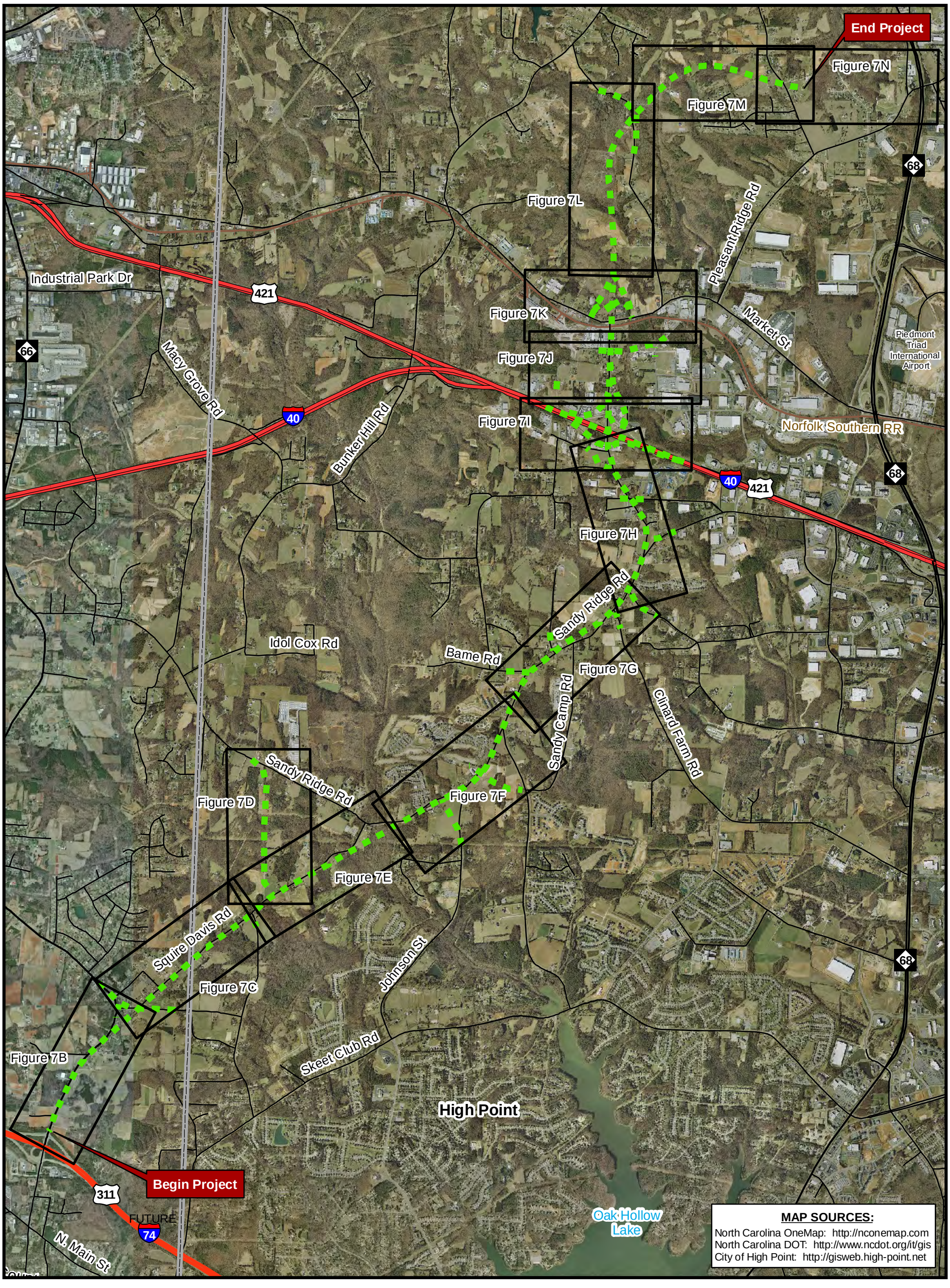
TITLE: President, North Carolina Alliance for Transportation Reform (Contact Info: P.O. Box 70, Hoffman, NC 28347; 910/281-5271; joemc@mindspring.com)

DATE: September 25, 2010

Appendix F – Conceptual Design Sheets

Figures 7A – 7N: Hybrid Alternative Concept Design

Figures 8A – 8M: New Location Concept Design



Legend

- Hybrid Alternative
- Interstate
- US Highway
- NC Highway
- State Road
- Railroad
- County Boundary
- Figure Number

HNTB

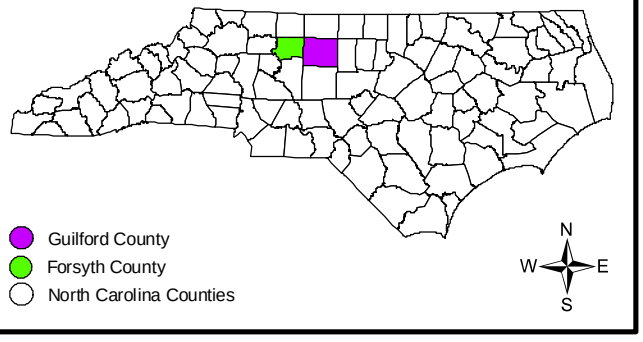
Figure 7A

Hybrid Alternative Sheet Index

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

Miles
0 0.4 0.8 1.6



Legend

- Proposed Estimated ROW
- Parcels

Limits of Construction:

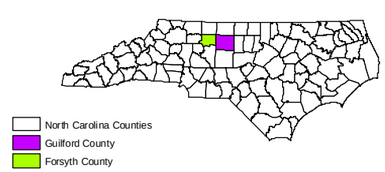
- Cut
- Fill
- Transition
- Stream/Creek
- Water Body

Figure 7B

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

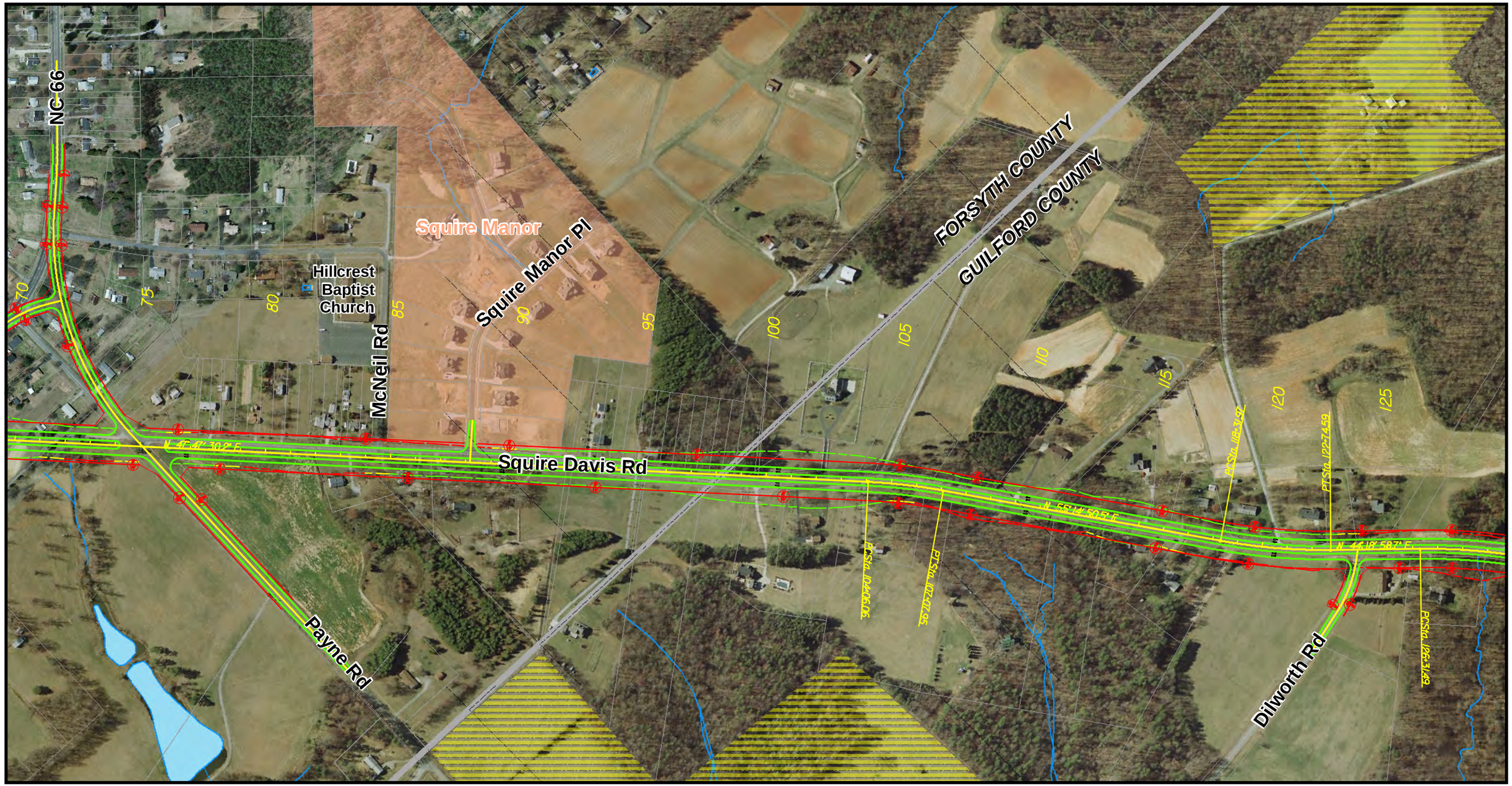
January 2011



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

0 105 210 420 630 840 Feet



Legend

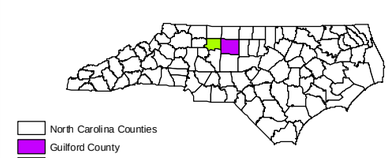
- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
- Stream/Creek
- Water Body
- Parcels
- County Boundary
- Voluntary Ag. District
- Residential Subdivisions

Figure 7C

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

0 100 200 400 600 800 Feet

Legend

- Proposed Estimated ROW
- Stream/Creek

Limits of Construction:

- Cut
- Fill
- Transition
- Water Body
- 100 Year Floodplain
- Voluntary Ag. District
- Parcels
- Conservation Property

HIGH POINT

HNTB

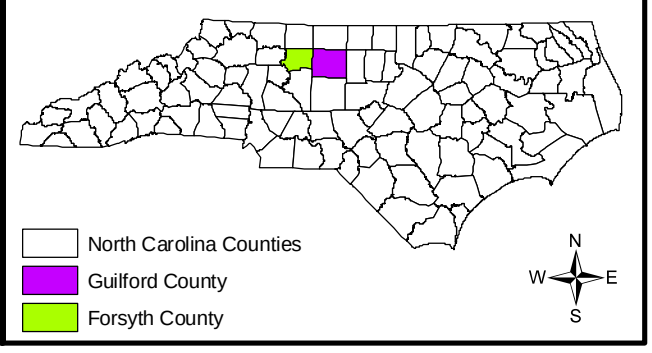
Figure 7D

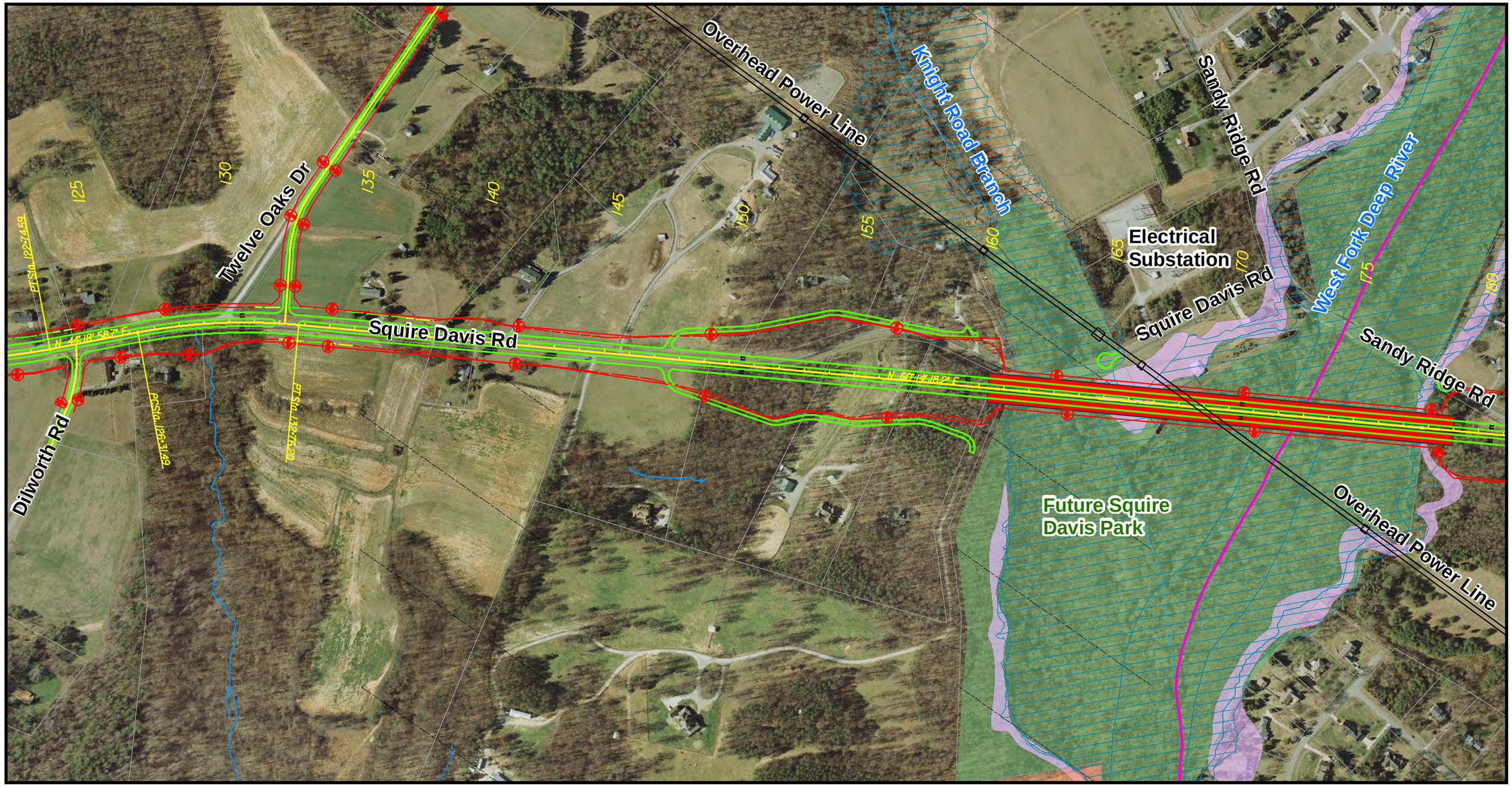
Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

Feet
0 215 430 860





Legend

- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
- Stream/Creek
- 303(d) Water Body
- Parcels
- Residential Subdivisions
- Park Property
- 100 Year Floodplain
- 500 Year Floodplain

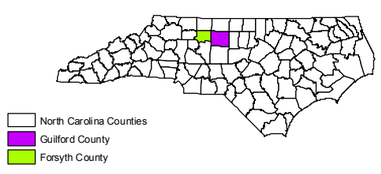
Figure 7E

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

HNTB



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

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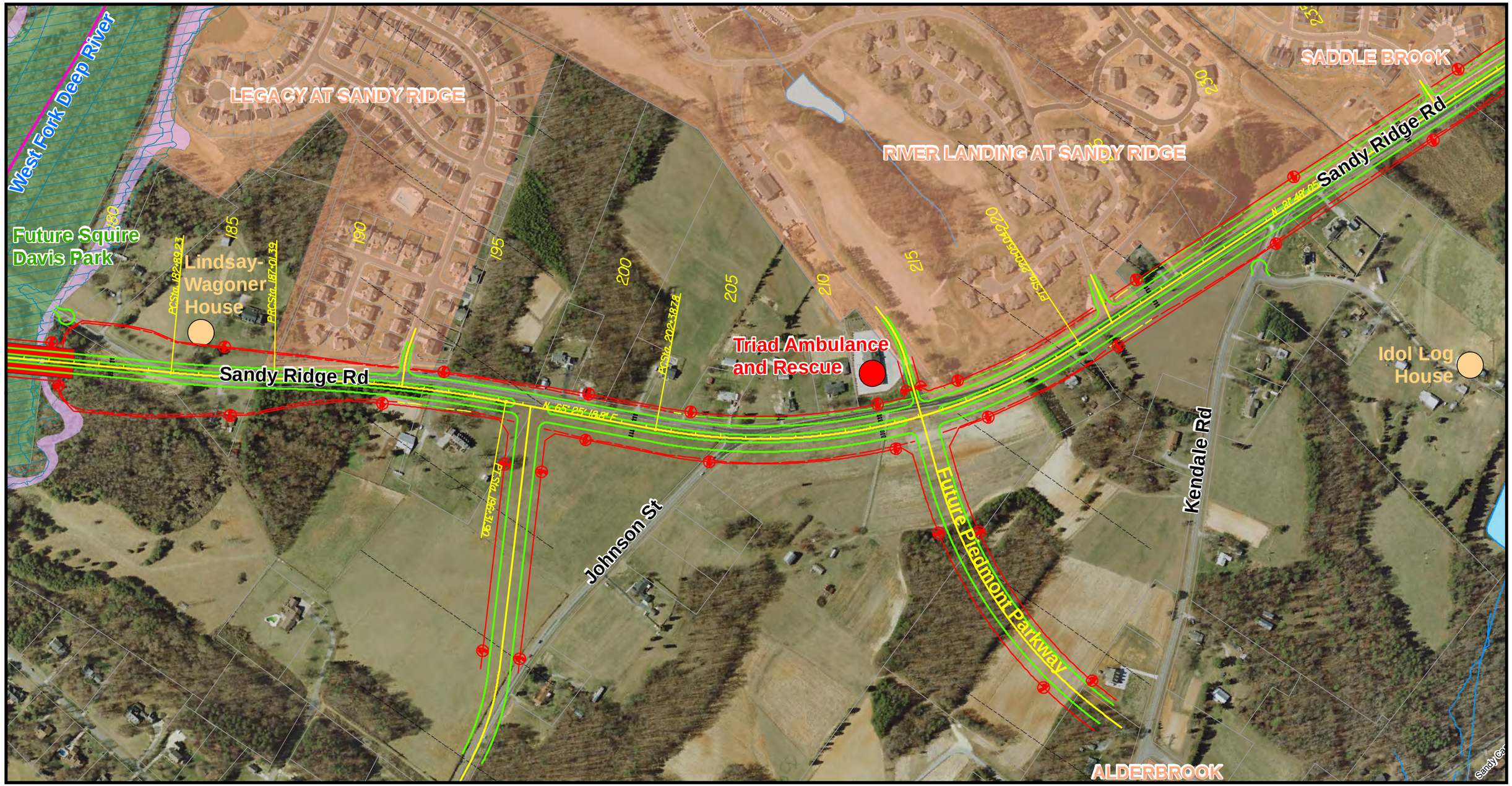


Legend

- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
- Stream/Creek
- 303(d) Water Body
- Parcels
- Residentail Subdivisions
- Park Property
- 100 Year Floodplain
- 500 Year Floodplain
- Fire or Rescue Station
- Guilford County Historical Property

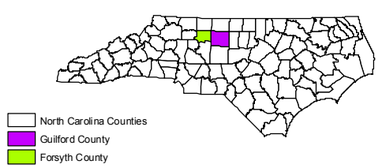
Figure 7F

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

HNTB



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

0 100 200 400 600 800 Feet

Legend

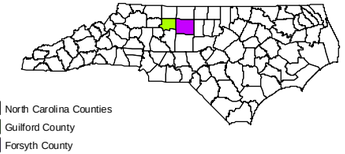
- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
- Stream/Creek
- Water Body
- Parcels
- State Owned Land
- Residentail Subdivisions
- Fire or Rescue Station
- Guilford County Historical Property

Figure 7G

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

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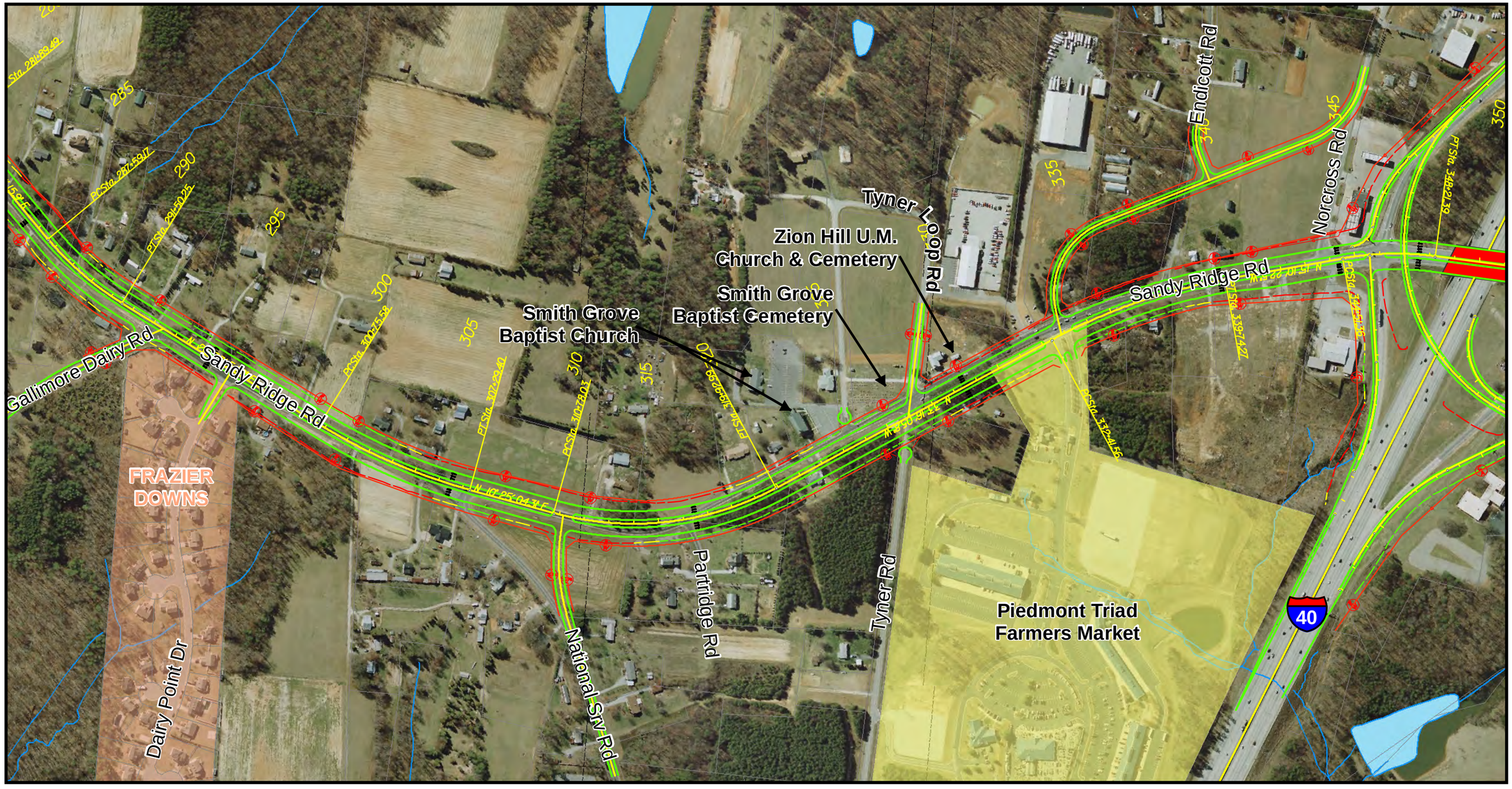


Legend

- Proposed Estimated ROW
- Stream/Creek

Limits of Construction:

- Cut
- Fill
- Transition

- Water Body
- Parcels
- State Owned Land
- Residential Subdivisions

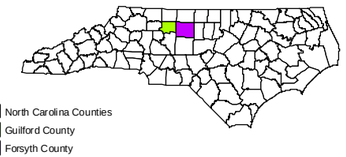
Figure 7H

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

April 2011

HNTB



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

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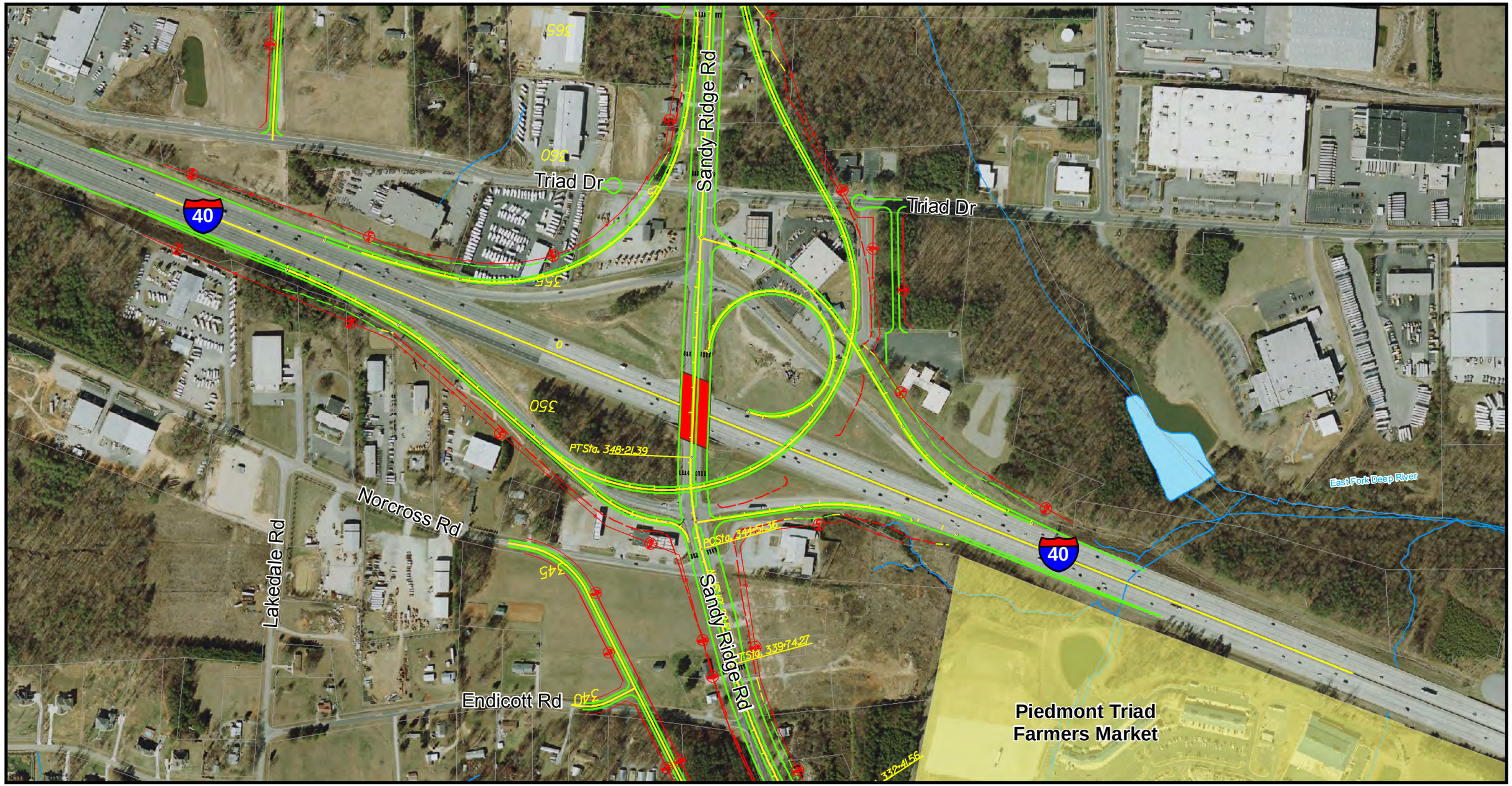


Legend

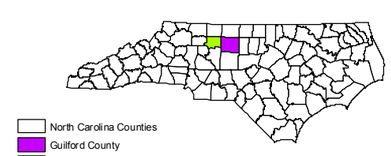
- Proposed Estimated ROW
- **Limits of Construction:**
- Cut
- Fill
- Transition
- Stream/Creek
- Water Body
- Parcels
- State Owned Land

Figure 7I

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

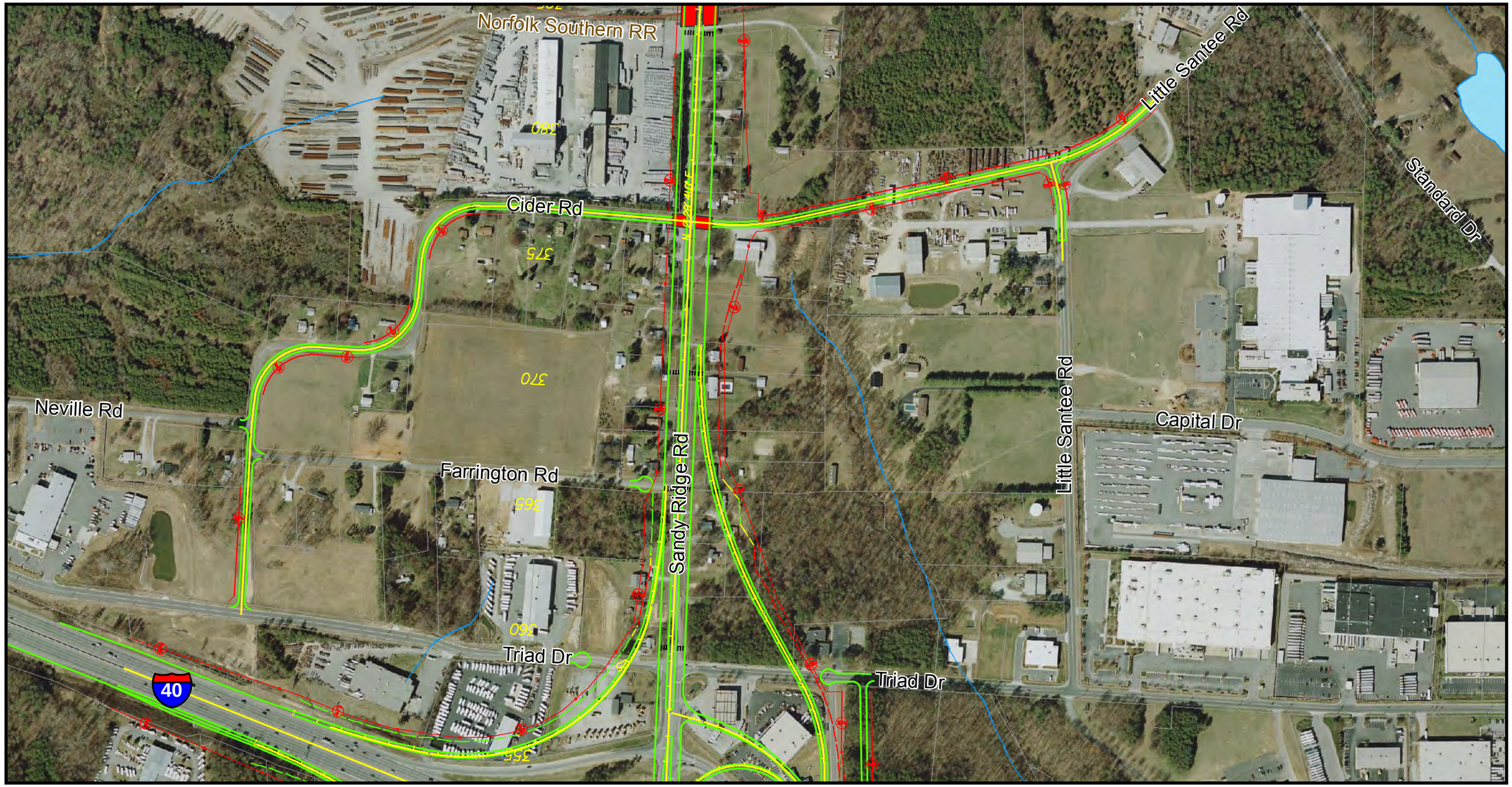


MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

N W E S

0 100 200 400 600 800 Feet



Legend

- Proposed Estimated ROW
- Railroad

Limits of Construction:

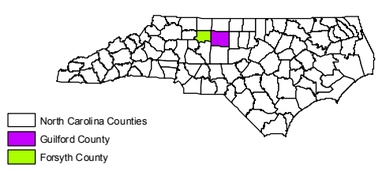
- Cut
- Fill
- Transition
- Stream/Creek
- Water Body
- Parcels

Figure 7J

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

N W E S

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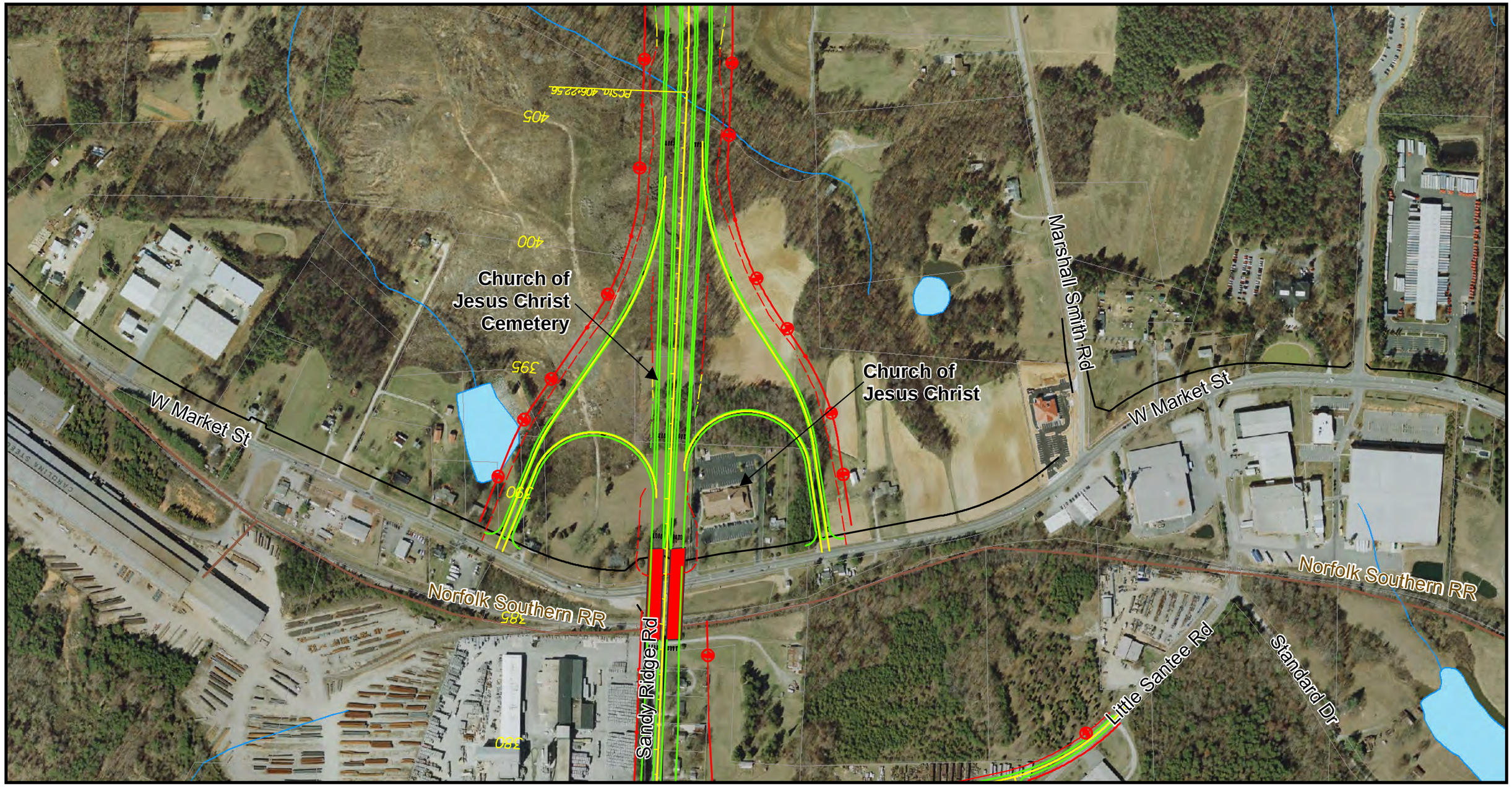


Legend

- Proposed Estimated ROW
- STIP R-2611 Proposed ROW

Limits of Construction:

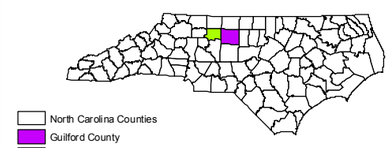
- Cut
- Fill
- Transition
- Railroad
- Stream/Creek
- Water Body
- Parcels

Figure 7K

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

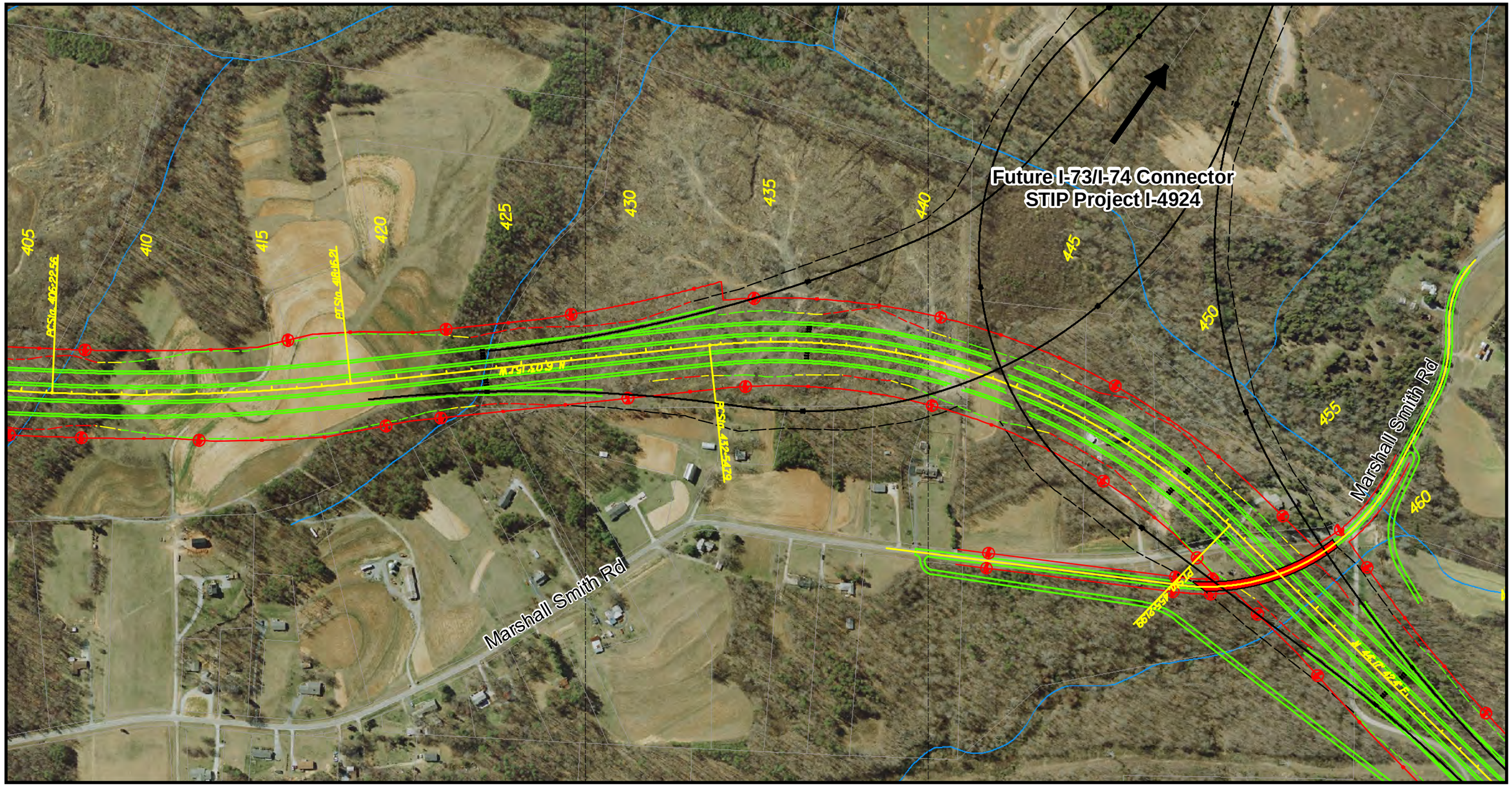


MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

N W E S

0 105 210 420 630 840 Feet



Legend

- Proposed Estimated ROW
- Stream/Creek

Limits of Construction:

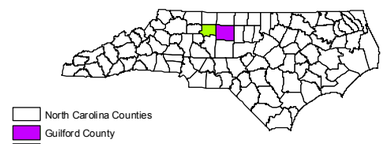
- Cut
- Fill
- Transition
- Future Facility
- Water Body
- Parcels

Figure 7L

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

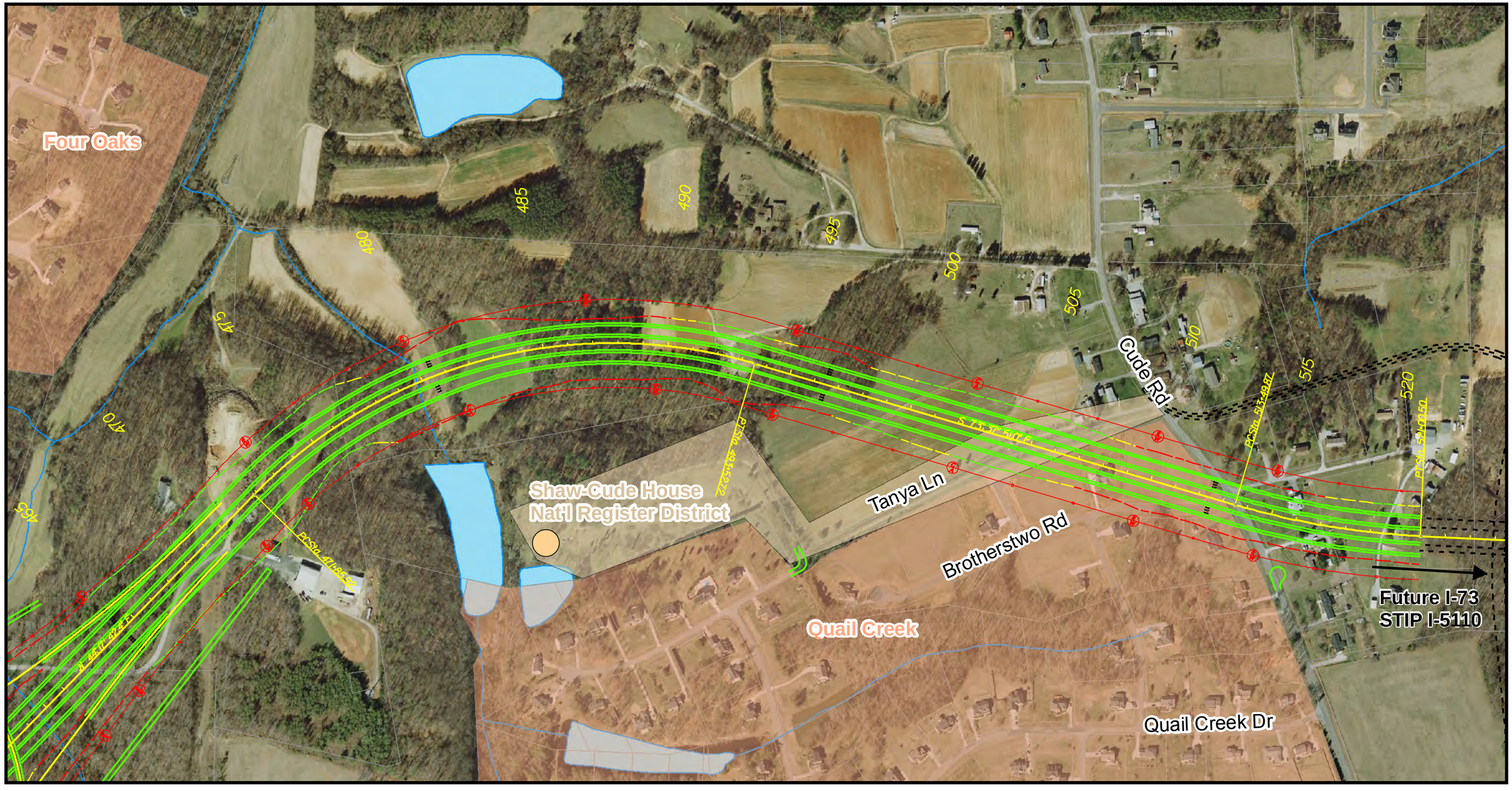
January 2011



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

0 100 200 400 600 800 Feet



Legend

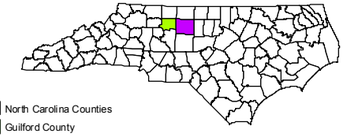
- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
- Stream/Creek
- Water Body
- Parcels
- Nat'l Register District
- Guilford County Historical Property
- Residential Subdivisions

Figure 7M

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

N W E S

0 105 210 420 630 840 Feet

Legend

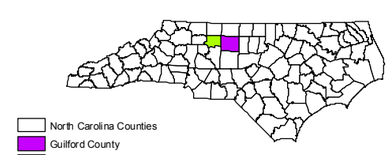
- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
- Stream/Creek
- 303(d) Water Body
- Water Body
- Parcels
- Nat'l Register District
- Guilford County Historical Property
- Residential Subdivisions

Figure 7N

Hybrid Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

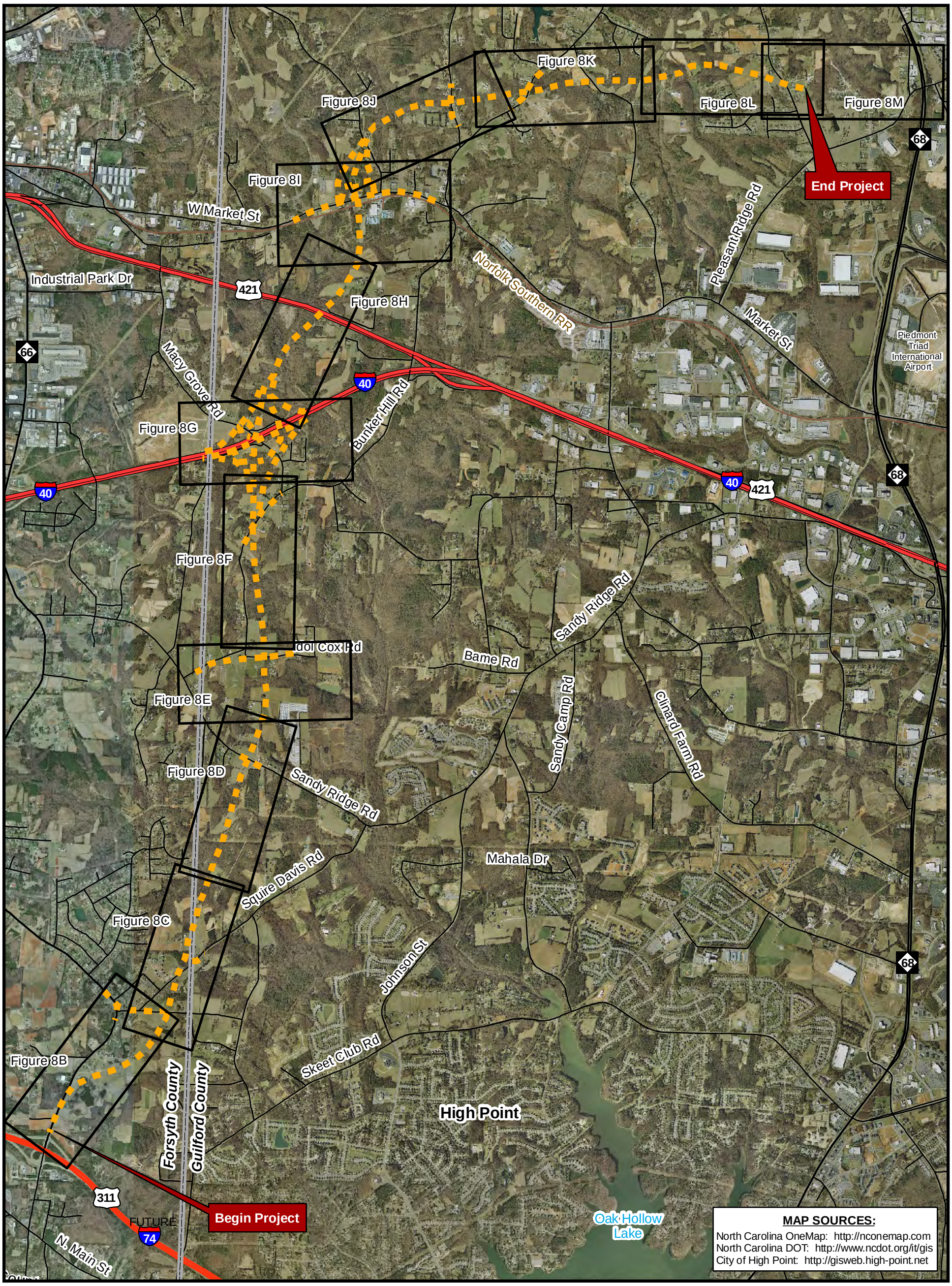


MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

N W E S

0 105 210 420 630 840 Feet



Legend

- New Location Alternative
- Interstate
- US Highway
- NC Highway
- State Road
- Railroad
- County Boundary
- Figure Number

HNTB

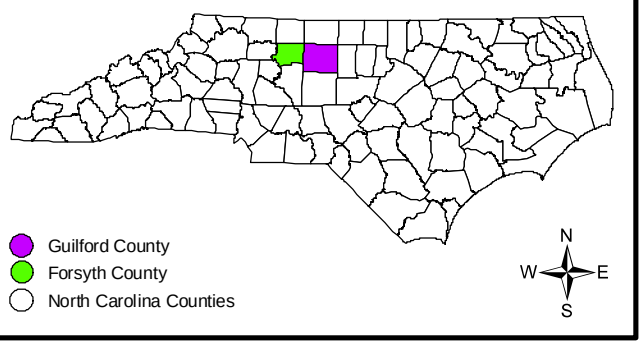
Figure 8A

New Location Alternative Sheet Index

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

Miles
0 0.4 0.8 1.6



Legend

- Proposed Estimated ROW
- Limits of Construction:
  - Cut
  - Fill
  - Transition
- Stream/Creek
- Water Body
- Parcels

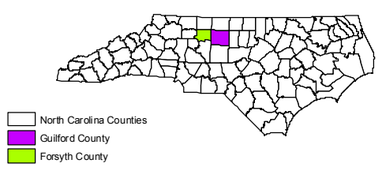
Figure 8B

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

HNTB



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

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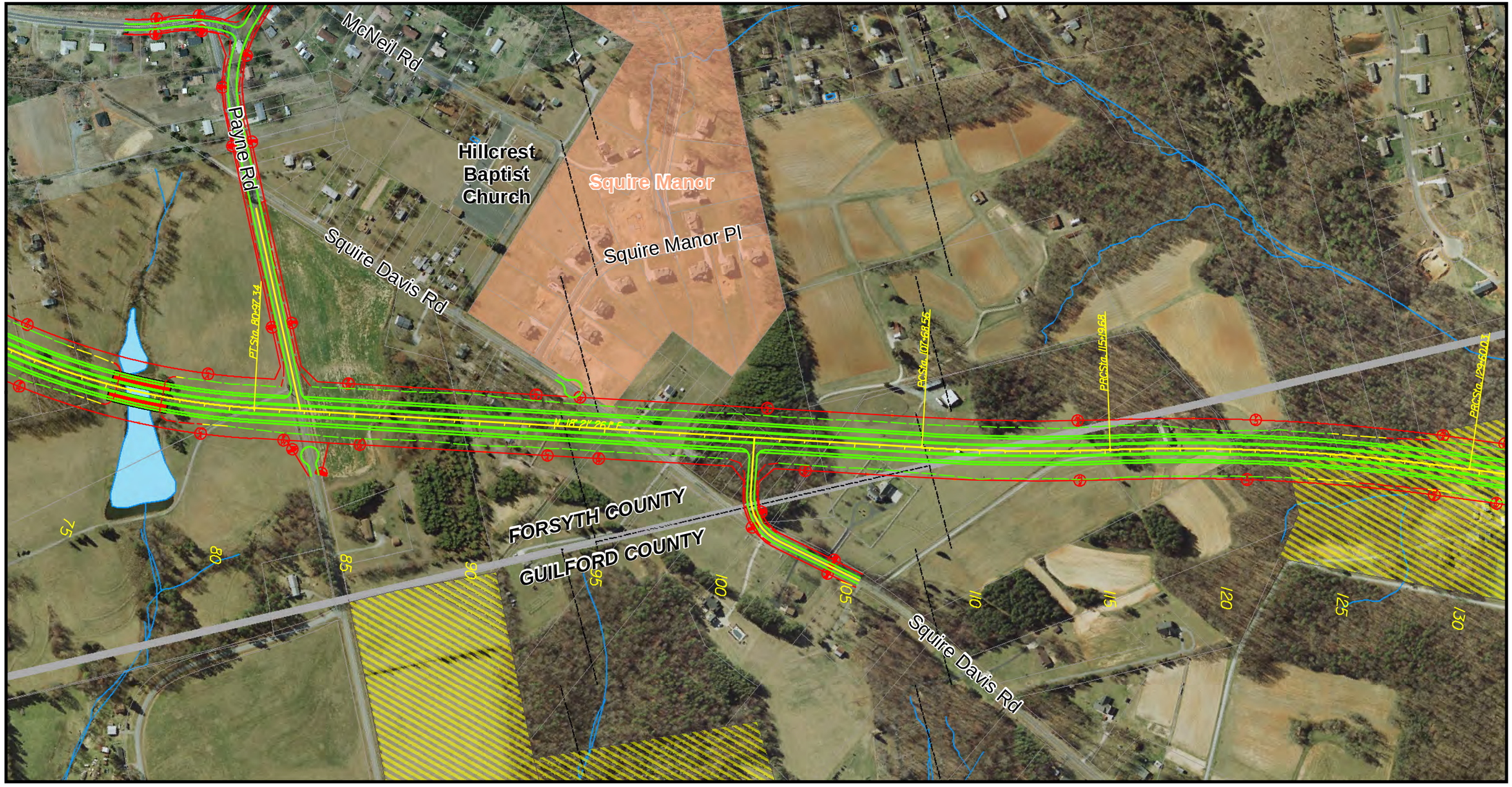


Legend

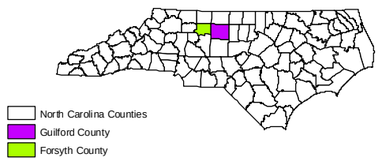
- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
- Stream/Creek
- Water Body
- Parcels
- County Boundary
- Voluntary Ag. District
- Residential Subdivisions

Figure 8C

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011



MAP SOURCES:

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North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

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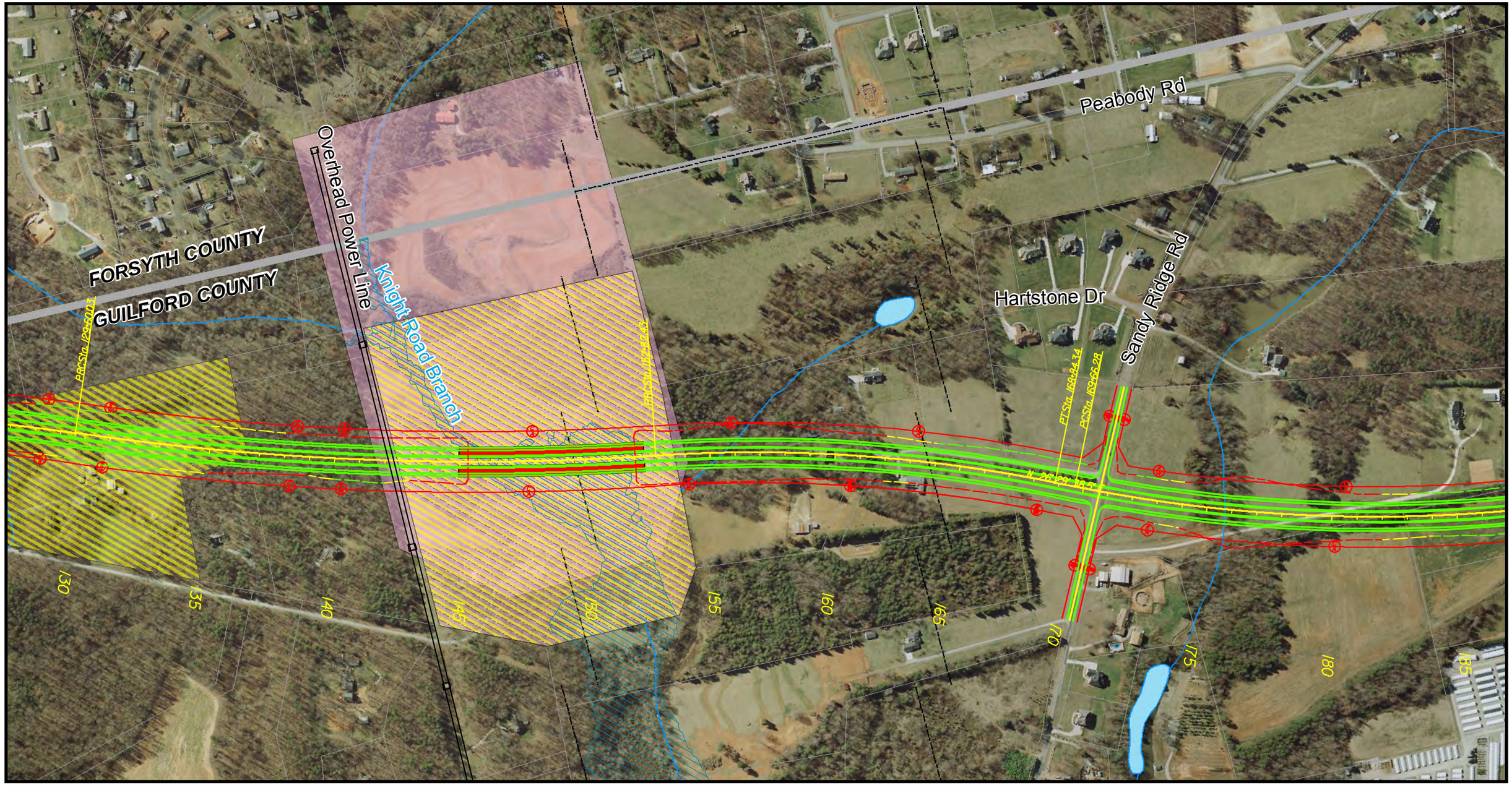


Legend

- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
- Stream/Creek
- Water Body
- County Boundary
- Parcels
- Voluntary Ag. District
- Conservation Property
- 100 Year Floodplain

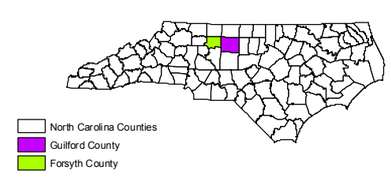
Figure 8D

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

HNTB



MAP SOURCES:

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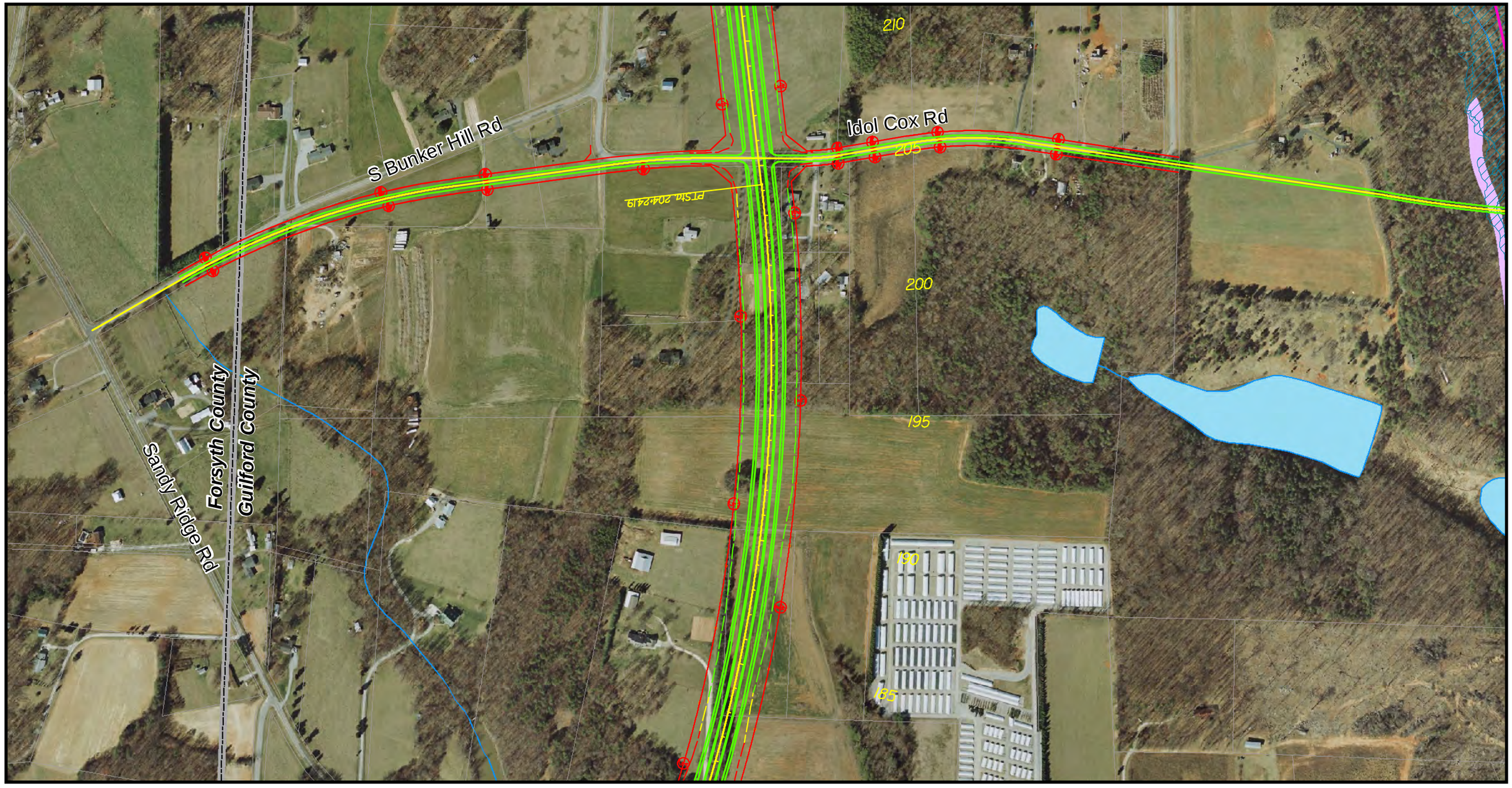
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

0 100 200 400 600 800 Feet



Legend

- Proposed Estimated ROW
- Stream/Creek

Limits of Construction:

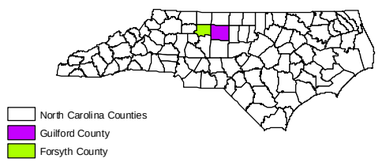
- Cut
- Fill
- Transition
- Water Body
- Parcels
- 100 Year Floodplain
- 500 Year Floodplain

Figure 8E

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011



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City of High Point: http://gisweb.high-point.net

N W E S

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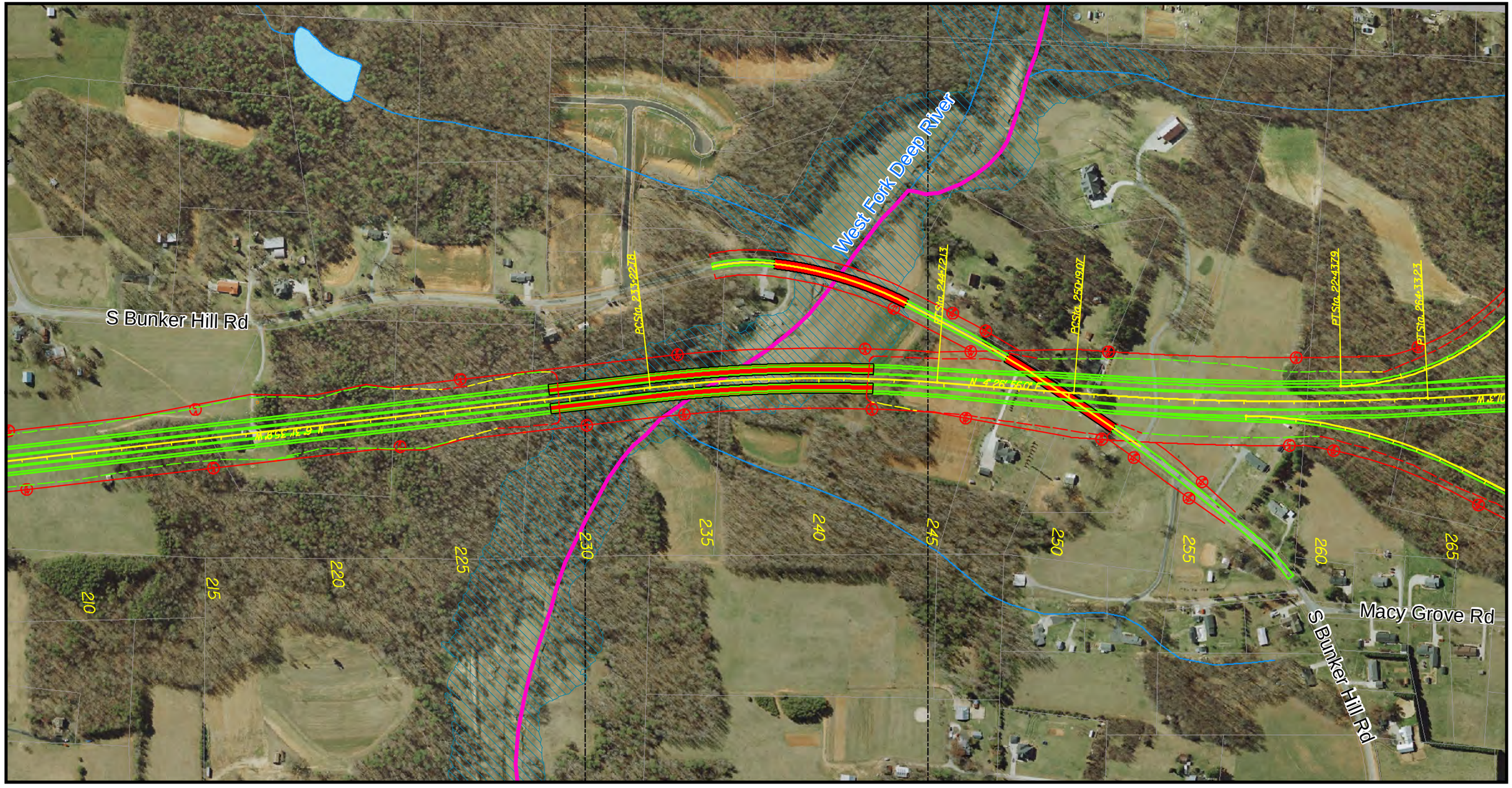


Legend

- Proposed Estimated ROW
- Stream/Creek

Limits of Construction:

- Cut
- Fill
- Transition
- 303(d) Water Body
- Water Body
- Parcels
- 100 Year Floodplain

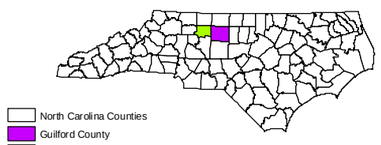
Figure 8F

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

April 2011

HNTB



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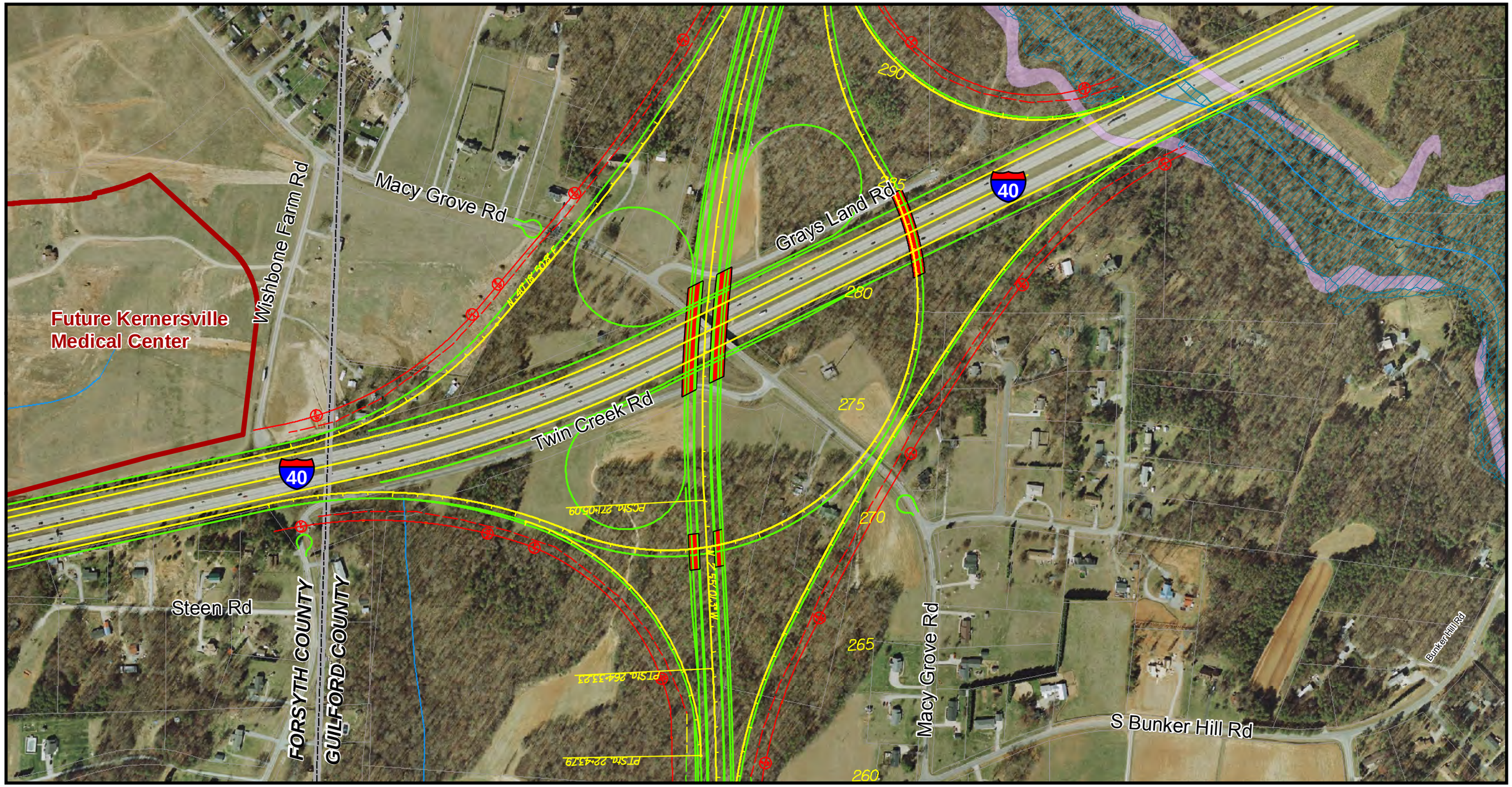
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

0 100 200 400 600 800 Feet



Legend

- Proposed Estimated ROW
- Stream/Creek
- 100 Year Floodplain
- Water Body
- 500 Year Floodplain
- Parcels
- County Boundary

Limits of Construction:

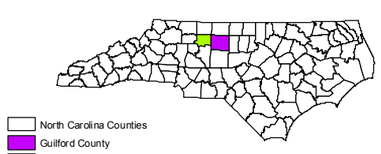
- Cut
- Fill
- Transition

Figure 8G

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011



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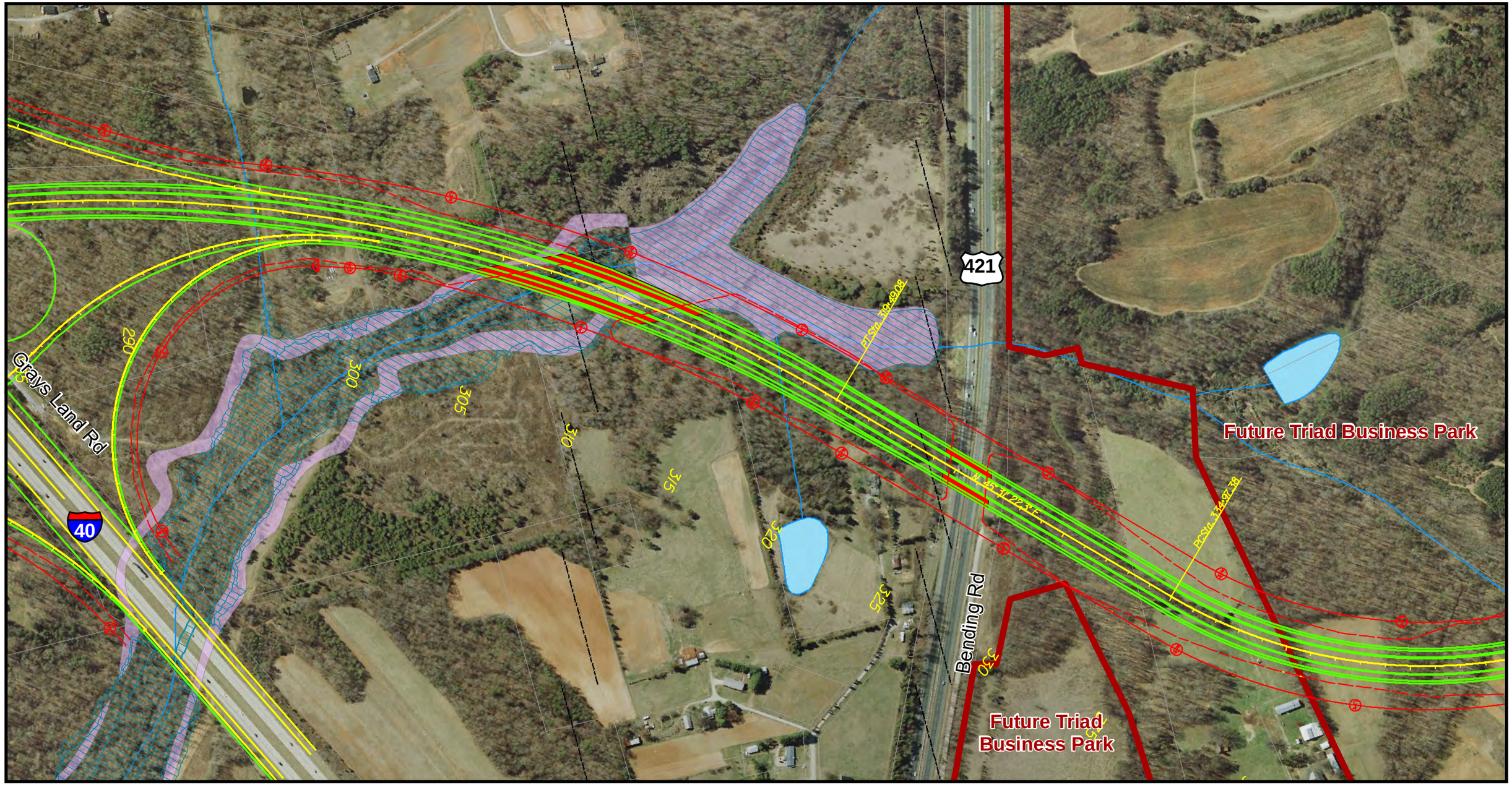
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

N W E S

0 100 200 400 600 800 Feet



Legend

- Proposed Estimated ROW
- Stream/Creek

Limits of Construction:

- Cut
- Fill
- Transition
- Water Body
- Parcels
- 100 Year Floodplain
- 500 Year Floodplain

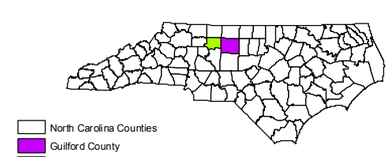
Figure 8H

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

HNTB



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

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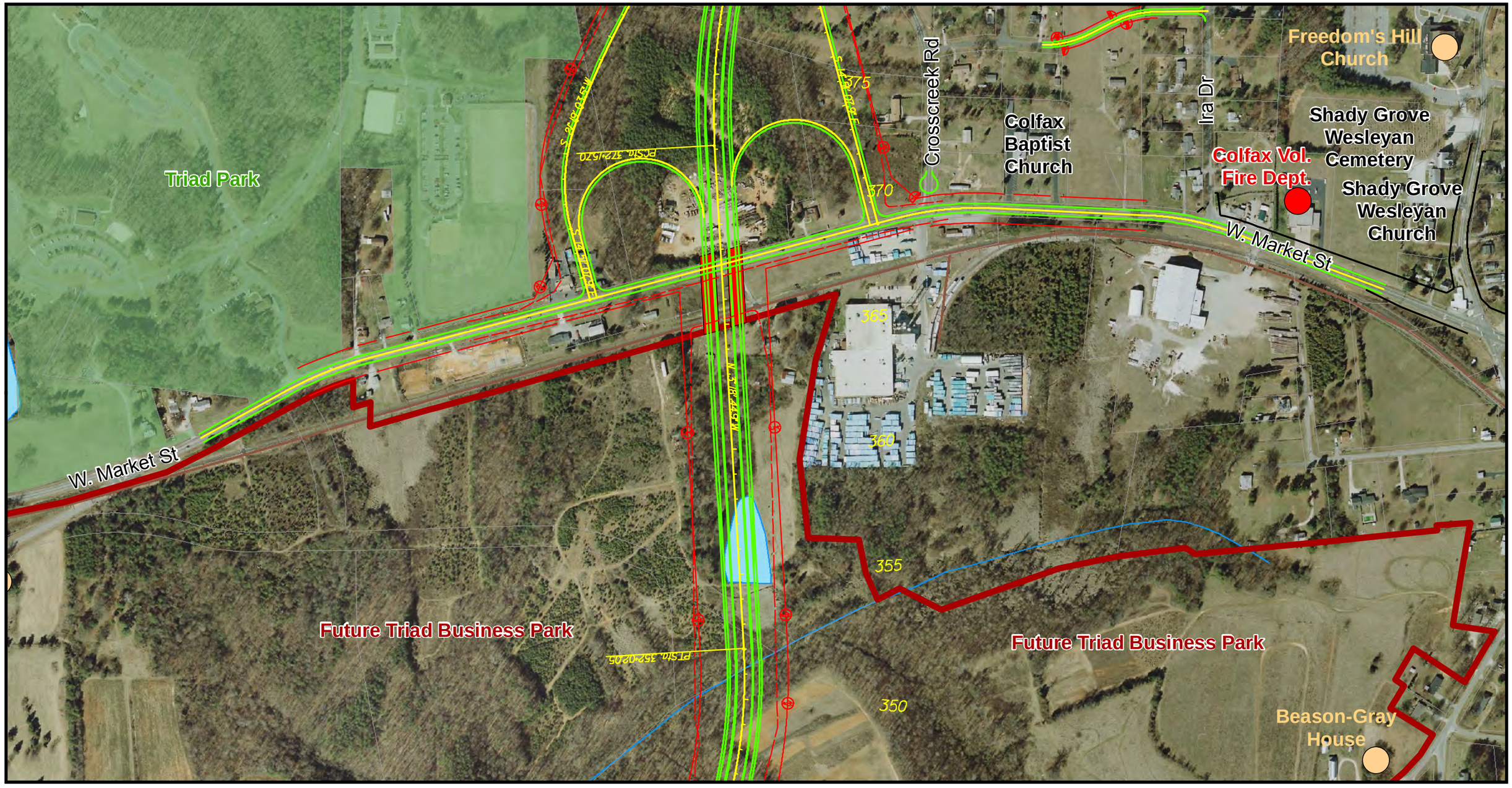


Legend

- Proposed Estimated ROW
- STIP R-2611 Proposed ROW

Limits of Construction:

- Cut
- Fill
- Transition

- Stream/Creek
- Water Body
- Parcels
- Park Property

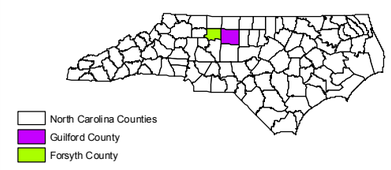
- Fire or Rescue Station
- Guilford County Historical Property

Figure 8I

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

N W E S

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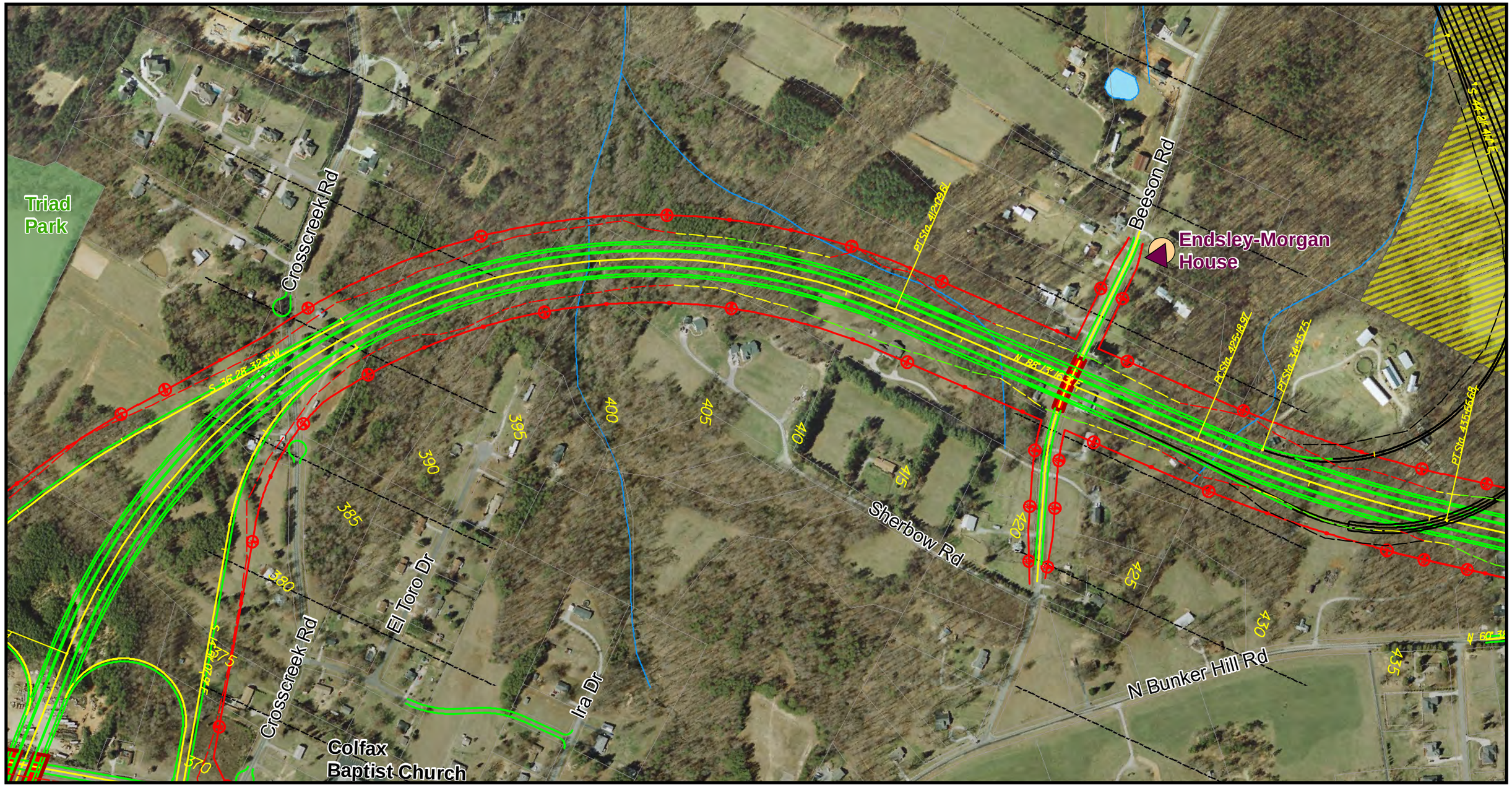


Legend

- Proposed Estimated ROW

Limits of Construction:

- Cut
- Fill
- Transition
- Future Facility

- Parcels
- Stream/Creek
- Water Body
- Nat'l Register Structure
- Guilford County Historical Property
- Voluntary Ag. District
- Park Property

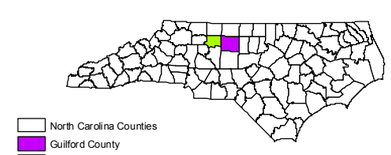
Figure 8J

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

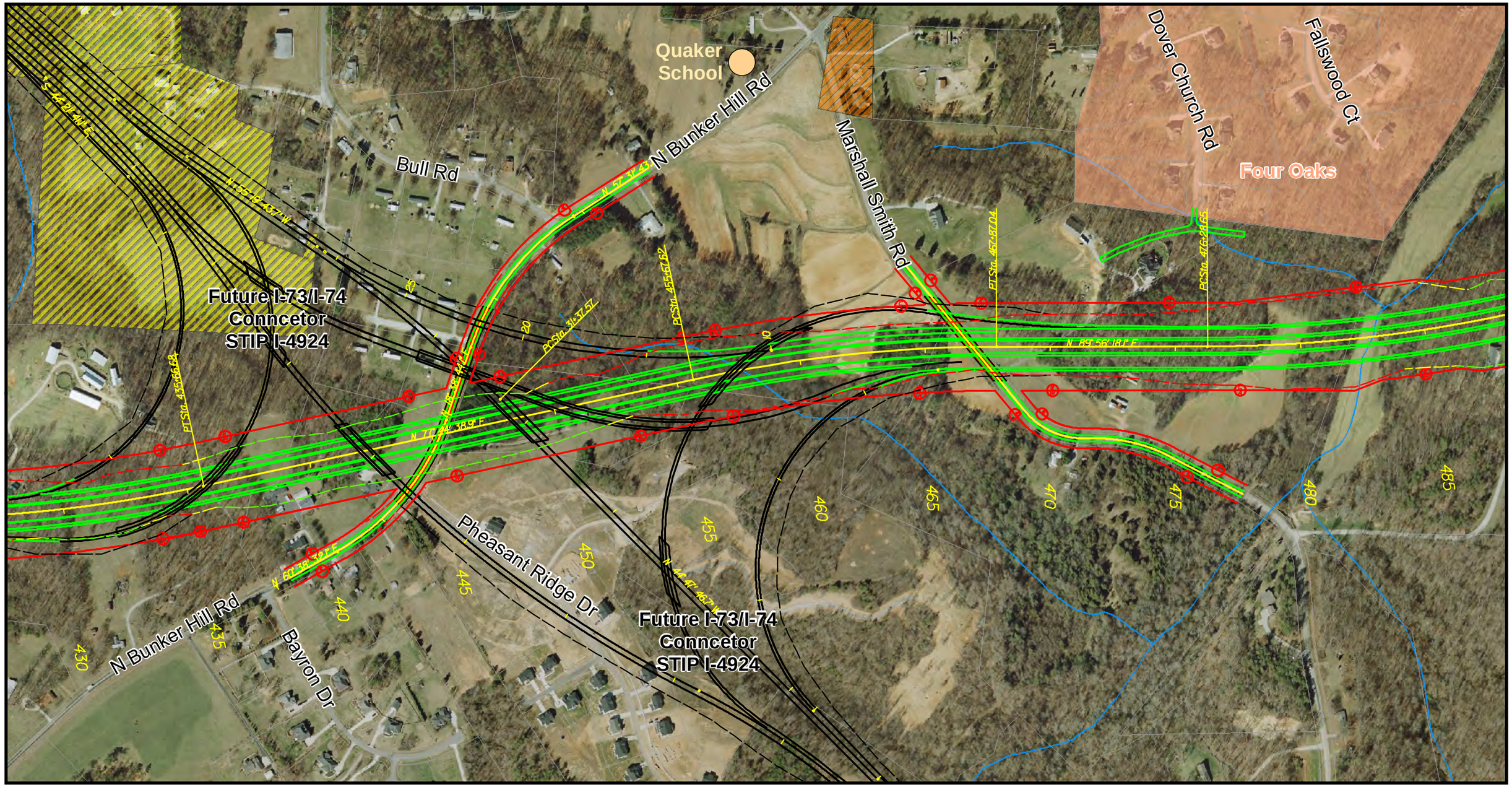
HNTB



MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

0 100 200 400 600 800 Feet



Legend

- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
  - Future Facility
- Stream/Creek
- Water Body
- Parcels
- Voluntary Ag. District
- Guilford County Historical Property
- Hazardous Substance Disposal Site
- Residential Subdivisions

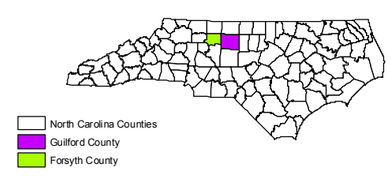
Figure 8K

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011

HNTB

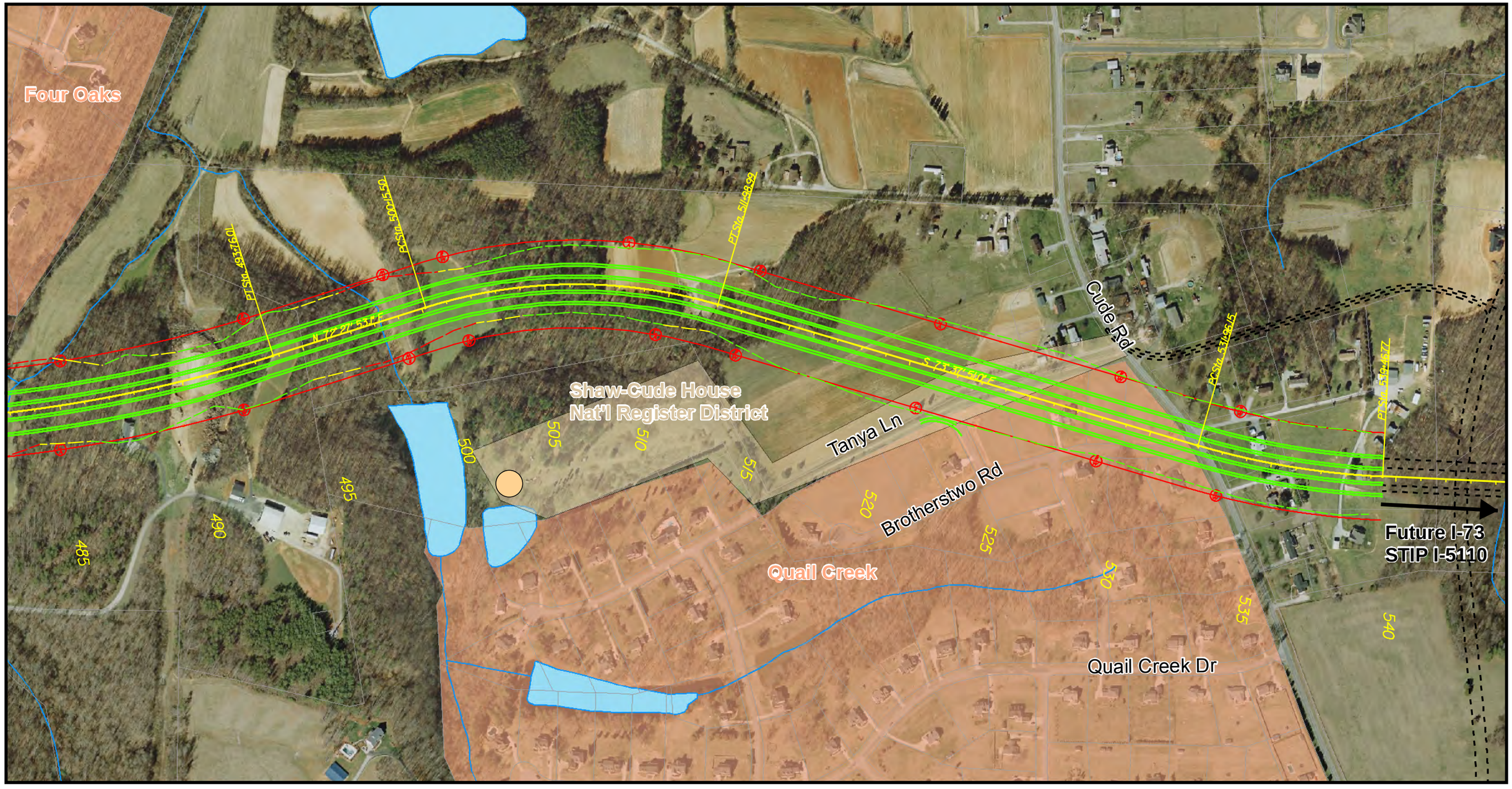


MAP SOURCES:

North Carolina OneMap: http://nconemap.com
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

N W E S

0 100 200 400 600 800 Feet



Legend

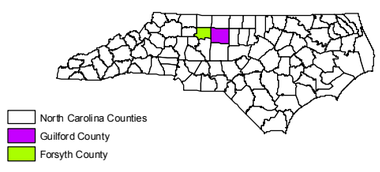
- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
- Stream/Creek
- Water Body
- Parcels
- National Register District
- Guilford County Historical Property
- Residential Subdivisions

Figure 8L

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011



MAP SOURCES:

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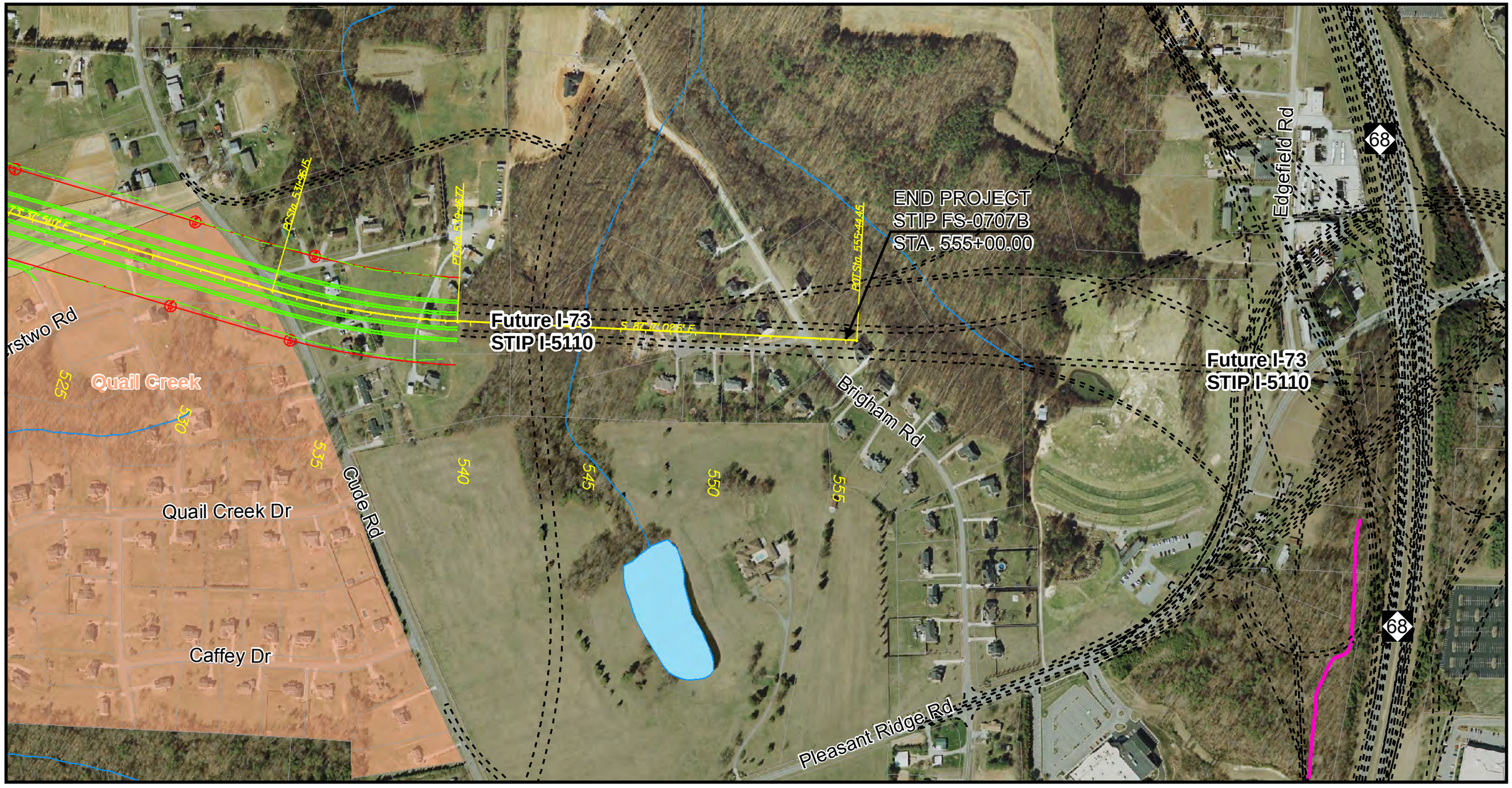
North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

N W E S

0 100 200 400 600 800 Feet



Legend

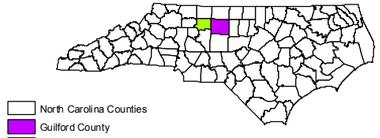
- Proposed Estimated ROW
- **Limits of Construction:**
  - Cut
  - Fill
  - Transition
- Stream/Creek
- 303(d) Water Body
- Water Body
- Parcels
- National Register District
- Guilford County Historical Property
- Residential Subdivisions

Figure 8M

New Location Alternative

City of High Point
Airport Connector Feasibility Study
STIP Project FS-0707B

January 2011



MAP SOURCES:

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North Carolina DOT: http://www.ncdot.org/it/gis
City of High Point: http://gisweb.high-point.net

N W E S

0 100 200 400 600 800 Feet