

**APPENDIX G
QUALITATIVE INDIRECT AND CUMULATIVE
EFFECTS ASSESSMENT**

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INDIRECT AND CUMULATIVE EFFECTS ASSESSMENT

MONROE CONNECTOR/BYPASS Mecklenburg & Union Counties

STIP Project Nos. R-3329 and R-2559



January 2009

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1. SUMMARY

The North Carolina Turnpike Authority (NCTA) is currently preparing a Draft Environmental Impact Statement (EIS) for State Transportation Improvement Program (STIP) Project R-3329/R-2559. This project is commonly referred to as the Monroe Connector/Bypass. The proposed action includes capacity improvements in the US 74 corridor from near I-485 in Mecklenburg County to between the towns of Wingate and Marshville in Union County, a distance of approximately 21 miles (see **Figure 1**). The purpose of the proposed action is to improve mobility and capacity within the project study area by providing a facility in the US 74 corridor that allows for high-speed regional travel consistent with the designations of the North Carolina Strategic Highway Corridor system and the North Carolina Intrastate System, while maintaining access to properties along existing US 74.

Planning and design is currently being conducted by the NCTA. Construction is expected to begin in 2010, and it is anticipated that the facility would be open to traffic in 2013.

Study Methodology

The purpose of this Indirect and Cumulative Effects Assessment is to qualitatively evaluate potential indirect and cumulative effects associated with implementation of the Monroe Connector/Bypass project. A study area, referred to as the Future Land Use Study Area (FLUSA), was established as the area within which the analysis scenarios have the potential to induce land use changes to determine the data collection and analysis area. An approximate radius of 5 miles around the analysis scenarios was determined to be appropriate for the FLUSA. Additionally, five zones were delineated within the FLUSA to better discuss specific areas that are most likely to experience land use changes. The boundaries of the zones follow major roadway features and political boundaries and are described in Section 3.1. The timeframe for analysis was established to be 1980 through 2030. Three primary analysis scenarios are qualitatively evaluated in this report: the No-Build Alternative, New Location Alternatives, and Upgrade Existing US 74 Alternative.

Scoping meetings were held with environmental resource and regulatory agencies and with local government representatives prior to the start of this study. The purpose of these meetings was to collaboratively identify the sensitive resources for evaluation, identify the study methodologies, define the study area boundaries, and confirm the timeframe for the assessment. Based on these meetings, the following resources were identified as notable resources to be evaluated for potential indirect impacts:

- federally-protected species
- water resources

- architectural features and historic places
- parks and recreational resources
- prime farmland soils

In addition, the following resources were identified to be evaluated from a cumulative effects perspective:

- water quality and aquatic habitat
- Carolina heelsplitter habitat (Goose Creek watershed)
- terrestrial communities and habitat

Other resources may be directly impacted by the proposed project; however, this assessment will focus on these resources identified during scoping. Potential direct impacts to other resources, including air quality, noise impacts, community resources, and neighborhoods will be evaluated in the Draft EIS.

Existing Conditions

Demographic and Employment Trends

- Union County is one of seven counties included in the Charlotte-Gastonia-Rock Hill NC-SC Metropolitan Statistical Area (MSA). According to the US Census Bureau, the total population of the MSA was 1,499,293 in 2000, and there was a 29.0% increase in population between 1990 and 2000.
- Union County and Mecklenburg County experienced rapid population growth between 1990 and 2000 (46.9%, and 36.0%, respectively). The Union County towns of Weddington (76.1%), Indian Trail (513.0%) Stallings (49.6%), and Monroe (62.6%) experienced growth even more rapid growth than in Union County as a whole. The same holds true for Matthews (62.1%) in Mecklenburg County.
- The Demographic Area grew less quickly (36.2%) than Union County (46.9%) during the same period of time, and approximately the same as Mecklenburg County (36.0%); however, it grew more rapidly than North Carolina as a whole (21.4%).
- Close proximity to Charlotte, a regional employment center, has likely spurred much of the population growth in Union County. Local planners confirm that another important factor influencing growth patterns over the last couple of decades has been the construction of I-485 in Mecklenburg County. Because of the improved access and mobility it provides, families and employers have been able to locate further from downtown Charlotte, where land is more readily available and less expensive.

- According to the North Carolina Office of State Budget and Management, Union County would continue to grow at a rate at least two times that of the State over the next couple of decades. Mecklenburg County growth rates are expected to be lower than Union County's, but still greater than those in North Carolina.
- The Mecklenburg County portion of the FLUSA is almost completely developed, with commercial and industrial uses concentrated along Independence Boulevard (US 74) and Old Monroe Road/Old Charlotte Highway (SR 1009), and residential uses elsewhere.

Existing Land Use Patterns

- In the Union County portion of the FLUSA, residential uses tend to be concentrated in the towns adjacent to the Mecklenburg County border (Weddington, Indian Trail, Stallings, Hemby Bridge and Lake Park), and in the vicinity of the New Location Alternatives between Mecklenburg County and US 601. Land uses along existing US 74 between I-485 and Marshville chiefly include commercial and industrial businesses. Commercial and industrial uses are also concentrated around the Monroe Regional Airport (off of Old Monroe Road/Old Charlotte Highway (SR 1009)).
- The unincorporated area east of US 601 is generally undeveloped, with scattered residential and institutional uses throughout. Local planners also indicate that the eastern part of Union County remains very active agriculturally.
- The incorporated areas along US 74 are currently provided with water and sewer service. The water service coverage area in Union County includes virtually all of the FLUSA west of US 601, the US 74 corridor, NC 200 north of US 74, and areas surrounding the towns of Wingate and Marshville. Service is not available along NC 205 (north of Marshville and US 74) and east of NC 207 (south of US 74). The sewer service coverage area includes virtually all of the US 74 corridor, and the municipalities along US 74. Service is not available between NC 200 and US 601 (south of US 74), along NC 200 north of the planned New Location Alternatives, or in the extreme eastern part of the FLUSA, other than in the municipalities. Local staff also indicates that Unionville and Fairview do not have sewer service except for at some institutional uses.

Environmental Regulations

- According to the North Carolina Department of Environment and Natural Resources, Division of Water Quality (NCDENR-DWQ) website, the City of Charlotte is identified by the US Environmental Protection Agency (USEPA) as a Phase I storm water permittee. As required by National Pollutant Discharge Elimination System (NPDES) regulations, Charlotte must develop and

implement a storm water program including public education, illicit discharge detection and elimination, storm sewer system and land use mapping, and analytical monitoring.

- According to the NCDENR-DWQ website, the towns of Matthews, Mint Hill, Weddington, Wesley Chapel, Indian Trail, Stallings, Hemby Bridge, Lake Park and Monroe, and both Mecklenburg and Union Counties are identified by the USEPA as Phase II storm water permittees. Consequently, as required by NPDES regulations, they must, at a minimum, develop, implement, and enforce a storm water program designed to reduce the discharge of pollutants from the municipal separate storm sewer system (MS4).
- Construction or land development activities that disturb one acre of land or more require an erosion and sediment control plan under the state's Sedimentation Pollution Control Act (SPCA) administered by the NC Division of Land Resources. Site disturbances of less than one acre require the use of NCDOT's Best Management Practices (BMPs), but a site plan is not required.
- Development is regulated through density restrictions and buffers in the Stewarts Creek/Lake Twitty watershed and the Richardson Creek watershed.
- The Surface Water Improvement and Management (SWIM) initiative established buffer zones along creeks in Charlotte, Mecklenburg County and Matthews and Mint Hill. No construction or development is allowed in the buffer zones. SWIM is an on-going, strategic, long-range effort that includes pollution reduction, erosion control, water quality monitoring, watershed planning and stream restoration and enhancement projects.
- Union County regulates development in Goose, Duck, Sixmile and Waxhaw Creek through enforcing stream buffers of 100 feet on both sides of intermittent streams and 200 feet on both sides of perennial streams. NCDENR is proposing two new rule "options" to protect the Carolina heelsplitter in Goose Creek watershed (which also includes Duck Creek). Both options have site-specific management strategies for controlling stormwater, wastewater discharges and ammonia toxicity. The options vary in the amount of buffer required on streams.
- Union County requires thirty foot buffers on all intermittent streams throughout the county. An additional 20-foot buffer is necessary for perennial streams (for a total of 50 feet), and for those perennial streams with drainage areas greater than 640 acres, the total buffer should be 100 feet. Municipalities in the FLUSA typically require buffers ranging from 20 feet to 200 feet on intermittent and perennial streams.

- The *Union County Policy for Allocating Wastewater Treatment Capacity* establishes guidelines for allocating limited wastewater capacity in three identified Wastewater Treatment Plants (WWTPs). The specific guidelines within the Policy are intended to: fulfill outstanding legal obligations of Union County; reserve capacity to serve public school facilities, county projects, and other government facilities; promote non-residential development projects in Union County. The Policy sets up three project priority categories and outlines specific requirements that need to be met prior to issuance of new wastewater capacity for treatment at the identified WWTPs. Union County will not accept any new engineering plans for projects within the service areas that are not specifically designated within one of the priority project categories until sufficient additional wastewater treatment capacity becomes available.

Notable Features

- Two federally endangered species have been identified in the USGS quads encompassing the FLUSA. These are the Carolina heelsplitter, a freshwater mussel, and Schweinitz's sunflower. There has been particular concern about the Carolina heelsplitter population in the Goose Creek watershed. Local planners also indicate that the Savannah lilliput is a species of concern. It is listed as a federal species of concern.
- Prime farmland soils are located in the Mecklenburg County portion of the FLUSA, just west of the City of Monroe, and scattered along US 601 and NC 200 north of US 74. Union County planners also indicate that soils are not the most suitable for development near Fairview, in the extreme northwestern part of Union County.
- A search of the NCDENR-DWQ 2006 303(d) List reveals the presence of nine 303(d) impaired water bodies within the FLUSA. These impaired waters are McAlpine Creek, Sixmile Creek, Goose Creek, Crooked Creek, South Fork Crooked Creek, North Fork Crooked Creek, Richardson Creek, Lanes Creek, and Waxhaw Branch. McAlpine Creek, Crooked Creek and Waxhaw Branch are no longer impaired, and have been removed from the NCDENR-DWQ Draft 2008 303(d) List. Little Richardson Creek, Stewarts Creek and Beaverdam Creek have been added to the Draft 2008 List.

Potential Indirect Effects

- If the Monroe Connector/Bypass is not constructed, land use patterns would likely continue as they are currently, with development concentrated in the southeastern part of Mecklenburg County and northwestern part of Union County. The eastern part of Union County would experience little growth in residential, commercial or industrial uses, but the City of Monroe and Union County are promoting commercial and industrial growth.

- If a New Location Alternative is constructed, residential development patterns are expected to continue at relatively the same pace and intensity as the No-Build Alternative in the western and northwestern part of the FLUSA (Zones 1, 2, and 4). These areas tend to be more influenced by proximity to Charlotte and I-485. The New Location Alternatives may influence residential development in the central and eastern part of the FLUSA and Union County in general (Zones 3 and 5), because the project would improve travel time from those areas to Charlotte.
- Variations in New Location Alternative corridors are so small that indirect impacts are not expected to vary by alternative. The slight variations in the interchange locations by alternative are not anticipated to affect the location of residential development. Commercial and industrial development may shift somewhat due to the variations in interchange locations; however, these variations should not affect the quantity or type of development that occurs.
- The Upgrade Existing US 74 Alternative would have similar impacts on residential development as the New Location Alternatives as it would also provide high-speed freeway access to I-485 and the Charlotte-Mecklenburg County metropolitan area. It could induce moderate growth in Zone 3 and high growth in Zone 5. Commercial and industrial uses would remain concentrated along US 74 and near the Monroe Regional Airport.
- In addition, the Upgrade Existing US 74 Alternative would displace more than 500 existing businesses along US 74. It is assumed that many of these would choose to relocate within the FLUSA, along the US 74 corridor or other roadways including Old Monroe Road/Old Charlotte Highway (SR 1009), Rocky River Road (SR 1514), US 601, Secrest Shortcut Road (SR 1501), or other local roads. In some cases, these relocatees may make use of existing buildings; however, in others, they may choose to construct new facilities, which would be an indirect effect of this alternative.
- Given the already strong residential growth in the area, the New Location Alternative and Upgrade Existing US 74 Alternative would not cause major shifts in population to the FLUSA, but could increase the pace of development in some parts of the FLUSA, particularly in Zones 3 and 5. Because these alternatives provide increased accessibility, and in some areas new accessibility, they have the potential to encourage residential development occur along the feeder roads to the interchange locations, as well as increased residential densities as compared to current plans. There is moderate potential for additional infill residential development in Zone 3, which has experienced high levels of residential growth in past years, and as well as high potential for new residential growth in Zone 5 where these build alternatives would improve

access and allow for easier and faster commutes to the Charlotte-Mecklenburg urban area.

- It is expected that growth will remain strong in the FLUSA with or without the construction of the Monroe Connector/Bypass project. With the New Location Alternative or the Upgrade Existing US 74 Alternative, it is also expected that some development will shift to land parcels in the vicinity of project interchanges as opposed to locating elsewhere in the FLUSA, depending on the provision of sewer service, which is one of the limiting growth factors in the area. The shift would occur to take advantage of the improved access and visibility that these parcels will have to the new freeway and the reduced commute times to the major employment center in the region.
- Neither the New Location Alternatives nor the Upgrade Existing US 74 Alternative would be expected to induce substantial land use changes or growth in Zone 2, which includes habitat for the federally endangered Carolina heelsplitter. These alternatives would also have low (Zone 3) to moderate (Zone 5) potential for indirect impacts to other sensitive resources including water resources, farmland, and terrestrial communities.

Potential Cumulative Effects

- Cumulative effects are evaluated for water quality and aquatic habitat, Carolina heelsplitter mussel habitat and Goose Creek watershed, and terrestrial habitat. Past, present and future development and infrastructure actions considered in this analysis are described in Section 6.
- The New Location Alternatives would contribute minimally to cumulative effects on water quality and terrestrial habitat, as development is already occurring and expected to continue to occur that is affecting these resources. Local plans are in place that will help minimize cumulative impacts to water quality.
- The New Location Alternatives are not expected to contribute to cumulative effects on the Carolina heelsplitter and Goose Creek watershed.
- The Upgrade Existing US 74 Alternative would potentially have moderate cumulative effects on water quality and terrestrial communities as a result of relocation nearly 500 businesses within the FLUSA, in addition to the induced residential growth expected to occur as a result of the alternative in Zones 3 and 5.

2. INTRODUCTION AND PROJECT BACKGROUND

The purpose of this document is to qualitatively evaluate potential indirect and cumulative effects associated with implementation of the Monroe Connector/Bypass project.

2.1 Introduction

This indirect and cumulative effects (ICE) assessment evaluates the potential land use changes and environmental effects associated with the proposed Monroe Connector/Bypass project. The qualitative approach taken to evaluate ICEs associated with the proposed project follows the process adopted by North Carolina Department of Transportation (NCDOT) in 2001. This report has been formatted into five sections based on the NCDOT process, including:

- Definition of the Future Land Use Study Area (FLUSA) (Step 1)
- Identification of the FLUSA's Direction and Goals (Step 2)
- Inventory of Notable Features (Step 3)
- Identification of Important Impact-Causing Activities (Step 4)
- Identification and Analysis of Potential Indirect/Cumulative Effects (Step 5)

Steps 6-8 (a quantitative assessment) of NCDOT's 8-step process would be conducted on the Preferred Alternative following the approval of the Draft EIS if it is determined by the Federal Highway Administration (FHWA) and the NCTA that such analysis is needed.

For the purposes of this document, the following is a listing of definitions used.

Direct Effect. Direct effects are caused by the proposed action and generally occur at the same time and place as the project. Direct effects of the proposed action will be discussed in the Draft EIS and other subject-specific technical memoranda.

Indirect Effect. Indirect effects “. . . are caused by the action and are later in time and farther removed in distance, but must be reasonably foreseeable.” Indirect effects “may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems” (CEQ 1986, 40 CFR 1508). The terms effect and effects are used synonymously in the CEQ regulations (see 40 CFR 1508.8(b)). It is important to emphasize that indirect effects considered during the National Environmental Policy Act (NEPA) process must be reasonably foreseeable; not every conceivable scenario should be evaluated.

Cumulative Effect. Cumulative effects are “environmental effects resulting from the incremental effects of an activity when added to other past, present and reasonably foreseeable future activities regardless of what entities undertake such actions. Cumulative effects can result from individually minor but collectively significant activities taking place over time and over a broad geographic scale, and can include both direct and indirect effects” (40 CFR 1500 to 1508).

It is important to emphasize that indirect effects considered during the NEPA process must be reasonably foreseeable; not every conceivable scenario should be evaluated (Dubois v. US Department of Agriculture, 102 F.3d 1273, 1286 (1st Circuit 1996)). Indirect effects may occur in three forms: alteration of the environment relating to land use change; development related to the accessibility changes from a proposed transportation project; and effects relating to land use change that may occur with or without the action or project. The focus of this assessment is on the latter two of the three indirect effect forms.

2.2 Project Background

This study is a combination of two projects, the Monroe Connector (R-3329) and the Monroe Bypass (R-2559), previously analyzed by NCDOT. A Monroe Connector study addressed improvements in the US 74 corridor from I-485 to US 601 in the City of Monroe, where it ended at the proposed Monroe Bypass. A Draft Environmental Impact Statement (DEIS) for this project was issued in November 2003; however, a public hearing was never held.

A Monroe Bypass study addressed the US 74 corridor from just west of the City of Monroe to just west of the Town of Marshville. An Environmental Assessment for this project was approved in March 1996, and a Finding of No Significant Impact was issued in June 1997.

In February 2005, the NCTA adopted the Monroe Connector as a toll candidate facility, and in January 2006, the Notice of Intent for the Monroe Connector DEIS was rescinded. In October 2006, NCTA adopted the Monroe Bypass project as a toll candidate facility. The Monroe Connector and Monroe Bypass projects have been combined into a single project. In January 2007, FHWA issued a Notice of Intent to prepare a new EIS for the combined Monroe Connector/Bypass project.

The existing US 74 corridor has statewide, regional, and local importance. It is the major east-west route connecting the Charlotte region, a major population center and freight distribution point, to the North Carolina coast and the State’s largest port at Wilmington. In addition, US 74 is the primary transportation connection between Union County and the City of Charlotte in Mecklenburg County. According to the US Census Bureau (<http://www.census.gov/popest/counties/CO-EST2006-08.html>), Union County is

the fastest growing county in North Carolina based on percent growth from 2000 to 2006. Mecklenburg County and the City of Charlotte serve as the economic hub of the region. Union County is the only county surrounding Mecklenburg County that does not have a controlled-access facility connecting it to Mecklenburg County.

US 74 also serves as an important commercial corridor for Union County residents and businesses, with many retail, commercial, and employment centers having direct access to/from US 74. In Union County, most employment is concentrated in the City of Monroe and along existing US 74.

Currently, the portion of US 74 that is being studied is a four-to-six lane arterial roadway with 26 at-grade signalized intersections, many unsignalized intersections, and numerous commercial and residential driveway connections. The posted speed limits within the study area range from 45 to 55 miles per hour (mph), except for those sections in Wingate and Marshville where the posted speed limit is 35 mph. The average travel speeds range from approximately 20 to 30 mph during the peak morning and evening hours, and are expected to decline to less than 20 mph by 2030. Congestion is high, with one-third of the intersections operating at an unacceptable level of service (LOS) (LOS E or F) during the peak morning and evening hours under existing conditions. LOS is a measure of how efficiently a roadway is operating. Additional information on existing and projected operations of US 74 is included in the *Final Statement of Purpose and Need* (February 2008).

Because of its statewide and regional importance, US 74 has been designated as a Strategic Highway Corridor (SHC) by the NCDOT, and has also been identified in State law as part of the North Carolina Intrastate System (GSS136-178). Both designations specify that this corridor serve high-speed regional travel. The SHC designation specifically identifies the facility as a freeway. The Intrastate System legislation indicates that US 74 should be a multi-lane facility with access control, and grade separations should be provided when warranted by traffic volumes. As explained above, existing US 74 currently does not allow for high-speed regional travel and does not include access control and grade separations, which are warranted by current and projected 2030 traffic volumes. Therefore, existing US 74 is not consistent with the visions of the SHC and Intrastate System.

The Mecklenburg-Union Metropolitan Planning Organization's (MUMPO) Long Range Transportation Plan (LRTP) identifies improvements to the US 74 corridor as a high priority. The LRTP includes plans for a new location freeway from US 74 at I-485 to US 74 west of Marshville with interchanges proposed at the following locations:

- Indian Trail - Fairview Road (SR 1520)
- Unionville - Indian Trail Road (SR 1537)
- Rocky River Road (SR 1514)

- US 601
- NC 200 (Morgan Mill Road)
- Austin Chaney Road (SR 1758)
- Forest Hills School Road (SR 1754)

2.3 Project Purpose

The purpose of the proposed action is to improve mobility and capacity within the project study area by providing a facility in the US 74 corridor that allows for high-speed regional travel consistent with the designations of the North Carolina Strategic Highway Corridor system and the North Carolina Intrastate System, while maintaining access to properties along existing US 74.

2.4 Qualitative Analysis Scenarios

The No-Build Alternative, the Upgrade Existing US 74 Alternative, and two closely spaced New Location Alternatives (which together include 16 end-to-end new location Detailed Study Alternatives) will be evaluated in this document. The Upgrade Existing US 74 Alternative has been eliminated from detailed study as part of the alternatives screening process and therefore is not a Detailed Study Alternative; however, it has been included in this indirect and cumulative effects analysis for informational purposes, at the request of environmental resource and regulatory agencies. Descriptions of the alternatives follow:

No-Build Alternative

The No-Build Alternative is the baseline comparative alternative. The No-Build Alternative assumes that the transportation systems for Union and Mecklenburg counties would evolve as currently planned in the MUMPO LRTP and NCDOT STIP (see Section 4.5), but without major improvements to the existing US 74 corridor from near I-485 to between the towns of Wingate and Marshville.

New Location Alternatives

Sixteen Detailed Study Alternatives are being evaluated in the Draft EIS. All Detailed Study Alternatives begin near I-485 in Mecklenburg County, run northwest of and parallel to the existing US 74 corridor, and end at US 74 between the towns of Wingate and Marshville in Union County. The 16 Detailed Study Alternatives, known as A, B, C, D, A1, B1, C1, D1, A2, B2, C2, D2, A3, B3, C3, and D3, are comprised of combinations of corridor segments to form end-to-end alternative alignments (see **Table 1**), and are depicted in **Figure 1**. All 16 Detailed Study Alternatives are encompassed in two parallel corridors.

For the alignments on new location, a four-lane, median-divided, controlled-access highway was assumed (see **Appendix B** for the cross section). The proposed design

speed is 70 mph for the main lines of the New Location Alternatives. Two 12-foot lanes are proposed for each direction of travel, separated by a 70-foot median. This median width would allow for a future widening to provide three 12-foot travel lanes in each direction without having to purchase additional right of way. The total right of way is proposed to be a minimum of 300 feet, but would be greater around interchanges. All New Location Alternatives are assumed to be tolled.

Table 1. Detailed Study Alternatives Summary		
DSA	DSA Segments	Length (miles)
A	18A 21 22A 31 36 36A 40	20.6
B	18A 21 30 31 36 36A 40	20.5
C	2 21 22A 31 36 36A 40	19.7
D	2 21 30 31 36 36A 40	19.7
A1	18A 21 22A 31 34 34B 40	20.5
B1	18A 21 30 31 34 34B 40	20.5
C1	2 21 22A 31 34 34B 40	19.6
D1	2 21 30 31 34 34B 40	19.6
A2	18A 21 22A 31 36 36B 41	20.6
B2	18A 21 30 31 36 36B 41	20.5
C2	2 21 22A 31 36 36B 41	19.7
D2	2 21 30 31 36 36B 41	19.6
A3	18A 21 22A 31 34 34A 41	20.5
B3	18A 21 30 31 34 34A 41	20.5
C3	2 21 22A 31 34 34A 41	19.6
D3	2 21 30 31 34 34A 41	19.6

Interchanges are proposed at the following locations:

- I-485 at US 74/Stallings Road (SR 1365) with Detailed Study Alternatives A, B, A1, B1, A2, B2, A3, B3
- US 74 east of Stallings Road (SR 1365) with Detailed Study Alternatives C, D, C1, D1, C2, D2, C3, D3
- Indian Trail - Fairview Road (SR 1520)
- Unionville - Indian Trail Road (SR 1367)
- Rocky River Road (SR 1514)
- US 601
- NC 200
- Austin Chaney Road (SR 1758)
- Forest Hills School Road - partial interchange
- US 74 - partial interchange

Upgrade Existing US 74 Alternative

The Upgrade Existing US 74 Alternative would improve existing US 74 within the project limits. This alternative would include conversion of existing US 74 to a

controlled-access toll highway (freeway-type facility). There would be no new location component to this alternative. A frontage road system would be needed in addition to the main travel lanes to provide access to adjacent properties and to serve as the free alternate route to the toll facility. Interchanges were assumed at the same locations as the New Location Alternatives:

- Stallings Road (SR 1365)
- Indian Trail-Fairview Road (SR 1520)
- Unionville-Indian Trail Road (SR 1367)
- Rocky River Road (SR 1514)
- US 601/NC 200
- NC 200 (Morgan Mill Road)
- US 601 (Metro Medical Center Campus)
- Austin Chaney Road (SR 1758)
- Forest Hills School Road

Other major cross-streets would be bridged over or cross under the controlled-access travel lanes. These major cross-streets would have a signalized intersection with each frontage road direction. A dedicated U-turn lane (sometimes referred to as a Texas U-Turn) would be provided for alignments on existing US 74 at each major cross-street to allow frontage road traffic to change direction without traveling through the signalized intersection. Improvements along existing US 74 were assumed to include six lanes for the toll facility and two-lane, one-way frontage roads on either side, for a total of ten lanes. Six lanes were assumed to be needed for the toll facility on existing US 74 (as opposed to four lanes for the new location toll alternatives) based on the fact that a facility constructed along existing US 74 would be carrying through traffic and some local traffic. The total right of way required for the alternative would be approximately 400 feet.

3. STUDY AREA BOUNDARIES (STEP 1)

Spatial and temporal study areas were established as a basis from which to gather and analyze specific demographic, socioeconomic, land use, and environmental data and to further identify any potential indirect and cumulative impacts of the construction of the proposed project.

3.1 Future Land Use Study Area

The NCDOT's and North Carolina Department of Environment and Natural Resources' (NCDENR's) *Guidance for Assessing Indirect and Cumulative Impacts of Transportation Projects in North Carolina (ICI Guidance)* indicates that the development effects of a new or improved roadway facility are most often found up to one mile around an interchange, and up to two to five miles along major feeder roadways to the interchange. Using the *ICI Guidance*, it was determined that the potential for indirect and cumulative effects would be felt within about five miles of the various project alignments (see **Figure 1**). This approximate five-mile radius, referred to as the Future Land Use Study Area (FLUSA), is the area within which the New Location Alternatives and Upgrade Existing US 74 Alternative have the potential to induce land use changes and will determine the data collection and analysis area.

Based on the field survey of local conditions, interviews with local officials, and professional judgment, this area was determined large enough to encompass potential indirect and cumulative effects resulting from the planned Monroe Connector/Bypass.

In order to better discuss specific areas within the FLUSA that are most likely to experience land use changes as a result of the new location facility, the FLUSA was broken into five Zones. The Zone boundaries follow major roadway features as well as political boundaries to account for differentiations in existing and planned land uses and among policies of the various governments in the FLUSA.

- **Zone 1:** Portion of the FLUSA within Mecklenburg County including the towns of Mint Hill and Matthews.
- **Zone 2:** North central areas of the FLUSA roughly north of Idlewild Road (SR 1501), including the Union County portion of Goose Creek Watershed (excluding areas within the Town of Stallings jurisdiction) northern portions of the towns of Hemby Bridge and Indian Trail, and incorporated areas of the towns of Fairview and Unionville within the FLUSA.
- **Zone 3:** Areas of the FLUSA in Union County along US 74 bounded by Idlewild Road (SR 1501) to the north and Old Monroe Road/Old Charlotte Highway

(SR 1009) to the south within the towns of Stallings and Indian Trail, and all areas of the FLUSA within the City of Monroe.

- **Zone 4:** Southwest area of the FLUSA in Union County including portions of the towns of Stallings, Indian Trail, Weddington, and Wesley Chapel south of Old Monroe Road/Old Charlotte Highway (SR 1009) and west of Monroe Regional Airport.
- **Zone 5:** Eastern portion of the FLUSA including areas east of NC 200 and the City of Monroe boundary, including unincorporated portions of Union County and the towns of Wingate and Marshville.

3.2 Demographic Area

The Demographic Area for the Monroe Connector/Bypass was developed in order to analyze the population growth trends for the area encompassing the FLUSA. Census data was used in determining the population growth trends, so the boundaries of the Demographic Area follow Census Tract lines. As a result, the boundaries of the Demographic Area extend beyond the FLUSA. **Figure 2** shows this Demographic Area is generally bounded by the following: the Union County/Stanly County line, Union County/Cabarrus County line and NC 27 to the north; McMullen Creek, McAlpine Creek, and NC 16 to the west; New Town Road (SR 1315), Macedonia Church Road (SR 2106), US 601 and White Store Road (SR 1003) to the south; and, the Union County/Anson County line to the east.

The following US Census Bureau Census Tracts (2000) are included in the Demographic Area for the Monroe Connector/Bypass:

- Mecklenburg County Census Tracts 19.03, and 19.07 – 19.11
- Mecklenburg County Census Tracts 20.03 and 20.04
- Mecklenburg County Census Tract 29.04
- Mecklenburg County Census Tract 30.07, and 30.13 – 30.16
- Mecklenburg County Census Tracts 57.06 – 57.13
- Mecklenburg County Census Tracts 58.11 – 58.17, 58.22 and 58.33
- Union County Census Tract 201
- Union County Census Tracts 202.01 and 202.02
- Union County Census Tracts 203.02 – 203.04
- Union County Census Tracts 204.01 and 204.02
- Union County Census Tract 205
- Union County Census Tract 206
- Union County Census Tract 207
- Union County Census Tract 208

3.3 Timeframe for Analysis

According to the NCDOT/NCDENR *ICI Guidance*, the timeframe for analysis should be short enough in duration to anticipate reasonably foreseeable events, but should be long enough in duration to capture the development and relocation effects that may only transpire over the course of several business cycles. The planning design life of a project (from conception to completion) is usually around 20 years. This is also the time horizon used in most metropolitan planning organization and county-level planning forecasts, including MUMPO's 2030 LRTP, which is currently being updated for year 2035. In addition, population projections from the Office of State Budget and Management are available through 2030. Although the design year for the Monroe Connector/Bypass is 2035, effects related to land use change as a result of the Monroe Connector/Bypass will be qualitatively evaluated through 2030, since the current LRTP and population projections are based on year 2030. For purposes of the cumulative impacts analysis, which includes consideration of past actions, the timeframe includes trends from 1980 through the present, in addition to projections through 2030.

4. STUDY AREA DIRECTION AND GOALS (STEP 2)

4.1 Regional Location Influences and Implications

US 74 is the primary route between Charlotte, Union County, and North Carolina's largest port at Wilmington. The majority of the FLUSA is within Union County, with a small portion extending into Mecklenburg County near I-485. Anson County borders Union County to the east, Stanly and Cabarrus counties to the north, Mecklenburg County to the west, and the State of South Carolina borders Union County to the south. At least a portion of the following cities or towns are within the FLUSA:

- Charlotte (Mecklenburg County)
- Matthews (Mecklenburg County)
- Mint Hill (Mecklenburg County)
- Weddington (Union County)
- Wesley Chapel (Union County)
- Indian Trail (Union County)
- Stallings (Union County)
- Hemby Bridge (Union County)
- Lake Park (Union County)
- Fairview (Union County)
- Unionville (Union County)
- Monroe (Union County)
- Wingate (Union County)
- Marshville (Union County)

According to the US Census Bureau, Union County was the fastest growing county in North Carolina between 2000 and 2006. Close proximity to Charlotte, a regional employment center, has spurred much of this growth. Local planners confirm that another important factor influencing growth patterns over the last couple of decades has been the construction of I-485 in Mecklenburg County. Because of the improved access and mobility it provides, families and employers have been able to locate further from downtown Charlotte, where land is more readily available and less expensive.

Other factors influencing growth include:

- The proposed mass transit corridor along Independence Boulevard (US 74) from downtown Charlotte to the Mecklenburg/Union County line – a 2020 horizon year project in MUMPO's 2030 LRTP;
- The development of the Bridges at Mint Hill (a large retail and entertainment center) – currently in planning and permitting;

- The expansion of Monroe Regional Airport runway, and continued growth in aerospace-oriented businesses surrounding the airport; and
- The continued growth of Central Piedmont Community College (Levine Campus) and Wingate University.

4.2 Demographic and Employment Trends

Union County is one of seven counties included in the Charlotte-Gastonia-Rock Hill NC-SC Metropolitan Statistical Area (MSA). According to the US Census Bureau, the total population of the MSA was 1,499,293 in 2000, and there was a 29.0% increase in population between 1990 and 2000. Union County and Mecklenburg County experienced rapid population growth between 1990 and 2000 (46.9%, and 36.0%, respectively), and between 2000 and 2007 (47.4% and 24.1%, respectively). The Union County towns of Weddington (76.1%), Indian Trail (513.0%) Stallings (49.6%), and Monroe (62.6%) experienced growth even more rapid growth than in Union County as a whole. The same holds true for Matthews (62.1%) in Mecklenburg County. The Demographic Area grew less quickly (36.2%) than Union County (46.9%) during the same period of time, and approximately the same as Mecklenburg County (36.0%); however, it grew more rapidly than North Carolina as a whole (21.4%).

Table 2. Population Growth Trends and Projections, 1980-2030

	Demographic Area	Mecklenburg County	Union County	North Carolina
Population:				
April 1980*	N/A	404,270	70,436	5,880,095
1990	184,379	511,433	84,211	6,628,637
Percentage Growth 1980-1990	N/A	26.5%	19.6%	12.7%
2000	251,189	695,454	123,677	8,049,313
Percentage Growth 1990-2000	36.2%	36.0%	46.9%	21.4%
2007^	N/A	863,147	182,344	9,069,398
Percentage Growth 2000-2007^	N/A	24.1%	47.4%	12.7%
Population Projections*:				
2010	N/A	925,084	203,527	9,450,494
Percentage Growth 2000-2010	N/A	33.0%	64.6%	17.4%
2020	N/A	1,151,640	274,147	10,850,228
Percentage Growth 2010-2020	N/A	24.5%	34.7%	14.8%
2030	N/A	1,391,703	350,928	12,274,433
Percentage Growth 2020-2030	N/A	20.8%	28.0%	13.1%

Sources: US Census Bureau, ^NC State Data Center, 2007 Certified County Population Estimates *Office of State Budget and Management, May 2008

According to the North Carolina Office of State Budget and Management, population in Union County is expected to grow even more rapidly (64.6%) between 2000 and 2010, with growth rates decreasing from 2010 to 2020 (34.7%) and from 2020 to 2030 (28.0%). The comparable growth rates for North Carolina are much lower (see **Table 2**). Despite the fact that the growth rates are declining, Union County is likely to continue to grow at a rate at least two times that of the State over the next couple of decades. Mecklenburg County growth rates are expected to be lower than Union County's, but still greater than those in North Carolina. This is supported by data from 2000 to 2007, which show 47.4% growth in Union County.

According to the NC Employment Security Commission (NCESC), the five largest employers in Mecklenburg County (as of 3rd Quarter 2007) are Charlotte Mecklenburg Board of Education, Carolinas Health Care Systems, Wachovia Bank, Bank of America and the City of Charlotte, all with more than 1,000 employees. The five largest employers in Union County (as of 3rd Quarter 2007) are Union County Schools, Tyson Farms (manufacturing), Union Memorial Medical Center, McGee Brothers Company (construction), and Ati Allvac (manufacturing). These companies all employed more than 1,000 people as well.

The NCESC indicates that Mecklenburg County experienced an overall increase in employment of 152,663 jobs (42.1%) between 1990 and 2000, and another 24,077 jobs (4.7%) between 2000 and 2006 (see **Table 3**). This is primarily due to an increase in the number of management and administrative & waste jobs. Each industry sector added over 20,000 jobs between 1990 and 2000, and both experienced gains of over 100%. Employment in these sectors decreased between 2000 and 2006, but the finance & insurance sector added almost 20,000 jobs (55.8%) during this time period. The manufacturing sector was the sector with the most employees in 1990, but job losses have occurred since then. Retail trade had the most employees in 2000, while the government sector had the most employees in 2006.

The NCESC indicates that Union County experienced an overall increase in employment of 10,540 jobs (30.2%) between 1990 and 2000, and another 8,672 jobs (19.1%) between 2000 and 2006 (see **Table 4**). The increase in employment is primarily due to an increase in the number of construction jobs (over 3,000 or 77.9%). The number (and percentage) of construction jobs continued to increase between 2000 and 2006, but administrative & waste services had the greatest increase (1,386 jobs and 88.3%). The manufacturing sector in Union County suffered a reduction in the number of jobs, yet remained the sector with the most employees.

Table 3. Employment By Industry Sector & Growth, Mecklenburg County								
Sector	Employment		Change, 1990-2000		Employment		Change, 2000-2006	
	1990	2000	#	%	2000	2006	#	%
Agriculture, Forestry, Fishing & Hunting	268	508	240	89.6%	508	799	291	57.3%
Mining	179	154	-25	-14.0%	154	199	45	29.2%
Utilities	*	*	N/A	N/A	*	*	N/A	N/A
Construction	22,140	31,654	9,514	43.0%	31,654	34,669	3,015	9.5%
Manufacturing	48,021	46,477	-1,544	-3.2%	46,477	34,834	-11,643	-25.1%
Wholesale Trade	31,844	40,366	8,522	26.8%	40,366	34,888	-5,478	-13.6%
Retail Trade	41,930	53,891	11,961	28.5%	53,891	55,853	1,962	3.6%
Transportation and Warehousing	15,453	26,582	11,129	72.0%	26,582	25,326	-1,256	-4.7%
Information	13,986	22,359	8,373	59.9%	22,359	18,756	-3,603	-16.1%
Finance and Insurance	24,841	34,886	10,045	40.4%	34,886	54,342	19,456	55.8%
Real Estate and Rental and Leasing	6,754	9,526	2,772	41.0%	9,526	10,256	730	7.7%
Professional and Technical Services	22,123	31,187	9,064	41.0%	31,187	33,791	2,604	8.3%
Management of Companies and Enterprises	7,787	28,691	20,904	268.4%	28,691	21,683	-7,008	-24.4%
Administrative and Waste Services	21,276	44,494	23,218	109.1%	44,494	43,146	-1,348	-3.0%
Educational Services	2,980	4,236	1,256	42.1%	4,236	6,458	2,222	52.5%
Health Care and Social Assistance	19,032	27,389	8,357	43.9%	27,389	35,245	7,856	28.7%
Arts, Entertainment, and Recreation	4,186	7,124	2,938	70.2%	7,124	7,415	291	4.1%
Accommodation and Food Services	23,228	38,311	15,083	64.9%	38,311	43,706	5,395	14.1%
Other Services, Ex. Public Administration	11,209	14,388	3,179	28.4%	14,388	15,642	1,254	8.7%
Public Administration	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Unclassified	N/A	N/A	N/A	N/A	N/A	1,926	N/A	N/A
Government	36,673	51,280	14,607	39.8%	51,280	58,961	7,681	15.0%
Total**	362,937	515,600	152,663	42.1%	515,600	539,677	24,077	4.7%

Source: North Carolina Employment Security Commission, accessed 6/3/08

N/A - not applicable/available; * disclosure suppression; ** total all industries including undisclosed

Table 4. Employment By Industry Sector & Growth, Union County								
Sector	Employment		Change, 1990-2000		Employment		Change, 2000-2006	
	1990	2000	#	%	2000	2006	#	%
Agriculture, Forestry, Fishing & Hunting	215	593	378	175.8%	593	782	189	31.9%
Mining	*	*	N/A	N/A	*	*	N/A	N/A
Utilities	*	*	N/A	N/A	*	165	N/A	N/A
Construction	4,090	7,276	3,186	77.9%	7,276	8,917	1,641	22.6%
Manufacturing	14,212	13,125	-1,087	-7.6%	13,125	11,515	-1,610	-12.3%
Wholesale Trade	1,147	2,082	935	81.5%	2,082	2,797	715	34.3%
Retail Trade	4,248	5,040	792	18.6%	5,040	5,154	114	2.3%
Transportation and Warehousing	498	1,350	852	171.1%	1,350	1,103	-247	-18.3%
Information	364	403	39	10.7%	403	300	-103	-25.6%
Finance and Insurance	940	554	-386	-41.1%	554	930	376	67.9%
Real Estate and Rental and Leasing	226	301	75	33.2%	301	405	104	34.6%
Professional and Technical Services	508	1,150	642	126.4%	1,150	1,455	305	26.5%
Management of Companies and Enterprises	74	74	0	0.0%	74	75	1	1.4%
Administrative and Waste Services	674	1,569	895	132.8%	1,569	2,955	1,386	88.3%
Educational Services	*	377	N/A	N/A	377	623	246	65.3%
Health Care and Social Assistance	989	1,629	640	64.7%	1,629	2,567	938	57.6%
Arts, Entertainment, and Recreation	109	191	82	75.2%	191	460	269	140.8%
Accommodation and Food Services	1,442	2,342	900	62.4%	2,342	3,300	958	40.9%
Other Services, Ex. Public Administration	637	1,060	423	66.4%	1,060	1,241	181	17.1%
Public Administration	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Unclassified	N/A	N/A	N/A	N/A	N/A	367	N/A	N/A
Government	4,170	6,227	2,057	49.3%	6,227	9,005	2,778	44.6%
Total**	34,925	45,465	10,540	30.2%	45,465	54,137	8,672	19.1%

Source: North Carolina Employment Security Commission

N/A - not applicable/available

* - disclosure suppression

Table 5. Employment By Industry Sector & Growth, North Carolina

Sector	Employment		Change, 1990-2000		Employment		Change, 2000-2006	
	1990	2000	#	%	2000	2006	#	%
Agriculture, Forestry, Fishing & Hunting	21,827	31,372	9,545	43.7%	31,372	29,514	-1,858	-5.9%
Mining	3,993	4,262	269	6.7%	4,262	3,704	-558	13.1%
Utilities	26,626	15,090	-11,536	-43.3%	15,090	13,168	-1,922	12.7%
Construction	166,733	231,439	64,706	38.8%	231,439	243,445	12,006	5.2%
Manufacturing	820,239	759,014	-61,225	-7.5%	759,014	552,940	-206,074	27.2%
Wholesale Trade	139,697	166,194	26,497	19.0%	166,194	176,603	10,409	6.3%
Retail Trade	377,026	454,098	77,072	20.4%	454,098	451,080	-3,018	-0.7%
Transportation and Warehousing	82,772	120,862	38,090	46.0%	120,862	114,362	-6,500	-5.4%
Information	57,615	84,040	26,425	45.9%	84,040	73,100	-10,940	13.0%
Finance and Insurance	102,412	126,121	23,709	23.2%	126,121	148,943	22,822	18.1%
Real Estate and Rental and Leasing	32,488	47,948	15,460	47.6%	47,948	51,902	3,954	8.2%
Professional and Technical Services	89,618	145,404	55,786	62.2%	145,404	171,111	25,707	17.7%
Management of Companies and Enterprises	35,104	68,392	33,288	94.8%	68,392	69,094	702	1.0%
Administrative and Waste Services	108,590	228,792	120,202	110.7%	228,792	234,723	5,931	2.6%
Educational Services	22,091	40,262	18,171	82.3%	40,262	53,531	13,269	33.0%
Health Care and Social Assistance	203,641	321,754	118,113	58.0%	321,754	412,251	90,497	28.1%
Arts, Entertainment, and Recreation	27,952	45,751	17,799	63.7%	45,751	48,423	2,672	5.8%
Accommodation and Food Services	205,943	279,329	73,386	35.6%	279,329	325,685	46,356	16.6%
Other Services, Ex. Public Administration	77,172	97,914	20,742	26.9%	97,914	98,619	705	0.7%
Public Administration	*	N/A	N/A	N/A	N/A	*	N/A	N/A
Unclassified	*	*	N/A	N/A	*	24,233	N/A	N/A
Government	476,906	603,170	126,264	26.5%	603,170	660,259	57,089	9.5%
Total**	3,079,017	3,871,209	792,192	25.7%	3,871,209	3,956,688	85,479	2.2%

Source: North Carolina Employment Security Commission

N/A - not applicable/available; * - disclosure suppression; ** - total all industries including undisclosed

By comparison, North Carolina experienced an overall increase in employment of 792,192 jobs (25.7%) between 1990 and 2000, and 85,479 jobs (2.2%) between 2000 and 2006 (see **Table 5**). The manufacturing sector lost approximately 267,000 jobs between 1990 and 2006. This is likely due to the closing of numerous textile mills across the state. Administrative & waste services and health care & social assistance both added more than 100,000 employees and experienced gains of 110.7% and 58.0%, respectively (between 1990 and 2000). Both sectors continued to gain employment between 2000 and 2006, but health care & social assistance gained the most jobs (90,497 and 28.1%) of any sector. While manufacturing had historically been the industry sector with the most employees, the government sector had the most employees in 2006.

4.3 Existing Land Use Patterns

Overall, the portion of the FLUSA west of US 601 is more developed than the portion east of US 601. The Mecklenburg County portion of the FLUSA is almost completely developed, with commercial and industrial uses concentrated along Independence Boulevard (US 74) and Monroe Road (SR 1009), and residential uses elsewhere. The Levine Campus of Central Piedmont Community College is located in the southwest quadrant of the interchange at I-485 and US 74.

In the Union County portion of the FLUSA, residential uses tend to be concentrated in the towns adjacent to the Mecklenburg County border (Weddington, Indian Trail, Stallings, Hemby Bridge and Lake Park), and in the vicinity of the New Location Alternatives between Mecklenburg County and US 601. Several new subdivisions were observed in the northwestern part of Union County, particularly in and around Unionville and Indian Trail. The unincorporated area east of US 601 is generally undeveloped, with scattered low-density residential and institutional uses throughout. Local planners indicate, and field visit observations confirm, that the eastern part of Union County remains very active agriculturally. Beans, hay, corn and chicken farms were observed throughout the FLUSA. The existing land use map (**Figure 3**) shows agricultural uses in the same category as residential uses, since some communities have combined districts.

Land uses along existing US 74 between I-485 and Marshville chiefly include commercial and industrial businesses. Commercial and industrial uses are also concentrated in Indian Trail's Old Hickory Business Park along Indian Trail-Fairview Road (SR 1520) on the north side of US 74, and around the Monroe Regional Airport off of Old Monroe Road/Old Charlotte Highway (SR 1009). Planned future land uses are shown on **Figure 4**.

4.4 Local Land Use Plans and Zoning Ordinances

The level of planning varies among the jurisdictions in the FLUSA. For instance, Charlotte-Mecklenburg, Union County, and the City of Monroe all have adopted land

use plans and zoning ordinances, as have the towns of Matthews, Mint Hill, Indian Trail, Weddington, Stallings, and the Village of Wesley Chapel. On the other hand, the towns of Unionville, Fairview, and Marshville have basic land use plans prepared by the Centralina Council of Governments to establish goals for future land use decision-making. A summary of these plans follows:

Charlotte-Mecklenburg

Mecklenburg County Park and Recreation 10 Year Master Plan

Mecklenburg County is in the process of planning, designing and constructing multiple greenway trails throughout the County. These trails provide the citizens and visitors of Mecklenburg County recreational and transportation opportunities. Of the many greenway corridors identified throughout the county, Campbell and McAlpine Greenways are located within the FLUSA. These are existing paved trails that cross the US 74 corridor.

East District Adopted Future Land Use Map (July 6, 2007)

The East District of Charlotte-Mecklenburg encompasses the area roughly from US 74 to the Cabarrus County boundary in southeastern Mecklenburg County. The majority of the land use in the East District located adjacent to Independence Boulevard (US 74) is designated as retail, office or multi-family residential. Just behind the Independence corridor, the majority of the land uses are designated as single family residential at four dwellings units per acre.

Southeast Corridor Proposed Transit Stations and Adopted Future Land Use Map (April 19, 2007)

CATS has identified several corridors within Mecklenburg County that will receive rapid transit which would improve the region's public transit system. One of those corridors is the Southeast Corridor, which would provide service to southeast Mecklenburg County. This project is also known as the LYNX Silver Line. The preferred alignment for the LYNX Silver Line would follow Independence Boulevard (US 74) and would include ten transit stations. Of those ten stations, five are located within the FLUSA; however, the easternmost station is located just east of I-485 near the Central Piedmont Community College campus – beyond the eastern terminus of the Monroe Connector/Bypass project. There are no plans to extend the LYNX Silver Line line past I-485 into Union County. Therefore, this proposed transit line would not be constructed on the portion of US 74 that is included in the Upgrade Existing US 74 Alternative.

As part of the study that identified the preferred alignment and the transit stations, a future land use map was developed. The land uses correspond with the City's East Charlotte Future Land Use Plan, which recommends that the majority of the properties adjacent to Independence Boulevard (US 74) be retail, office or multi-family. Just behind

Independence Boulevard (US 74), the majority of the land uses are designated as single family residential (4 dwellings units per acre) with some institutional uses throughout.

Town of Matthews

Matthews Land Use Plan, A Guide for Growth 2002-2012 (October 14, 2002)

The Matthews Land Use Plan was adopted by the Board of Commissioners in October of 2002 and provided land use and transportation recommendations for the future development of the Town of Matthews. The plan references the future Monroe Connector/Bypass and recommends that the Town monitor the development of the alignment and to “actively resist” any alignment that would bring it near Idlewild Road (SR 3174).

Town of Matthews Small Area Plan (October 10, 2007)

This small area plan proposes to extend the existing Independence Pointe Parkway to south to I-485. This proposed project is approximately ½ mile west of the intersection of Highway 51 and Independence Boulevard (US 74).

Matthews Strategic Economic Development Plan (December 2007)

This plan identifies two areas for employment growth. These include the I-485 corridor and the downtown area. The three I-485 interchanges at E. John Street (SR 1010), Independence Boulevard (US 74) and Idlewild Road (SR 3174) were considered because of their regional access and vacant land to accommodate business/office parks potentially as part of mixed-use developments.

Current Zoning Districts (April 2008)

The majority of the land along US 74 within Matthews is zoned B-1 (Neighborhood Business). However there are some properties that are zoned B-3 (General Business); B-1SCD (Shopping Center District); I-2 (Heavy Industrial); R-12, R-15, or R-20 (Single Family Residential); and C (Conditional). These categories promote high density residential, general business and commercial uses.

Town of Mint Hill

Town of Mint Hill Land Use Map (January 2008)

The Land Use Map indicates that a majority of Mint Hill should be developed as single family residential (20,000-40,000 square feet per lot). Commercial uses and other more intense uses, such as higher density residential, institutional and retail/office uses are located along NC 51. These uses are concentrated around the downtown area, creating an urban core for Mint Hill.

Downtown Mint Hill Master Plan (2002)

Approximately 50% of Mint Hill’s downtown is located within the FLUSA. Traveling through the center of downtown is NC 51, a major east-west thoroughfare that connects several municipalities within Mecklenburg County. The Downtown Master Plan

recommends that improvements be made to NC 51 that would enhance the pedestrian environment in downtown. These improvements include pedestrian crosswalks across NC 51 and streetscape improvements along the roadway.

Mint Hill Zoning Code (December 7, 2007)

The zoning code includes provisions for soil erosion and sedimentation control and flood control (SWIM buffers). The intent of this provision is to control soil erosion and sedimentation in order to protect the public health and welfare, as well as to reduce pollution from future development. The SWIM buffer regulations are in place to ensure that streams and adjacent lands will fulfill their natural functions.

Mint Hill Zoning Map (January 2008)

Most of the Town is zoned as Residential District. This district is designed to encourage the protection of the natural and manmade environment and resources and the retention of existing farm lands, rural estates, forested and water areas and other types of open spaces.

Union County

Union Vision 2020 – A Union County Long Range Plan (1999)

This plan identifies six key benchmarks for Union County determined by various stakeholders and task force members. The six benchmarks are Education, Quality of Life, Infrastructure, Economic Development, Government, and Private Sector Leadership.

Union County Future Land Use Plan Map (April 26, 2006)

Areas within the FLUSA are mostly designated residential or industrial. More specifically, areas along NC 84 just northwest from the City of Monroe are designated as Industrial and Residential (2.5-3.0 dwelling units per acre). Land uses around Wingate and Marshville are designated as a combination of Commercial, Industrial, Office/Institutional and Residential (1-2 dwelling units per acre). The Future Land Use Map also illustrates several different alignments of the proposed Monroe Connector/Bypass.

Union County Land Use Ordinance (May 7, 2001) and Zoning Map (August 1, 2007)

Much of Union County, especially non-urban areas that are not experiencing strong growth pressures, are zoned RA-40. This classification encourages agricultural uses, manufactured housing and low density residential. In general these areas are not served by public water and sewer. The area between the City of Monroe and Wesley Chapel that is within the FLUSA is comprised of several different zoning categories, including RA-20, R-20, LI (Light Industrial), and HI (Heavy Industrial). The areas surrounding Wingate and Marshville are zoned HC (Highway Corridor Mixed Use), RA-40, RA-20, R-20 and LI (Light Industrial).

The areas along US 74 are zoned for HC (Highway Corridor Mixed Use), which allows for a variety of Commercial and Light Industrial uses.

No building may be constructed and no substantial improvement of an existing building may take place within any floodway. No new building may be constructed and no substantial improvement of a residential building may take place within any floodplain unless the lowest floor (including basement) of the building or improvement is elevated no lower than two (2) feet above the base flood level. And in any area that is located outside a designated floodplain but where a stream is present, no structure or fill can be located within 20-feet from the stream bank on either side.

Town of Weddington

Land Use Plan, Town of Weddington, NC (September 11, 2006)

The land use goals that are outlined in the plan focus on maintaining the Town's strong single family character, preserving open space and scenic views, limiting future development in environmentally sensitive areas and retaining a mix of uses that reinforces Weddington's small town character. The FLUSA (Zone 4) intersects the northeastern portion of the Town of Weddington. The land use within this area is residential conservation and traditional residential.

Town of Weddington Zoning Map (March 2008)

The properties that are located within the FLUSA (Zone 4) are zoned R-40, R-60, and RCD (Residential Conservation District).

Town of Weddington Temporary Development Ordinance (January 2008)

Weddington passed an 18-month development moratorium ordinance in January 2008 to allow the Town to address traffic concerns while working on the Local Area Regional Transportation Plan, land use regulations, zoning and subdivision ordinances.

Village of Wesley Chapel

Village of Wesley Chapel Land Use Plan (December 8, 2003)

Land use recommendations are made for the northeastern part of Wesley Chapel that is within the FLUSA (Zone 4). The Future Land Use Map indicates that a combination of low and medium density residential would be located within this area.

Village of Wesley Chapel Zoning Ordinance: Article 14, Floodplains, Drainage, Stormwater & Wetland Protection (October 17, 2005)

The zoning code provides guidance for several environmental categories including floodplains, drainage, stormwater and wetland protection. More specifically the ordinance requires that a 20-foot easement be established on all open channels and streams less than 25 acres all the way to 50-feet on properties that are less than 75 acres.

Town of Indian Trail

The Villages of Indian Trail – A Plan for Managed Growth and Livability (November 8, 2005)

The Land Use Plan was adopted by Town Council in 2005 and provides guidance for future growth throughout the Town for the next 20 years. The plan recognizes the importance of the proposed Monroe Connector/Bypass and has planned for future growth around the proposed alignment and its interchanges. The plan mentions that the project would divert most through traffic from US 74, allowing it to become a more effective regional commercial road in Indian Trail. The Land Use Plan also recommends mostly medium density residential to be located around the proposed interchanges with approximately 1.6 million square feet of commercial and retail.

Areas east of the proposed Monroe Connector/Bypass and south of the Goose Creek watershed are mostly undeveloped. While this area is experiencing some growth pressures, there are still many working farms and undeveloped land. There are two factors that would limit future development within the Goose Creek watershed. The first is that previous development did not provide adequate stormwater management; therefore much of the area in this area is subject to flooding. The second factor is that the federally-endangered Carolina heelsplitter is located within the Goose Creek watershed. This has led the US. Fish and Wildlife Service (USFWS) to propose density, stream buffer and sewer restrictions in this watershed. Due to these important environmental factors, the Land Use Plan proposes that future development in this area be limited to low density residential with an emphasis on preserving open space and natural areas.

The transportation section of the Plan identifies the anticipated travel demand and the number of lanes that would be needed for each of the Town's major roadways. Four lanes is recommended for the Monroe Connector/Bypass.

Defining the Vision for Downtown Indian Trail, NC (July 2003)

The Vision Plan was developed in 2003 and outlines several recommendations for improving the downtown of Indian Trail. In summary, the plan identifies infill opportunities, streetscape improvements, gateway opportunities, additional green spaces and some transportation improvements. The plan recommends that a new bypass be considered that would connect US 74 to Old Monroe Road (SR 1957); diverting through traffic away from Indian Trail Road (SR 1008/SR 1367). In addition to this facility, several other street connections are recommended that would create better connectivity throughout the downtown area.

Old Hickory Business Park Master Plan (October 10, 2006)

The master plan was developed to describe the concept for Old Hickory as well as the design principles that support the concept, and to provide a set of guidelines for developing Old Hickory Business Park. The goals of the plan are to provide a good mix

of uses and to provide vehicular and pedestrian linkages that would link the commercial services located along Indian Trail Road (SR 1008/SR 1367).

Unified Development Ordinance (2007)

The majority of properties within the Town of Indian Trail are zoned for residential uses. The areas located around the proposed Monroe Connector/Bypass are zoned R-20, R-6, RA-20, HC (Highway Commercial), B-4 and LI (Light Industrial). The proposed alignment also travels through the Old Hickory Planned Industrial District.

Town of Stallings

Stallings Land Use Plan Goals, Objectives and Strategies (April 12, 2006)

Several major objectives were identified for residential, commercial and industrial uses, open space and environmental issues and downtown Stallings. The Monroe Connector/Bypass project is identified in this plan.

Town of Stallings Land Use Map (March 19, 2007)

The entire Town of Stallings is within the FLUSA (Zone 3) and the Future Land Use Map illustrates several types of land uses throughout. Along the US 74 corridor, the primary uses include General Commercial, Mixed Use Class 3 (Destination Retail/Office/Mixed Residential), Mixed Use Class 2 (Light Retail/Office/Residential) and Business Center. Just beyond the corridor there are several properties that are zoned for Traditional Residential. Single-family residential can vary in density depending on location and availability of utilities. Density levels may be as high as three units per acre.

Town of Stallings, NC Zoning and Street Map (July 2007)

The entire Town of Stallings is located within the FLUSA (Zone 3). Several land use categories are identified throughout the Town and of those approximately 50% are traditional residential uses. The area near the proposed Monroe Connector/Bypass is recommended for Business Center, Office/Light Retail, Mixed Use, Office Center and Traditional Residential because of easy access to US 74, Old Charlotte Highway (SR 1009) and I-485. In terms of zoning, the area near the proposed Monroe Connector/Bypass is a combination of the R-20, B-6, LI and Conditional Zoning.

Stallings Land Use Ordinance (June 11, 2007)

The Land Use Ordinance includes a Flood Damage Prevention Ordinance which regulates development in potential flood areas. New construction or substantial improvement of any structure, including manufactured homes, shall have the lowest floor, including the basement, elevated no lower than two feet above the base flood elevation.

Town of Unionville

Town of Unionville Land Use Plan (March 2006)

Prepared by the Centralina Council of Governments, the Land Use Plan indicates that existing land use in Unionville is primarily agricultural and low-density residential. The goals for the Town guide development in the near future of 5-10 years. Within the timeframe of this plan, no major expansions of the public sewer system are expected, and the Monroe Connector/Bypass (which would be located at the southern edge of Town) will not yet be completed. In the near future, it is anticipated that new development will continue at a moderate pace and at low densities similar to recent years.

Town of Unionville Land Use Ordinance (October 1, 2003)

This ordinance implements the planning policies of the Land Use Plan. The Monroe Connector/Bypass project is not mentioned in this ordinance.

Town of Fairview

Town of Fairview Land Development Plan (April 18, 2005)

Prepared by the Centralina Council of Governments, the Land Use Plan provides guidance to ensure that the quality of life for Fairview is protected and that it represents the foundation upon which future land use decisions would be based. Activity nodes are indicated on the Future Land Use Map that are located within the FLUSA (Zone 2). These areas shall consist of small scale office and retail developments. The majority of the land use within the Town is designated as low density residential (0-1 dwelling unit per acre).

Town of Fairview Future Land Use Plan Map (June 2006)

The majority of the Town of Fairview is zoned RA-40. The RA-40 classification allows agricultural uses, low density residential uses and manufactured homes in areas not experiencing strong growth pressures and not served by public water or sewer.

City of Monroe

City of Monroe Land Development Plan (2000)

The purpose of the Land Development Plan is to establish guidelines for the development of land within the City of Monroe until the year 2010. The plan describes a series of goals, objectives, and strategies, and their plan for implementation. Low density residential uses are designated in the far northern and southern ends of Monroe's extraterritorial jurisdiction, located largely within the water supply watersheds. Maximum densities are two dwelling units per acre, and public utilities may or may not be available. Moderate Density residential areas are located along the western edge of Monroe, primarily between Old Charlotte Highway (SR 1009) and Waxhaw Road. Up to three units per acre are allowed, and public utilities are either provided or technically feasible.

According to the Monroe Land Development Plan map, existing commercial areas include the central business district, the entire US 74 corridor, and retail developments along Old Charlotte Highway (SR 1009).

City of Monroe Downtown Master Plan (February 2008)

The Downtown Master Plan is currently being developed to create a vision for the future and to return Monroe to its position as the focal point of commerce, arts and employment in Union County. Within the Master Plan several improvements are recommended that would enhance the multi-modal transportation system.

The future land use for the downtown area along US 601, which links directly to the proposed alignment for the Monroe Connector/Bypass, includes High Density Residential, Office/Employment, Civic/Institutional, Mixed Use A (High Density Residential/Office/Commercial) and Mixed Use B (High Density Residential / Office / Commercial / Civic).

Proposed M.L. King Jr. Boulevard Future Land Use Plan Map (April 2004)

The plan contains proposed land use and zoning recommendations throughout the proposed MLK Extension. The proposed extension begins at the intersection of the existing MLK Boulevard (SR 1223) and Goldmine Road and extends south where it intersects with Lancaster Avenue (NC 200).

Monroe Zoning Code (2006)

The City of Monroe has adopted a zoning code that includes environmental and development regulations (including zoning, floodplain/floodway, and watershed).

The watershed ordinance identifies a WS-III-CA (Critical Area), WS-III B W (Balance of Watershed), WS-IV CA (Critical Area), and WS-IV-PA (Protected Area). Development is regulated in each of these districts. The proposed Monroe Connector/Bypass appears to intersect at least one of these areas.

In addition to the watershed area restrictions, a 100-foot vegetated buffer is required on all perennial streams that are located in the city limits.

Official City of Monroe Zoning Map (May 2005)

Two major roads that connect to the proposed Monroe Connector/Bypass are Morgan Mill Road (NC 200) and Skyway Drive (US 601). These two roadways extend north through the northern portion of Union County and connect several municipalities. The Zoning Map for the City of Monroe shows that land around the future Monroe Connector/Bypass and between Highway 200 and 601 is zoned for R-40 and R-20. According the zoning code R-40 and R-20 (Residential Low Density) districts are designed to accommodate single-family residential development in areas within the city's planning jurisdiction that are not served by public water or sewer facilities and

that are not yet appropriate for development at higher densities. Areas closer to downtown are zoned either G-1 (General Industrial) or GB (General Business).

Town of Wingate

Town of Wingate Land Use Ordinance (February 7, 2006)

Planned Residential Developments are only allowed on tracts of land that are five acres or greater located within R-40 and R-20 zoning categories. Floodplain and Floodway Overlay Districts have been established. A Water Supply Watershed Overlay District has also been established.

In any area that is located outside a designated floodplain but where a stream is present, no structure or fill can be located within 20-feet from the stream bank on either side.

Town of Marshville

Town of Marshville Land Use Plan (August 16, 2004)

The Land Use Plan for Marshville was prepared by the Centralina Council of Governments and adopted in 2004. The Land Use Plan outlines long-term growth and development goals and serves as a general guide for future development. The plan highlights several land use goals that would assist the Town in guiding future growth. In particular, the plan identifies US 74 as an important commercial corridor that needs to be aesthetically pleasing. Highway 74 is considered to be a gateway for the community.

4.5 Transportation Plans and Proposed Projects

The Monroe Connector and Monroe Bypass projects are both included in MUMPO's 2030 LRTP as regionally significant projects. The LRTP indicates that the Monroe Bypass is a 2010 horizon year project, and it would be a new four-lane freeway, classified as a principal arterial. The Monroe Connector is identified as a 2020 horizon year project, and it would also be a new four-lane freeway, classified as a principal arterial; however, the funding source is shown as "toll" as opposed to "NCTIP."

The 2004 MUMPO Thoroughfare Plan shows both the Monroe Connector and Bypass as a proposed freeway-expressway. Both the 2030 LRTP and the Thoroughfare Plan show the Connector/Bypass projects in the same general alignment and with the same interchanges as proposed by NCTA. As part of STIP Project U-3619 (see below), an interchange is anticipated at the proposed Secret Avenue extension and the proposed Monroe Bypass. This interchange is included in MUMPO's plans.

North Carolina Department of Transportation 2009-2015 STIP projects located in the FLUSA include the projects below and are shown on **Figure 1**.

- **R-211EC** Mecklenburg County. I-485/SR 3468 (Weddington Road), construct interchange. Start right-of-way acquisition in 2009. Begin construction in 2011. Strategic Highway Corridor and Intrastate Project.
- **R-2616** Union County. US 601 from South Carolina state line to US 74 in Monroe, widen to multi-lanes. Part complete – part under construction (design-build). Strategic Highway Corridor.
- **R-4441** Union County. Upgrade US 74 to freeway standards from Monroe Bypass (R-2559) to Rockingham Bypass (R-512) with a bypass of Wadesboro. Project is currently unfunded.
- **U-0213** Union County. Charlotte Avenue from Railroad to Concord Avenue, widen to multi-lanes. Right-of-way and construction are unfunded.
- **U-2509** Mecklenburg County. US 74 (Independence Boulevard) from Charlotte Outer Loop to Idlewild Road, upgrade for additional capacity and safety. Right-of-way and construction are unfunded. Feasibility study in progress. Strategic Highway Corridor.
- **U-2547** Union County. SR 2188 (Charles Street) from SR 2181 (Sunset Drive) to SR 2100 (Franklin Street), widen to multi-lanes. Start right-of-way acquisition and utilities in 2009. Begin construction in 2011. Planning and design in progress.
- **U-2549** Union County. Monroe Northern Loop from US 74 to SR 1751 (Walkup Avenue) at SR 1763 (Bivens Road), two lanes on four-lane right-of-way. Right-of-way and construction are unfunded.
- **U-3412** Union County. SR 1223 (Martin Luther King, Jr. Boulevard) from NC 200 (Lancaster Avenue) to SR 1009 (Charlotte Avenue), two lanes on multi-lane right-of-way, new location. Part complete – part under construction (design-build). Strategic Highway Corridor.
- **U-3619** Union County. Secrest Avenue Extension from SR 1751 (Walkup Avenue) to SR 1006 (Olive Branch Road), multi-lanes new location with interchange at proposed Monroe Bypass. Right-of-way and construction are unfunded.
- **U-3809** Union County. SR 1008 (Indian Trail Road) from SR 1009 (Old Charlotte Highway) to US 74, widen to multi-lanes. Start right-of-way acquisition in 2011. Begin construction in 2012. Planning and design by Town of Indian Trail.
- **U-3825** Union County. SR 1365 (Stallings Road) from SR 1009 (Old Charlotte Highway) to US 74, widen to multi-lanes and coordinate with the proposed

- Monroe Connector. Start right-of-way acquisition in 2009, mitigation in 2010, construction in 2011. Planning and design in progress.
- **U-4024** Union County. US 601 from US 74 to the proposed Monroe Bypass, widen to multi-lanes and construct improvements to the existing US 74/US 601 interchange. Begin right-of-way acquisition in 2012 and construction in 2014. Part unfunded. Strategic Highway Corridor.
 - **U-4713** Mecklenburg County. SR 3440 (McKee Road) extension from SR 3457 (Campus Ridge Road) to SR 3448 (Pleasant Plains Road), two lanes on multi-lane right-of-way on new location. Begin right-of-way acquisition in 2012 and construction in 2013 for segment B, SR 3448 (Pleasant Plains Road) to SR 1009 (John Street). Planning and design of segment B by Town of Matthews. Right-of-way and construction for segment A, SR 1009 (John Street) to SR 3457 (Campus Ridge Road), are unfunded.
 - **U-4714** Mecklenburg and Union Counties. SR 1009 (John Street – Old Monroe Road) from SR 3448 – SR 3474 (Trade Street) to SR 1377 (Wesley Chapel-Stouts Road) in Matthews and Stallings, widen to multi-lanes. Right-of-way and construction are unfunded. Programmed for planning and environmental study only by municipalities.
 - **U-4913** Mecklenburg and Union Counties. SR 3174/SR 1501 (Idlewild Road) from I-485 to SR 1524 (Stevens Mill Road), widen to multi-lanes. Right-of-way and construction are unfunded.
 - **U-5007** Mecklenburg County. NC 51 from US 74 (Independence Boulevard) to SR 3128 (Lawyers Road), widen to multi-lanes. Right-of-way and construction are unfunded.
 - **U-5025** Mecklenburg County. Weddington Road from Trade Street to I-485, widen to multi-lanes. Currently under construction and using “moving ahead” funds. Construction is scheduled for completion in early 2009.

The *Destination:2030 – Your Guide to the 2030 Transit Corridor System Plan* (November 15, 2006) is an updated, long-range plan that consists of multiple rapid transit investments which include a series of Center City improvements and bus service and facility enhancements throughout the region. Once such improvement includes the development of the Southeast Corridor Rapid Transit Corridor also known as the LYNX Silver Line. The LYNX Silver Line is a 14-mile Bus Rapid Transit (BRT) alternative that would extend from Center City Charlotte to the Town of Matthews. The Silver Line would operate in an exclusive guideway for more than 90% of the line, in the median of Independence Boulevard (US 74) and along Independence Pointe Parkway, resulting in faster travel times and more reliable service.

The easternmost station on the planned LYNX Silver Line is located just east of I-485 near the Central Piedmont Community College campus – beyond the western terminus of the Monroe Connector/Bypass project. There are no plans to extend the LYNX Silver Line line past I-485 into Union County. Therefore, this proposed transit line would not be constructed on the portion of US 74 that is included in the Upgrade Existing US 74 Alternative.

4.6 Environmental Regulations

NPDES Regulations

In 1972, the National Pollutant Discharge Elimination System (NPDES) program was established under the authority of the Clean Water Act. Phase I of the NPDES storm water program was established in 1990. It required NPDES permit coverage for large or medium municipalities that had populations of 100,000 or more. In North Carolina, there are six Phase I communities.

According to the NCDENR-DWQ website, the City of Charlotte is identified by the US Environmental Protection Agency (USEPA) as a Phase I storm water permittee. As required by NPDES regulations, Charlotte must develop and implement a storm water program including public education, illicit discharge detection and elimination, storm sewer system and land use mapping, and analytical monitoring.

The Phase II program extends permit coverage to smaller (< 100,000 pop.) communities and public entities that own or operate a municipal separate storm sewer system (MS4). The Phase II program builds on the existing Phase I program by requiring smaller communities and public entities that own and operate an MS4 to apply and obtain an NPDES permit for storm water discharges. Federal law requires communities and public entities that own or operate an MS4 and that satisfy either of the following two conditions to obtain an NPDES Phase II storm water permit:

- 1) The MS4 is located in an urbanized area as determined by the latest Decennial Census of the Bureau of the Census. (If the MS4 is not located entirely within an urbanized area, only the portion that is within the urbanized area is regulated).
- 2) The community or public entity is designated by the NPDES permitting authority. In the State of North Carolina, the NPDES permitting authority is the Environmental Management Commission (EMC).

According to the NCDENR-DWQ website, the towns of Matthews, Mint Hill, Weddington, Wesley Chapel, Indian Trail, Stallings, Hemby Bridge, Lake Park and Monroe, and both Mecklenburg and Union Counties are identified by the USEPA as Phase II storm water permittees. Consequently, as required by NPDES regulations, they must, at a minimum, develop, implement, and enforce a storm water program designed

to reduce the discharge of pollutants from the municipal separate storm sewer system (MS4) to the maximum extent practicable using the six minimum control measures of the Phase II program. Each of the six minimum controls requires the use of Best Management Practices (BMPs) and measurable goals (i.e., narrative or numeric standards used to gauge program effectiveness).

Sedimentation and Erosion Control Regulations

Construction or land development activities that disturb one acre of land or more require an erosion and sediment control plan under the state's Sedimentation Pollution Control Act (SPCA) administered by the NC Division of Land Resources. Local governments may review and enforce the erosion and sediment control plan within their jurisdiction, but the program has to be as strict as the Division of Land Resources program. Site disturbances of less than one acre require the use of NCDOT's BMPs, but a site plan is not required.

Watershed Regulations

The FLUSA is intersected by two major river basins, the Catawba (sub-basins 03-08-34 and 03-08-38) and the Yadkin (sub-basins 03-07-12 and 03-07-14). In addition, there are two Water Supply Watersheds, the Stewarts Creek/Lake Twitty Water Supply Watershed (Class III) and the Richardson Creek Water Supply Watershed (Class IV).

The NCDENR-DWQ prepared a *Catawba River Basinwide Water Quality Plan* in September 2004. This plan indicates that although all NPDES point sources have been removed from Sixmile Creek, NCDENR-DWQ still recommends development of management strategies to reduce runoff and implementation of agricultural BMPs.

The NCDENR-DWQ prepared a *Yadkin River Basinwide Water Quality Plan* in March 2003 in an effort to create long-term water quality management strategies for local and state officials. This plan indicates that Goose Creek/Duck Creek watershed is a Nationally Significant Aquatic Habitat because it is home to six rare mollusks, including the federally endangered Carolina heelsplitter. The South Fork of Crooked Creek is identified as a state significant site, and Lanes Creek is identified as a regionally significant aquatic habitat. Recommendations are made to reduce non-point source pollution, particularly stormwater runoff.

Development in the protected area of Class III water supply watersheds (such as the Stewarts Creek/Lake Twitty watershed shown on **Figures 5 and 7**) is limited to two dwelling units per acre or 24% built-upon area under the low-density option. Thirty foot stream buffers are required under the low density option. Under the high-density option, 24-50% built-upon area is permitted, and 100 foot stream buffers are required. In the critical area, only one dwelling unit per acre or 12% built-upon area is permitted under the low density option. Under the high density option, 12-30% built-upon area is allowed. The same stream buffers apply as in the protected area of the watershed.

Standard sedimentation and erosion controls apply throughout the watershed, and agriculture, forestry and transportation best management practices are mandated.

Development in the protected area of Class IV water supply watersheds (such as the Richardson Creek watershed shown on **Figures 5 and 7**) is limited to two dwelling units per acre or 24% built-upon area under the low density option. Under the high density option, 24-70% built-upon area is allowed. In the critical area, the low density option is the same as it is in the protected area. The high density option allows 24-50% built-upon area. The same stream buffers apply as for Class III water supply watersheds. Standard sedimentation and erosion controls also apply, and agriculture, forestry and transportation best management practices are mandated.

Post-Construction and Storm Water Ordinances

The *City of Charlotte Post-Construction Controls Ordinance (July 1, 2008)* provides measures to “protect, maintain and enhance the health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased post construction storm water runoff and non-point source pollution associated with new development and redevelopment.”

There are three watershed districts that are defined in the ordinance, one of which is located in the FLUSA. The Central Catawba Watershed District is the area that drains to Sugar, Little Sugar and McAlpine Creeks, including all tributaries, except for Six Mile Creek. Stream buffer regulations have been established for the Central Catawba Watershed District for all intermittent and perennial streams within low density and high density projects. The buffer regulations for low density and high density projects vary slightly, but in general they both require a minimum of 30 feet to 100 feet of vegetated buffer on all intermittent and perennial streams including a 10-foot zone adjacent to the bank. The size of the buffer depends on the size of the property.

The *Surface Water Improvement and Management (SWIM)* initiative established buffer zones along creeks in Charlotte, Mecklenburg County and Matthews and Mint Hill. No construction or development is allowed in the buffer zones. SWIM is an on-going, strategic, long-range effort that includes:

- pollution reduction
- erosion control
- water quality monitoring
- watershed planning
- stream restoration and enhancement projects.

The *Town of Matthews Post-Construction Storm Water Ordinance (June 30, 2007)* defines two specific districts - the Central Catawba District and the Yadkin District. The Central Catawba District is the area of land that drains to McAlpine and Four Mile

Creeks in the Catawba River basin in the Town of Matthews, including all creeks tributaries. The Yadkin District is the area of land that drains to the North Fork of Crooked Creek in the Yadkin River basin in the Town of Matthews, including all creeks and tributaries. Each district contains provisions for stream buffers and storm water control measures. Another measure that is required as part of this ordinance is “Undisturbed Open Space” provision. The undisturbed open space provision is required for all development unless mitigated. The percentage of Open Space required depends on a project’s built-upon area. Undisturbed open space requirements can be met in stream or lake buffers, designated common areas or on individual lots for residential development (e.g., backyards, borders, etc.).

The *Town of Mint Hill Post-Construction Storm Water Ordinance (June 30, 2007)* indicates that areas within the Goose Creek watershed require 100-foot undisturbed buffers on intermittent streams and 200-foot undisturbed buffers on perennial streams. Low density and high density projects outside the Goose Creek watershed area are required to maintain a 30-foot buffer along intermittent and perennial streams.

The *Union County Stormwater Discharge and Quality Control Ordinance* requires countywide riparian buffers on all intermittent and perennial streams as follows:

- Countywide buffer requirements for intermittent streams include a 30-foot buffer referenced as the Streamside Zone.
- Countywide buffer requirements for perennial streams include a 30-foot buffer in the Streamside Zone and a 20-foot buffer in the Upland Zone for a total of a 50-foot buffer.
- Countywide buffer requirements for perennial streams of drainage areas greater than 640 acres are 50-foot buffers in the Streamside Zone and 50-foot buffers in the Upland Zone for a total buffer of 100-feet.

The Stormwater Ordinance requires greater riparian buffers on all intermittent and perennial streams in the Duck, Goose, and Waxhaw Creek watersheds. These buffers include 100-feet on all intermittent and 200-feet on all perennial streams. All buffers shall be measured from the top of bank.

NCDENR, on behalf of the North Carolina Environmental Management Commission, is proposing two new rule “options” to protect the Carolina heelsplitter in Goose Creek watershed (which also includes Duck Creek). Option A includes the following site-specific management strategies: controlling stormwater for projects disturbing half acre or more of land, controlling wastewater discharges (no new NPDES wastewater discharges), and controlling ammonia toxicity to streams supporting the species. No new impervious or partially pervious surfaces shall be allowed within the 100-year floodplain within 100 feet of intermittent streams and 200 feet of perennial streams. The riparian buffer shall extend a distance of 50 feet on all sides of intermittent and perennial

streams, ponds lakes and reservoirs. Option B includes similar site-specific management strategies except that the riparian buffer shall extend a distance of 100 feet on all sides of an intermittent stream, and 200 feet on all sides of perennial streams, ponds, lakes and reservoirs.

Fairview, Unionville and Marshville staff indicated that they follow the Union County Ordinance for buffer regulations. The City of Monroe requires a 100-foot vegetated buffer on all perennial streams in the city limits, and Wingate restricts development within 20 feet of stream banks.

The Village of Wesley Chapel Zoning Ordinance: Article 14, Floodplains, Drainage, Stormwater & Wetland Protection (October 17, 2005) provides guidance for several environmental categories including floodplains, drainage, stormwater and wetland protection. More specifically the ordinance requires that a 20-foot easement be established on all open channels and streams less than 25 acres all the way to 50-feet on properties that are less than 75 acres.

The Town of Indian Trail Post-Construction Storm Water Ordinance (September 11, 2007) provides measures to “protect, maintain and enhance the health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased post construction storm water runoff and non-point source pollution associated with new development and redevelopment.”

More specifically the ordinance requires that stream buffers are provided along all perennial and intermittent streams. The buffer requirement on perennial streams is 200 feet on either side of the stream. The buffer requirement on intermittent streams is 100 feet on both sides of the stream.

The Town of Stallings Post-Construction Storm Water Ordinance (May 3, 2007) indicates that within the Town of Stallings are two watershed districts - Twelve-Mile Creek and Crooked Creek. These two districts require low density and high density projects to maintain a 30-foot buffer along intermittent and perennial streams.

5. INVENTORY OF NOTABLE FEATURES (STEP 3)

Based on NCDOT GIS shapefiles, NC One Map GIS shapefiles, and web-based research, an inventory of notable features was assembled. The notable features were cross-referenced with the following environmental documents: the *Historic Architectural Resources Reconnaissance Report* (NCDOT, October 2007) and the *Endangered Plant Survey Update* (ESI, November 2007). **Figure 5** shows the USGS quads in which protected species are located, National Register of Historic Places structures and districts, historic study list structures and districts, water resources and 303(d) streams.

5.1 Federally-Protected Species

Four species with federal protection (that is, species listed as threatened or endangered) under the Endangered Species Act (ESA) of 1973 are considered by the US Fish and Wildlife Service (USFWS) to have ranges extending into Mecklenburg and Union Counties. Section 7 of the ESA requires that any federal action likely to adversely affect a species listed as threatened or endangered under the ESA be subject to review by the USFWS. As defined by the ESA, an endangered species is any plant or animal which is in danger of extinction throughout all or a significant portion of its range within the foreseeable future. A threatened species is any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. **Table 6** lists ESA-protected species. Other species may receive additional protection under separate laws such as the Lacey Act Amendments of 1981, the Migratory Bird Treaty Act of 1999, or the Bald and Golden Eagle Protection Act of 1940.

Table 6. Federally-Protected Species in Union and Mecklenburg Counties				
Common Name	Scientific Name	County*	Federal Status^	Potential Habitat Present in FLUSA
Invertebrate				
Carolina heelsplitter	<i>Lasmigona decorata</i>	U/M	E	Yes
Plants				
Schweinitz's sunflower	<i>Helianthus schweinitzii</i>	U/M	E	Yes
Smooth coneflower	<i>Echinacea laevigata</i>	M	E	Yes
Michaux's sumac	<i>Rhus michauxii</i>	M	E	Yes

* U – Union County; M – Mecklenburg County

^ E - Endangered

Environmental Services, Inc. (ESI) conducted a protected species survey (*Endangered Plant Survey Update*, November 15, 2007) for the federally endangered plant species with habitat in the in the project study area. Surveys were completed for Schweinitz's sunflower, smooth coneflower, and Michaux's sumac within the high and moderate probability habitat areas located within the preliminary study corridors of the project.

These species tend to grow in disturbed areas with little herbaceous competition and abundant light, including hillsides, roadsides, and utility rights of way. The survey identified two populations of Schweinitz's sunflower within the project study area (Zone 3). No specimens of Michaux's sumac or smooth coneflower were identified during the field studies. Habitat for these species is found throughout the FLUSA in all zones.

The Carolina heelsplitter is a small, native freshwater mussel endemic to the study area. Six populations of the species are currently known to exist, two of which are in Union County – in the Waxhaw Creek watershed south of the FLUSA and in the Goose Creek watershed within the FLUSA (Zone 2).

Local planners and environmental agencies have also indicated that the Carolina darter fish (*Etheostoma collis*) and several other mussels, including Savannah lilliput (*Toxolasma pullus*), Atlantic pigtoe (*Fusconaia masoni*) and Carolina creekshell (*Villosa vaughaniana*), are federal species of concern that have been documented in South Fork Crooked Creek and North Fork Crooked Creek within the FLUSA (Zone 3).

5.2 Water Resources

The FLUSA is intersected by two major river basins, the Catawba (sub-basins 03-08-34 and 03-08-38) and the Yadkin (sub-basins 03-07-12 and 03-07-14). Principal streams (named streams on USGS 7.5-minute topographic maps) within the Catawba River Basin portion of the FLUSA are Fourmile Creek, McAlpine Creek, and Sixmile Creek. Streams within the Yadkin-Pee Dee River Basin portion of the FLUSA include the North Fork Crooked Creek, South Fork Crooked Creek, Crooked Creek, Stewarts Creek, East Fork Stewarts Creek, Goose Creek, and Richardson Creek. These streams also have numerous unnamed tributaries.

Water Supply Watersheds

A Class III water supply watershed (Stewarts Creek/Lake Twitty watershed) and a Class IV water supply watershed (Richardson Creek/Lake Lee watershed) encroach on the FLUSA (see **Figures 5 and 7**). Class III water supply watersheds are used as sources of water supply for drinking, culinary, or food processing purposes and are generally located within low to moderately developed watersheds. Class IV water supply watersheds are also used as sources for drinking, culinary, and food processing purposes but are typically located in more moderately to highly developed areas.

303(d) Waters

The 303(d) list is a product of the Clean Water Act, which requires states to identify those waters that do not meet water quality standards or those that have impaired uses. If control strategies for point and non-point source pollution exist for impaired waters,

they may be excluded from the 303(d) list. NCDENR-DWQ is responsible for maintaining the 303(d) list.

A search of the NCDENR-DWQ 2006 303(d) List reveals the presence of nine 303(d) impaired water bodies within the FLUSA. In the Catawba River Basin, these impaired waters are McAlpine Creek from its source to NC 51 and Sixmile Creek from its source to the North Carolina/South Carolina state line. These segments are listed due to impaired biological integrity likely caused by urban runoff and storm sewers. In the Yadkin River Basin, Goose Creek from its source to SR 1524, Crooked Creek from its source to the Rocky River and including the South Fork Crooked Creek and North Fork Crooked Creek, Richardson Creek from Lake Lee to mouth of Negro Head Creek, Lanes Creek from its source to the Rocky River, and Waxhaw Branch from its source to Lanes Creek are considered impaired. These segments are listed due to impaired biological integrity. For segments in the western portions of the FLUSA, including Crooked Creek and Rocky River, the potential sources are listed as urban runoff and storm sewers. For segments in eastern portions of the FLUSA, such as Lanes Creek and Richardson Creek, the potential source cited is agriculture.

A search of the NCDENR-DWQ Draft 2008 303(d) List reveals that McAlpine Creek, Crooked Creek and Waxhaw Branch are no longer impaired, and have been removed from the proposed list. Sixmile Creek, Goose Creek, South Fork Crooked Creek, North Fork Crooked Creek, Richardson Creek, and Lanes Creek all remain on the list; however, the segment(s) considered impaired may have changed. Little Richardson Creek, Stewarts Creek and Beaverdam Creek have been added to the list.

Wild and Scenic Rivers, High Quality Waters and Outstanding Resource Waters

No designated Wild and Scenic Rivers, High Quality Waters or Outstanding Resource Waters are located in the FLUSA.

5.3 Architectural Features and Historic Places

A Historic Architectural Resources Reconnaissance Report was prepared for the Monroe Connector/Bypass project in October 2007. NCDOT conducted a driving survey of the Area of Potential Effect (an area smaller than the FLUSA) in 2007. The Area of Potential Effect contained the following properties listed in the National Register of Historic Places:

- Monroe City Hall
- Monroe Downtown Historic District
- Monroe Residential Historic District
- Malcolm K. Lee House
- John C. Sikes House
- Union County Courthouse and US Post Office

Properties identified as having been previously determined eligible for the National Register of Historic Places include:

- William Bivens House
- Perry-McIntyre House
- James Orr Stores
- Secrest Farm & Hiram Secrest House
- Indian Trail Presbyterian Church

In a meeting with the HPO in September 2008, all properties other than William Bivens House (Zone 5), Perry-McIntyre House (Zone 5), and Secrest Farm & Hiram Secrest House (Zone 3) were determined to be outside of the APE for the Detailed Study Alternatives.

5.4 Parks and Recreational Resources

There are 18 public parks and recreational facilities and one planned public park in the FLUSA, as listed in **Table 7**:

Table 7. Parks and Recreational Resources		
Name	Address	Ownership
Matthews Sportsplex <i>(proposed)</i>	Southwest Quadrant I-485 and US 74, Matthews	Mecklenburg County
Russell Park	6208 Creft Circle, Lake Park	Village of Lake Park
Founders Park	Mother Teresa Drive, Lake Park	Village of Lake Park
Lake Park	Lake Park Road, Lake Park	Village of Lake Park
Fred Kirby Park	Faith Church Road, Lake Park	Union County
Veterans Park	5400 Creft Circle, Lake Park	Village of Lake Park
Parks Williams Athletic Center	1717 Williams Road Extension, Monroe	City of Monroe
Monroe Aquatics Center	2325 Hanover Drive, Monroe	City of Monroe
Dickerson Park	899 North Johnson Street, Monroe	City of Monroe
Belk Tonawanda Park	Allen Street, Monroe	City of Monroe
Don Griffin Park	Skyway Drive/Cedar Street, Monroe	City of Monroe
Creft Park	Stafford Street, Monroe	City of Monroe
Winchester Center	1001 Winchester Avenue, Monroe	City of Monroe
Ellen Fitzgerald Senior Center	327 South Hayne Street, Monroe	City of Monroe
Sunset Park	Sunset Drive, Monroe	City of Monroe
J Ray Shute Center	506 Green Street, Monroe	City of Monroe

Table 7. Parks and Recreational Resources		
Name	Address	Ownership
Parker and Hayne St Park	Parker Street and Hayne Street, Monroe	City of Monroe
Monroe Country Club	US 601 South, Monroe	City of Monroe – Municipal golf course open to the public
Sutton Park	2303 Brooks Street, Monroe	City of Monroe

These properties may be subject to Section 4(f) of the US Department of Transportation Act of 1966. There are no properties within the FLUSA that are subject to Section 6(f) of the Land and Water Conservation Fund Act.

5.5 Prime Farmland Soils

The Federal Protection Policy Act of 1981 (7 CFR 658) requires all federal agencies to consider the impact of their activities on prime, unique, statewide, and locally important farmland soils, as defined by the US Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). The NRCS, in cooperation with the state and local agencies, developed a listing of *Prime and Statewide Important Farmland of North Carolina*.

Prime farmland soils in the FLUSA are shown in **Figure 6**. Most of these soils are located in three primary areas: the Mecklenburg County portion of the FLUSA (Zone 1), just west of the City of Monroe (Zone 3), and scattered along US 601 and NC 200 north of US 74 (Zone 5). Union County planners also indicate that soils are not the most suitable for development near Fairview, in the extreme northwestern part of Union County.

6. IDENTIFICATION OF IMPORTANT IMPACT-CAUSING ACTIVITIES (STEP 4)

Impact-causing activities in the FLUSA may result from implementation of one of the analysis scenarios for this project, as well as from other projects unrelated to this project. These may include other existing or proposed transportation projects or other public or private development projects (residential, commercial, or industrial) that may cumulatively affect notable resources. These activities and projects are considered below in the cumulative effects analysis as the reasonably foreseeable actions in the FLUSA (see **Section 8**).

6.1 Impact-Causing Activities Associated with this Project

As noted in NCDOT/NCDENR's *ICI Guidance*, a transportation project may involve a number of impact-causing activities such as construction impacts, induced growth, changes in traffic patterns, access alterations, and conversion of land from its existing use to transportation use.

6.2 Recent and Proposed Development Activity and Transportation Projects

To determine the extent of recent and proposed development activity with the FLUSA, contact was made with representatives of each of the governmental bodies that comprise the FLUSA. The following is a summary of planned and/or proposed development activity and transportation projects. These are discussed by zone.

Zone 1

The Mecklenburg County portion of the FLUSA is almost completely developed, with commercial and industrial uses concentrated along US 74 and Old Monroe Road/Old Charlotte Highway (SR 1009), and residential uses elsewhere.

- The Levine Campus of Central Piedmont Community College (CPCC) is located in the southwest quadrant of the interchange at I-485 and US 74. The campus currently serves over 11,000 students, and local planners indicate that this facility is quickly expanding. The campus has also recently expanded with a second phase of classroom space and the addition of the 35,000 square foot Center for Automotive Technology.
- Hendrick Automotive Group has received approval from the Town of Matthews for an automall which can accommodate up to 16 auto dealerships on a parcel of land adjacent to the CPCC campus in the southwest quadrant of the interchange at I-485 and US 74. The parcel spans the Mecklenburg/Union County line.

- Presbyterian Hospital Matthews, which opened in 1994, continues to influence development along the NC 51 corridor, bringing additional medical offices to the area.
- The Bridges at Mint Hill, an open-air retail center, is under development near the interchange at I-485 and Lawyers Road (SR 3128) in the Town of Mint Hill. The development is proposed to have a total of 1.3 million square feet of retail and is bisected by Goose Creek.
- The Town of Matthews and Mecklenburg County are planning for a 160-acre Sportsplex in the southwest quadrant of the I-485/US 74 interchange. The park will contain a cluster of soccer and multi-use fields and a stadium, with necessary accessory uses as on-site parking, walking trails and greenways connecting fields and around the perimeter, picnic shelters, playgrounds, concession and restroom facilities, and a maintenance station. Buffers are being incorporated along creeks on the property.
- NCDOT is planning for a new interchange on I-485. The I-485 Interchange at Weddington Road (R-0211) includes the proposed construction of a half-clover interchange to improve access to I-485 from Weddington Road and surrounding communities in Weddington, Matthews, and Charlotte. The new access would also redistribute some of the traffic at adjacent I-485 interchanges at Providence Road and John Street. Some widening of Weddington Road west of I-485 to five lanes would also be included. Construction is scheduled to begin in 2011.
- NCDOT is conducting a widening project on Weddington Road (U-5025). Weddington Road will be widened from Trade Street to Plantation Drive to three lanes. The project is expected to be complete in early 2009.
- Other transportation projects include (see Section 4.5):
 - Extension of McKee Road from Pleasant Plains to US 74 in Union County, with some funding in 2013
 - Widening of South Trade Street and Fullwood Lane by the Town of Matthews
 - Conversion of US 74 to an expressway/freeway from uptown Charlotte to I-485 (U-2509)
 - Completion of a parallel collector road system for US 74, which would connect the existing pieces of Independence Pointe Parkway and Northeast parkway to the Mecklenburg County line
 - Extension of Sardis Road North as the Eastern Circumferential Road
 - Rapid transit line to be a separate dedicated pavement running generally adjacent to Independence Pointe Parkway through the Town of Matthews with stations at 1) the current park-and-ride lot near Sam Newell Road, 2)

near NC 51, 3) in the Family Entertainment District, and 4) a final stop with substantial park-and-ride facilities for Union County commuters near CPCC Levine campus.

Zone 2

There were no major recent or planned projects identified in Zone 2. There is a proposed STIP project (U-4913) to widen Idlewild Road (SR 1501) from I-485 to Stevens Mill Road (SR 1524) to multi-lanes. This project is currently unfunded.

Zone 3

- Town of Stallings shows 10% (570 acres) of its total land (5,667 acres) as redevelopable, most zoned for office or retail uses. Also, just over 35% (1,998 acres) is currently undeveloped with just over half (1,076 acres) zoned for residential and most of the rest zoned for office and retail uses. Areas within the Town of Stallings jurisdiction north of Idlewild Road (Goose Creek watershed) are already largely built out, and undeveloped areas are programmed for traditional residential development, with the exception of the area near the interchange of I-485 and Idlewild Road (SR 1501), where commercial and retail development has occurred in the past few years and is expected to continue.
- Old Hickory Business Park in Indian Trail currently has 52 acres developed with an additional 173 undeveloped acres remaining.
- Wal-Mart has proposed a 205,000-square foot super center at US 74 and Stouts-Indian Trail Road.
- Town of Indian Trail is proposing 140,000 square feet of retail space in its Town Center area on Indian Trail Road south of US 74.
- Indian Trail planners indicate that 3,800 homes have been approved for development, but they are not built yet because of utility constraints.
- The Town of Indian Trail estimates build out of approved residential subdivisions by 2015 to be 7,868 additional housing units. Indian Trail build out – 38,700 dwelling units, comprised of 6.6% low density (1 dwelling unit/2 acres), 50% medium density (3 dwelling units/acre), 19.4% high density (5 dwelling units/acre), and 24% multi-family (12 dwelling units/acre).
- Stinson-Hartis Corridor – Town of Indian Trail planning for this to become a mixed-used area and employment center with residential, office, industrial, and retail uses. Planning for 6.3 million square feet of commercial space, housing and nearly 14,000 jobs at build out. Mixture of medium density, high density, and multi-family residential with a potential future population of 2,900 people.

- Aerospace industries are being established near the Monroe Regional Airport, and the runway is being extended here as well. Monroe planners indicate that the airport area is a vibrant and vital employment center for the city.
- Transportation projects in this zone include (see Section 4.5):
 - McKee Road connection to US 74 and possible future extension north of US 74
 - Stallings Road (SR 1365) widening from Old Monroe Road/Old Charlotte Highway (SR 1009) to US 74 to multi-lanes (U-3825)
 - Indian Trail-Fairview Road (SR 1008) widening from Old Monroe Road/Old Charlotte Highway (SR 1009) to US 74 to multi-lanes (U-3809)
 - Old Monroe Road/Old Charlotte Highway (SR 1009) widening from Trade Street (SR 3448/SR 3474) to Wesley Chapel-Stouts Road (SR 1377) to multi-lanes (U-4714)
 - Completion of Martin Luther King, Jr. Boulevard (SR 1223) from NC 200 to Charlotte Avenue (SR 1009) in Monroe (U-3412)
 - US 601 widening from US 74 to the proposed Monroe Connector/Bypass to multi-lanes and improvements to the US 601/US 74 interchange (U-4024)
 - Charles Street (SR 2188) widening from Sunset Drive (SR 2181) to Franklin Street (SR 2100) to multi-lanes (U-2547)
 - Construction of Monroe Northern Loop on new location from US 74 to Walkup Avenue (SR 1751) at Bivens Road (SR 1763) (U-2549)
 - Construction of Secrest Avenue Extension from Walkup Avenue (SR 1751) to Olive Branch Road (SR 1008) on new location with possible interchange with proposed Monroe Connector/Bypass (U-3619)
 - Charlotte Avenue (SR 1009) widening to multi-lanes from the railroad to Concord Avenue (U-0213)

Zone 4

- Wesley Chapel – Though mostly outside of the FLUSA, the Village of Wesley Chapel is estimating up to 2,600 additional homes by 2030 in the Village and its ETJ.

Zone 5

- Carolinas Medical Center-Union recently announced the expansion of its Emergency Department from 11,500 square feet to 34,700 square feet, with construction expected to be complete by 2010. The Emergency Department currently treats more than 45,000 patients per year, and by 2015, the number of emergency room visits is projected to exceed 65,000.

- Two subdivisions in Wingate are under construction – Glencross and Noble Oaks, which will have 201 and 177 units, respectively, when complete. Town planners note that anticipation of the Monroe Connector/Bypass contributed to the development of these subdivisions.
- 74X CATS Express Bus Service to Marshville
- Union County Partnership for Progress recently announced plans for a 5,000-acre business-industrial-educational park – to be called Legacy Park – north of US 74 in Wingate. Plans are preliminary, but the group estimates the project would be built over 30 years or more, could employ up to 20,000 workers, and bring \$2.3 billion in investment to the area.
- Other transportation projects in this zone include (see Section 4.5):
 - Upgrading US 74 to freeway standards with a bypass of Wadesboro from the Monroe Bypass to the Rockingham Bypass (R-4441)
 - US 601 widening from the South Carolina state line to US 74 in Monroe to multi-lanes (R-2616)

6.3 Water and Sewer Availability and Allocation

According to local planners and NC One Map GIS information, the incorporated areas along US 74 are currently provided with water and sewer service.

Charlotte-Mecklenburg Utilities Department (CMUD) provides water and sewer service to the portion of the FLUSA within Mecklenburg County. CMUD is planning to extend service to Union County in several locations.

According to NC One Map (of which Union County is a partner) and local staff, the water service coverage area in Union County includes virtually all of the FLUSA west of US 601, the US 74 corridor, NC 200 north of US 74, and areas surrounding the towns of Wingate and Marshville. Service is not available along NC 205 (north of Marshville and US 74) and east of NC 207 (south of US 74).

According to NC One Map, the sewer service coverage area includes virtually all of the US 74 corridor, and the municipalities along US 74. Service is not available between NC 200 and US 601 (south of US 74), along NC 200 north of the planned New Location Alternatives, or in the extreme eastern part of the FLUSA, other than in the municipalities. Local staff also indicates that Unionville and Fairview do not have sewer service except for at some institutional uses.

The purpose of the *Union County Policy for Allocating Wastewater Treatment Capacity* (September 17, 2007) document is to establish guidelines for allocating limited wastewater

capacity for Union County's Twelve Mile Wastewater Treatment Plant (WWTP) and Crooked Creek WWTP, as well as the transport of wastewater through the Six Mile Collection System for treatment at the McAlpine Creek WWTP owned by the Charlotte-Mecklenburg Utilities. The Twelve Mile WWTP currently has a capacity of 2.5 million gallons per day (GPD). The Policy estimates that approximately 1.65 million GPD will be available when the expansion of the Twelve Mile WWTP is completed and the moratorium is lifted. The Policy also estimates that approximately 1.89 million GPD of capacity are available within the Six-Mile Collection System. The specific guidelines within the Policy are intended to: fulfill outstanding legal obligations of Union County; reserve capacity to serve public school facilities, County Projects, and other Government facilities; and to promote non-residential development projects in Union County. Union County was under a state-imposed moratorium on sewer permits from February 7, 2007 to September 28, 2007 for the Twelve Mile WWTP.

The Policy sets up three project priority categories and outlines specific requirements that need to be met prior to issuance of new wastewater capacity for treatment at the two identified Union County WWTPs. Within these three project priority categories, the Policy specifically identifies 91 development projects requiring a total capacity of approximately 2.68 million GPD. The Policy also stipulates that Union County will not accept any new engineering plans for projects within the service areas of Twelve Mile WWTP and Crooked Creek WWTP that are not specifically designated within one of the three priority project categories until sufficient additional wastewater treatment capacity becomes available at either of the wastewater treatment plants.

Three separate project priority categories are also identified for allocation of capacity within the Six-Mile Collection System for conveyance to the McAlpine Creek WWTP owned by Charlotte-Mecklenburg Utilities. According to the Policy, it is estimated that approximately 1.89 million GPD of available capacity at the Six-Mile WWTP. The Policy specifically identifies ten projects requiring a total capacity of approximately 435,000 GPD. The Policy also stipulates that Union County will not accept any new engineering plans for projects within the service areas of the Six-Mile Collection System that are not specifically designated within one of the three priority project categories until sufficient additional wastewater treatment capacity becomes available within Six-Mile service area.

Union County is currently developing a policy for water allocation.

7. IDENTIFICATION AND ANALYSIS OF POTENTIAL INDIRECT IMPACTS (STEP 5)

The potential for project-induced land use changes will be described as low, moderate, or high. The magnitude of change in land use between the No-Build, New Location Alternative, and Upgrade Existing US 74 Alternative scenarios will be discussed.

7.1 No-Build Alternative

If the Monroe Connector/Bypass is not constructed, land use patterns would likely continue as they are currently. Growth and development are prevalent in Mecklenburg and western portions of Union County, due to their proximity to Charlotte. In recent years, Union County has been one of the fastest growing counties in the US.

Zone 1

The proximity to Charlotte and I-485 would continue to drive development in this area, attracting additional residential, commercial and retail development. The Town of Matthews is highly developed and is planning for future redevelopment projects. The town is also working to attract additional commercial development to boost its tax base along the US 74 and NC 51 corridors. Development in Mint Hill is somewhat more limited due to sensitive environmental resources, including the Goose Creek watershed; however, the town is using its zoning and environmental regulations to continue to grow in a controlled manner. Much of the town's jurisdiction is planned for residential development, but the town is developing commercial and retail areas in its downtown and near the interchange of I-485 and Lawyers Road.

Zone 2

This area is currently much less intensely developed than other areas of the FLUSA, and local land use plans indicate a desire to maintain the rural character of the area. Development would likely continue to be primarily low density residential and would occur at a slow rate. Localities in this area have a history of resisting unwanted development, including commercial development along US 601, and it is expected that this would continue under the No-Build Alternative.

Zone 3

The towns of Stallings and Indian Trail and the City of Monroe have experienced tremendous growth over the past several years, particularly in the residential market, serving as bedroom communities to employment centers in Charlotte and Mecklenburg County. Easy access to Charlotte via I-485 and US 74, as well as availability of affordable land, has made the area attractive for commuters and home buyers. Complementary retail development has developed along the US 74 corridor to serve the residential growth.

However, interviews with planners of these localities indicate that the jurisdictions would like to encourage additional commercial and light industrial development to increase their tax bases. The City of Monroe, in particular, indicated that they are not promoting additional residential development within their jurisdiction, but are focusing on attracting industrial development in the Monroe Corporate Center and AeroPointe Industrial Centre industrial parks near the Monroe Regional Airport. In fact, Monroe and Union County have economic development incentive grants to encourage the location of new businesses and expansion of existing businesses within their jurisdictions. These include offering property tax based economic development incentives or cash payments to companies that commit to investing capital and creating full-time jobs.

Under the No-Build Alternative, these patterns are likely to continue, with additional residential development occurring in Stallings and Indian Trail, subject to availability of water and sewer service, and retail, commercial, and industrial development occurring along major road corridors, including US 74, Old Monroe Highway/Old Charlotte Highway (SR 1009), and US 601 in the City of Monroe.

Zone 4

Development in this area is influenced by proximity to I-485 and Charlotte. Therefore, under the No-Build Alternative, growth patterns would continue as planned.

Zone 5

The eastern part of Union County remains more rural in character than areas further west. Under the No-Build Alternative, this area would see current land use and growth patterns continue and would experience little growth in residential, commercial or industrial uses.

The distance to Charlotte and the lack of accessibility due to traffic congestion on US 74 have not made this area as attractive for commuters, and the area has not experienced high rates of residential development that other parts of Union County have seen. Planners indicated that under the No-Build Alternative, population in this area could actually decline.

There are some existing industrial uses along US 74 in Wingate and Marshville; however, planners did not indicate plans to expand these or add new industries in the area. Wingate University is located in Wingate and is expanding.

There would be little change in this area under the No-Build Alternative from current conditions.

7.2 New Location Alternatives

The Monroe Connector/Bypass New Location Alternatives would improve overall mobility and accessibility in the US 74 corridor by providing an additional transportation corridor between I-485 and US 74 near Marshville. The project would subsequently reduce traffic volumes on existing US 74 and the local street network, and provide a high-speed regional facility to promote east-west travel in Union County. The proposed project would provide direct access between eastern Union County and I-485 and the Charlotte-Mecklenburg County urban area employment center, as well as provide improved connectivity between Charlotte and the port in Wilmington.

Variations in New Location Alternative Detailed Study Alternative corridors are so small that indirect impacts are not expected to vary by alternative. The slight variations in the interchange locations by alternative are not anticipated to affect the location of residential development. Commercial and industrial development may shift somewhat due to the variations in interchange locations; however, these variations should not affect the quantity or type of development that occurs.

Zone 1

The proximity to Charlotte and I-485 would continue to drive development in this area, and local planners do not anticipate growth and development patterns changing substantially, as these areas are already highly developed. The New Location Alternatives would not affect travel patterns in this area substantially, as the area is located at the western terminus of the project. The facility would improve accessibility to eastern North Carolina, including beaches and the port of Wilmington; however, this benefit would not be expected to influence development patterns in the area. The New Location Alternatives would not affect the rate or intensity of development in this area, and there would likely be no change from the No-Build Alternative.

Zone 2

Although the New Location Alternatives would not be located directly within this area, they would improve accessibility between this area and the Charlotte/Mecklenburg area by adding access to a high-speed freeway via new interchanges in close proximity to this zone (Unionville-Indian Trail Road/SR 1367 and US 601). However, sensitive environmental resources, development regulations, lack of water/sewer service, unsuitable soils for development, and a strong local interest in preserving the area's rural character should help minimize the potential for induced development related to this project. Therefore, the New Location Alternatives would be expected to have a low potential for accelerated growth and low potential for causing indirect impacts to sensitive resources. Localities in this area are enforcing buffers along perennial and intermittent streams, and the outcome of the proposed Goose Creek Rules (see summary on page 35 of this report; more information available at <http://h2o.enr.state.nc.us/csu/GooseCreek.html>) could strengthen these regulations and

further reduce the potential for indirect impacts to water quality and federally-protected species in the area.

Zone 3

The Towns of Stallings and Indian Trail and the City of Monroe have experienced tremendous growth over the past several years, and this growth is expected to continue because of the area's proximity to the Charlotte/Mecklenburg region and affordable land and housing. The New Location Alternatives would enhance this access to Charlotte by providing a high-speed freeway in this zone with connection to I-485. In addition, mobility throughout the area would be improved by diverting traffic off of local roads, particularly US 74, onto the new facility.

Indian Trail planners have been planning for village centers in the vicinity of proposed interchanges and upgrades of other roadways in anticipation of the project. The Town of Stallings envisions a business center near the Monroe Connector/Bypass interchange proposed at Stallings Road (SR 1365). Stallings and Union County planners hope that by building the Monroe Connector/Bypass on new location, existing US 74 might redevelop into a more vibrant employment corridor, with a predominance of office type uses as opposed to drive-by retail uses. The City of Monroe, in its Downtown Master Plan, is planning for higher intensity uses along US 601 because of the connection with the proposed Connector/Bypass.

Industrial development would still concentrate in areas near the Monroe Regional Airport, where industry already exists, but land near the planned interchanges and along feeder roadways (particularly Rocky River Road/SR 1514, US 601 and near the Old Hickory Business Park in Indian Trail) would be more attractive for commercial and industrial development because of the improved mobility and access between Charlotte and the port in Wilmington, and the closer proximity to existing water and sewer services.

With the New Location Alternatives, it is likely that additional residential development would occur in Stallings and Indian Trail, subject to availability of water and sewer service, with retail, commercial, and industrial development occurring along major road corridors, including US 74, Old Monroe Road/Old Charlotte Highway (SR 1009), and US 601 in the City of Monroe. There would be moderate potential for accelerated growth and indirect impacts as a result of the New Location Alternatives in this area.

Zone 4

Development in this area is influenced by proximity to I-485 and Charlotte and would not be influenced by this project. It is unlikely that the New Location Alternatives would influence travel or development patterns in this area due to the distance between this zone and the New Location Alternatives. This area has access to Charlotte and Mecklenburg County via other routes. It is unlikely that residents of this area would

travel out-of-the-way to make use of the New Location Alternatives. There would be no change in this area from the No-Build Alternative.

Zone 5

The New Location Alternatives would be expected to have the greatest influence on development in this area. The New Location Alternatives would improve access from this area of Union County to the Charlotte/Mecklenburg area by providing a controlled-access freeway alternative to existing US 74, which is congested with heavy traffic volumes and numerous signalized and unsignalized intersections. Travel time savings from this area of the county to I-485 and points west are expected to exceed 20 minutes in the design year via the New Location Alternatives. This, coupled with the availability of affordable land and access to water/sewer service, would make this area very attractive for residential development. Neighborhoods and retail development would likely concentrate in the vicinity of proposed interchanges and along feeder roads. Improved access to Charlotte and I-485 could also encourage additional industrial development, likely along existing US 74 and the parallel railroad corridor. There would be high potential for accelerated growth and moderate potential for indirect impacts to sensitive resources as a result of accelerated growth. This could include impacts to farmland, water resources, and terrestrial habitat.

US 601 Interchange

As part of scoping for the project and for this study, environmental resource and regulatory agency representatives noted that the US 601 interchange proposed as part of the New Location Alternatives seemed to have high potential to induce development, particularly north of the facility in Unionville and the Goose Creek watershed area. They requested that a qualitative discussion of the potential indirect impacts of this interchange be included in this analysis. To facilitate this, local planners were asked about potential land use changes related to implementation of the New Location Alternatives with and without an interchange at US 601.

Local planners commented that this interchange would facilitate access into downtown Monroe and help promote redevelopment efforts ongoing there. This interchange would also provide a direct connection to US 601, which is proposed for widening between the proposed Monroe Connector/Bypass and US 74 and is currently being improved from US 74 to the South Carolina line. This is anticipated to be a primary route for truck traffic traveling from west from Wilmington to bypass Monroe and existing US 74 on the way to South Carolina.

Construction of an interchange at US 601 would also improve access into areas north of the New Location Alternatives (Zone 2), including Unionville and Fairview. However, Unionville has recently denied requests to develop commercial uses along this corridor within its jurisdiction

If the US 601 interchange is not constructed as part of the New Location Alternatives, any induced non-residential development would likely occur at this interchange would shift to another proposed interchange (most likely the Rocky River Road (SR 1514) interchange and/or one of the proposed interchanges near Old Hickory Business Park in Indian Trail). An interchange at Rocky River Road (SR 1514) would provide more direct access from the northern part of the county to the Monroe Regional Airport and surrounding industrial parks.

Residential development patterns are not likely to change if the US 601 interchange is not constructed. Although, local planners generally agree that removal of the US 601 interchange from the New Location Alternatives would negatively impact redevelopment efforts in Monroe, south of the New Location Alternatives.

Table 8. Summary of Potential Indirect Impacts by Zone – New Location Alternative			
Zone	Potential for improved access and mobility	Potential for accelerated growth as a result of the project	Potential for indirect effects on sensitive resources as a result of accelerated growth
1	None	None	None
2	Moderate	Low	Low
3	Moderate	Moderate	Moderate
4	None	None	None
5	High	High	Moderate

7.3 Upgrade Existing US 74 Alternative

The Upgrade Existing US 74 Alternative would include a controlled-access freeway connection between eastern Union County and I-485 and the Charlotte urban area. As a result, it would improve regional accessibility and mobility. Travel time savings for trips from eastern Union County to the Charlotte urban area would be similar to the New Location Alternative.

Zone 1

As with the New Location Alternatives, the Upgrade Existing US 74 Alternative would not affect the rate or intensity of development in this area, and there would likely be no change from the No-Build Alternative.

Zone 2

There would be little to no change expected from the No-Build Alternative in this zone. The upgrades to existing US 74 would do little to improve accessibility to this area and therefore would not be expected to impact the rate or intensity of development in this zone.

Zone 3

The Upgrade Existing US 74 Alternative would improve access through Union County and to the Charlotte/Mecklenburg urban area by providing a high-speed freeway with access to I-485. Although this alternative would not add a new facility with new interchange locations as the New Location Alternatives would, the improved access would offer a similar benefit for Zone 3 in terms of improved accessibility and travel time savings. It is likely that the impact on the rate and type of future development would be the similar to the New Location Alternatives; however, the location of the development may differ from the New Location Alternatives. Under the Upgrade Existing US 74 Alternative, development would be more likely to occur along the US 74 corridor or along feeder roads or parallel roads to US 74 or other major roads in the FLUSA, rather than occurring along a new location roadway in less developed areas. The influence of the Upgrade Existing US 74 Alternative would also not be felt as far from the facility. Overall the Upgrade Existing US 74 Alternative would have moderate potential for induced growth and indirect impacts in this area.

In addition, a direct impact of this alternative would be the displacement of more than 500 existing businesses along US 74. It is assumed that many of these would choose to relocate within the FLUSA, along the US 74 corridor or other roadways including Old Monroe Road/Old Charlotte Highway (SR 1009), Rocky River Road (SR 1514), US 601, Secret Shortcut Road (SR 1501), or other local roads. In some cases, these relocatees may make use of existing buildings; however, in others, they may choose to construct new facilities. New construction to accommodate relocated businesses would be considered an indirect effect of this alternative.

Zone 4

The Upgrade Existing US 74 Alternative would not affect the rate or intensity of development in this area, and there would likely be no change from the No-Build Alternative. Growth in this area is influenced by its proximity to I-485 and Charlotte.

Zone 5

The Upgrade Existing US 74 Alternative would have similar effects to the New Location Alternatives in this area, as it would also provide high-speed freeway access from eastern Union County to I-485 and the Charlotte-Mecklenburg County metropolitan area. Development would concentrate along the existing US 74 corridor and major feeder roads. As with the New Location Alternatives, there would be high potential for accelerated growth and moderate potential for indirect impacts to sensitive resources as a result of accelerated growth from the Upgrade Existing US 74 Alternative in this area.

Table 9. Summary of Potential Indirect Impacts by Zone – Upgrade Existing US 74

Zone	Potential for improved access and connectivity	Potential for accelerated growth as a result of the project	Potential for indirect effects on sensitive resources as a result of accelerated growth
1	None	None	None
2	Very Low	Very Low	Very Low
3	Moderate	Moderate	Moderate
4	None	None	None
5	High	High	Moderate

7.4 Analysis of Indirect Impacts to Notable Features

Potential impacts to notable features associated with the indirect impacts of the project, including land use changes and induced growth, for each analysis scenario are discussed in the following sections. The proposed project would result in direct impacts to other resources, but the resources discussed here were determined through scoping with environmental resource and regulatory agencies to be the resources of concern with regard to indirect impacts. Direct impacts to other resources, including air quality, noise impacts, wetlands and streams, community resources, and neighborhoods, are evaluated in detail in the Draft EIS.

7.4.1 Indirect Impacts to Water Resources

Impacts to water resources including increased non-point source pollution from impervious surface runoff, removal of riparian buffers, and can result from land use modifications.

No-Build Alternative

Residential and commercial development is anticipated to continue within the FLUSA in the absence of the proposed project; thus, it is likely that the No-Build Alternative would involve continued degradation of water quality. However, enforcement of storm water management plans and best management practices at the local level will help to minimize these impacts.

New Location Alternatives

The New Location Alternatives are not expected to induce land use changes in Zones 1 or 4 that would result in impacts to water resources; however, the New Location Alternatives do have potential to induce land use changes in Zones 2 (low potential), 3 (moderate potential), and 5 (high potential). These land use changes would contribute to non-point source and stormwater runoff, sedimentation, and reduction of riparian buffers. Union County and the municipalities in these zones do have storm water and

post-construction ordinances in place, as well as buffer requirements for intermittent and perennial streams, and enforcement of these plans, as well as use of best management practices, would minimize adverse indirect impacts to water resources in these zones. Additional stormwater controls and buffer requirements are in place in Zone 2 to help protect water quality in the Goose Creek watershed. Water resources having the potential to be indirectly affected by non-point source pollution include the following Section 303(d) streams:

- Crooked Creek
- North Fork Crooked Creek
- South Fork Crooked Creek
- Richardson Creek
- Lanes Creek

Upgrade Existing US 74 Alternative

The Upgrade Existing US 74 Alternative is not expected to induce land use changes in Zones 1, 2 or 4 that would result in impacts to water resources; however, the Upgrade Existing US 74 Alternative has the potential to induce growth in Zones 3 (moderate) and 5 (high). This growth would contribute to increased impervious area, non-point source runoff, and reduction of riparian buffers. However, local ordinances in place to control the effects of post-construction stormwater and non-point source pollution would help to minimize adverse indirect impacts to water resources. Water resources having the potential to be indirectly affected include the following Section 303(d) streams:

- Crooked Creek
- North Fork Crooked Creek
- South Fork Crooked Creek
- Richardson Creek
- Lanes Creek

7.4.2 Indirect Impacts to Terrestrial Communities

Indirect effects to terrestrial communities include forest fragmentation and the conversion of forest habitat due to land use changes. Forested areas are scattered throughout the FLUSA. Clearing and land conversion to agricultural, commercial, and residential uses have resulted in fragmentation of contiguous forested stands.

No-Build Alternative

Conversion of forest habitat to other uses is underway in the project area without implementation of the project. Over the past few years, Union County has experienced a high rate of residential and complementary retail development. This is expected to continue, even under the No-Build Alternative, due to the area's proximity to the Charlotte-Mecklenburg County urban area. This continued growth would result in further loss of wildlife habitat and fragmentation of forested areas.

New Location Alternatives

These alternatives are proposed on new location in forested areas and other terrestrial communities that provide habitat for wildlife species. The New Location Alternatives have the potential to indirectly affect terrestrial communities through fragmentation, which would be the result of road construction and induced land use change.

Upgrade Existing US 74 Alternative

The Upgrade Existing US 74 Alternative would not directly fragment terrestrial habitat by adding a new location road, as it would involve improvements to an existing corridor. However, this alternative would have the potential to induce additional development in the FLUSA that could contribute to continued conversion of terrestrial habitats and fragmentation.

7.4.3 Indirect Impacts to Threatened and Endangered Species

Federally listed threatened or endangered species in the project area include:

- Michaux's sumac
- Smooth coneflower
- Schweinitz's sunflower
- Carolina heelsplitter

No populations of Michaux's sumac or smooth coneflower were located in the project area during field surveys conducted for the project, though the species are known to occur in Mecklenburg County (Zone 1). Two populations of Schweinitz's sunflower were identified within the study boundary for the New Location Alternative Detailed Study Alternatives in Zone 3. The habitat for this species includes powerline easements, roadsides, and other disturbed open areas.

There is a known population of Carolina heelsplitter mussel in the Goose Creek watershed (Zone 2).

No-Build Alternative

Residential and commercial development would continue in the FLUSA under the No-Build Alternative and could modify existing habitat for these species. In the case of the plants, land use changes may also create new habitat areas.

New Location Alternatives

- Michaux's sumac and smooth coneflower (Zone 1) – the project is not expected to induce land use changes in this area that would contribute to indirect impacts on these species or their habitat.

- Schweinitz's sunflower – In general, implementation of the New Location Alternatives may indirectly modify existing habitat for the Schweinitz's sunflower through land use change and/or may create new habitat areas along the side of the proposed roadway or other roadways in association with anticipated growth and development.

Known populations of the sunflower occur near the proposed interchange at Unionville-Indian Trail Road (SR 1367) in Zone 3. All New Location Alternatives include an interchange at this location in the same approximate location. Although none would have a direct impact on the sunflower populations, they would encourage development around the interchange that could modify and/or create new habitat areas for the sunflower. In fact, the Town of Indian Trail already has plans for development of a commercial retail development in the southeast quadrant of the interchange, opposite Secrest Shortcut Road (SR 1501) from one of the populations.

NCTA and FHWA will work with USFWS to consider preservation and mitigation measures to avoid and minimize indirect impacts to these known populations.

- Carolina heelsplitter – As discussed above, the New Location Alternatives would have low potential to induce additional growth in Zone 2; however, there would be a small amount of growth that would be induced by the project. Based on trends in this zone, this growth would be primarily low density residential development. The indirect impacts of this growth on streams and the heelsplitter would be minimized by adherence to local watershed protection ordinances and buffer requirements in place in this zone.

Upgrade Existing US 74 Alternative

- Michaux's sumac and smooth coneflower (Zone 1) – The Upgrade Existing US 74 Alternative is not expected to induce land use changes in this area that would contribute to indirect impacts on these species or their habitat.
- Schweinitz's sunflower – In general, the Upgrade Existing US 74 Alternative would also have the potential to affect the habitat of the Schweinitz's sunflower, which exists throughout Union County. The Upgrade Existing US 74 Alternative would have moderate potential to induce growth in Zone 3, where two populations of Schweinitz's sunflower were identified. In this way, the potential for indirect impacts to sunflower habitat from additional development in the area is similar to the New Location Alternatives.

In Zone 3, the Upgrade Existing US 74 Alternative would not be located as close as the new Location Alternatives to the known sunflower populations along

Secrest Shortcut Road (SR 1514); however, this alternative would be expected to encourage growth along major feeder roads to US 74, including Unionville-Indian Trail Road (SR 1367) and Secrest Shortcut Road (SR 1514), which could result in impacts to these populations of sunflower. Additionally, existing plans by the Town of Indian Trail to construct commercial retail development in the vicinity of the Unionville-Indian Trail Road (SR 1367)/Secrest Shortcut Road (SR 1514) intersection would continue.

- Carolina heelsplitter – The Upgrade Existing US 74 Alternative is not expected to induce land use changes in Zone 2, where habitat for the Carolina heelsplitter is found.

7.4.4 Indirect Impacts to Cultural Resources

The assessment of the indirect effects on identified cultural resources focuses on the presence of National Register listed or eligible sites within the FLUSA. These properties are shown on **Figure 5**.

No-Build Alternative

Residential and commercial development is anticipated to continue within the FLUSA under the No-Build Alternative. This development could affect historic sites by altering surrounding land uses and viewsheds or creating pressure to covert historic property to another use.

- Secrest Farm & Hiram Secrest House – Located near Secrest Shortcut Road (SR 1501) and Rocky River Road (SR 1514), development would likely occur along these routes under the No-Build Alternative, potentially indirectly impacting these properties.
- William Bivens House – This property is located in a relatively undeveloped area of Zone 5 on Monroe Ansonville Road. However, as residential development continues in this area, it is possible that the property would be indirectly impacted.
- Perry-McIntyre House – There is existing residential development immediately across from this property, as well as nearby. This pattern could be expected to continue under the No-Build Alternative.

New Location Alternatives

All New Location Alternatives have the potential to indirectly affect sites that are listed on the National Register or eligible to be listed, particularly Secrest Farm and Hiram Secrest House, William Bivens House, and Perry-McIntyre House. The New Location Alternatives are similar proximity to these sites and could induce increased

development in the vicinity of these properties, affecting their setting or creating pressure to convert the property to another use.

- Secret Farm & Hiram Secret House – All New Location Alternatives include an interchange at Rocky River Road (SR 1514) and were determined to have equivalent potential for indirect impacts to these properties. However, because current growth rates in the project area are already high, the potential for indirect impacts is moderate and the New Location Alternatives were determined to have No Adverse Effect on these properties.
- William Bivens House – This property is located on Monroe Ansonville Road in Zone 5. No interchange is proposed on Monroe Ansonville Road with the New Location Alternatives, which would help minimize indirect impacts associated with the project.
- Perry-McIntyre House – This property is located on Ansonville Road (SR 1002) in Zone 5. No interchange is proposed on Ansonville Road (SR 1002) with the New Location Alternatives, which will help to minimize indirect impacts associated with the project. Although the project is anticipated to induce land use change in Zone 5, there is existing development across from and in the vicinity of this property; therefore, the impact of the New Location Alternatives is expected to be the same as the No-Build Alternative on this property.

Upgrade Existing US 74 Alternative

- Secret Farm & Hiram Secret House – The Upgrade Existing US 74 Alternative is expected to induce moderate land use change and growth in Zone 3 where growth rates are already high. These properties are located near Rocky River Road (SR 1514) and Secret Shortcut Road (SR 1501), which are primary thoroughfares in the FLUSA; therefore, it is likely that they would be impacted as development concentrates along these routes.
- William Bivens House – The Upgrade Existing US 74 Alternative would induce land use changes in Zone 5, particularly along major feeder roads to US 74, including Monroe Ansonville Road. This alternative would accelerate the pace of development along this route, leading to indirect impacts to the historic property. This impact is potentially greater than that of the New Location Alternatives because there would be direct access to Monroe Ansonville Road from the improved US 74, as opposed to the New Location Alternatives which would not include direct access to this road.
- Perry-McIntyre House – The Upgrade Existing US 74 Alternative would induce land use changes in Zone 5, particularly along feeder roads to US 74, which include Ansonville Road (SR 1002). Although there is existing development in

the vicinity of this property, the Upgrade Existing US 74 Alternative would likely accelerate the pace of development in this area, leading to additional changes in setting and viewshed for this historic property. As with the William Bivens House, this alternative would have greater potential for indirect impacts than the New Location Alternatives because Ansonville Road (SR 1002) would have direct access to the improved US 74 corridor.

7.4.5 Indirect Impacts to Prime Farmland

As shown on **Figure 6**, prime farmland soils are located in three primary areas: the Mecklenburg County portion of the FLUSA, just west of the City of Monroe, and scattered along US 601 and NC 200 north of US 74.

No-Build Alternative

Farmland within the FLUSA is already being converted to other uses, particularly in Zones 1, 3, and 4 where greater amounts of prime farmland soils exist. This trend is expected to continue in these areas even without implementation of the project.

New Location Alternatives

There is very little prime farmland soil in Zone 5 where the New Location Alternatives would have the most potential to influence land use changes. Indirect impacts to prime farmland soil would be limited.

Upgrade Existing US 74 Alternative

The Upgrade Existing US 74 Alternative would be expected to have a moderate impact on development rates and patterns in Zone 5. There is very little prime farmland soil in this area; therefore, indirect impacts to prime farmland soil would be limited.

8. IDENTIFICATION AND ANALYSIS OF POTENTIAL CUMULATIVE EFFECTS (STEP 5)

Scoping meetings were held with environmental resource and regulatory agencies, including US Army Corps of Engineers, US Fish and Wildlife Service, NC Division of Water Quality, NC Wildlife Resources Commission, and US Environmental Protection Agency prior to the start of this study. The purpose of these meetings was to collaboratively identify the sensitive resources for evaluation, identify the study methodologies, define the study area boundaries, and confirm the timeframe for the assessment. Based on these meetings, the following resources were identified as resources to be evaluated from a cumulative effects perspective:

- water quality and aquatic habitat
- Carolina heelsplitter habitat (Goose Creek watershed)
- terrestrial communities and habitat

A listing of other reasonably foreseeable actions (federal and non-federal) that were considered in this cumulative effects analysis is included in Section 6.2. It should also be noted that the proposed project would have direct effects to other notable features and resources. These effects are discussed in detail in the Draft EIS.

8.1 Water Quality and Aquatic Habitat

8.1.1 Affected Environment

The primary watersheds in the project area are Subbasins 03-07-12 (portion of Rocky River, Goose and Crooked Creeks) and 03-07-14 (portion of Rocky River and the Richardson and Lanes Creek Watersheds) of the Yadkin-Pee Dee River Basin. The majority of Subbasin 03-07-12 lies outside of the project area within Cabarrus County, but portions of Mecklenburg, Union and Stanly counties are also encompassed. Municipalities include Kannapolis, Concord, Locust, Mint Hill, Indian Trail, Lake Park and Unionville. Richardson and Lanes Creeks flow in a northeasterly direction into this lowest segment of the Rocky River. Lanes Creek actually begins in South Carolina. Most of Subbasin 03-07-14 lies in Union County, but portions of Anson and Stanly counties are also encompassed. Major municipalities include Unionville and Monroe.

NCDENR-DWQ prepares basinwide water quality plans for each of the 17 major watershed basins in North Carolina every 5 years. These plans are intended to identify water quality problems and restore full use to impaired waters, identify and protect high value resource waters, and protect unimpaired waters yet allow for reasonable economic growth. Plans for the Yadkin-Pee Dee basin were completed in May 1998 and March 2003, and a draft plan (July 2008) is current available. Water quality information for these subbasins is included in these plans and shows a trend of generally poor water quality throughout the project area, with the number of stream miles listed as impaired

continuing to increase. The plans do indicate some improvements in isolated areas as water quality protection measures and regulations are put in to practice and take effect.

The following stream reaches were identified in the 1998 plan as impaired: Richardson Creek (12.5 miles from dam at Lake Lee to SR 1649) and Lanes Creek (36.8 miles from SR 1929 to Rocky River). These two reaches were still listed as impaired in the 2003 report, which also noted that Bearskin Creek and Stewarts Creek were identified as having notable water quality impacts as well as a result of stormwater runoff and nonpoint source pollution from surrounding development and agricultural land.

According to the 2008 draft plan and 2008 draft 303(d) list, the following streams in the project area are impaired:

- Richardson Creek – from 0.2 miles downstream of the mouth of Beaverdam Creek to the Monroe Water Supply Dam (2.5 miles) and from Lake Lee to Watson Creek (13.1 miles) due to chlorophyll a and turbidity
- Lanes Creek – from its source to Rocky River (54.5 miles) due to poor biological integrity
- South Fork Crooked Creek – from its source to Crooked Creek (14.4 miles) for impaired biological integrity
- North Fork Crooked Creek – from its source to Crooked Creek (12 miles) for turbidity and impaired biological integrity
- Goose Creek – from SR 1524 to Rocky River (13.1 miles) for impaired biological integrity

Additionally, since 2003, Stewarts Creek and Beaverdam Creek have degraded and are now considered impaired. Stewarts Creek is listed for a stretch of 8.3 miles beginning 0.4 mile downstream of the mouth of Stumplick Branch due to poor biological integrity. Beaverdam Creek is listed from its source to Lanes Creek (12.1 miles) for low dissolved oxygen.

However, some stream segments have been delisted from the 303(d) list, according to the 2008 draft report. This includes Goose Creek from its source to SR 1524. This 3.2-mile reach was previously listed for fecal coliform. A total maximum daily load (TMDL) was developed and approved by USEPA for this pollutant. Also, Richardson Creek from Watson Creek to Negro Head Creek (4.7 miles) was listed from 1998 to 2008 for impaired biological integrity, but an assessment of new data documents that applicable water quality standards are now being met.

8.1.2 Cumulative Effects

No-Build Alternative

Actions including residential and infrastructure improvements in Union County have the potential to cumulatively impact water quality through erosion and stream

sedimentation. Increasing non-point source pollution associated with increasing impervious surfaces and land disturbing activities are anticipated with or without the construction of the proposed project.

New Location Alternatives

The New Location Alternatives and associated growth and development in Zones 3 and 5 would increase the amount of soil disturbing activities, thus increasing the risk of stream sedimentation and turbidity from construction-related erosion. This impact is also possible in Zone 2, but to a lesser extent, as less development is expected to occur there. However, local sediment and erosion control regulations, post-construction and storm water ordinances, and other water quality protection measures should help to minimize these effects. The delisting of some streams from the 303(d) list is evidence that these measures are showing some effectiveness.

Upgrade Existing US 74 Alternative

The effects of nearly 500 businesses relocating within the FLUSA, along with the growth expected to be induced in Zones 3 and 5 from the Upgrade Existing US 74 Alternative, as well as the effects of other recent and planned projects in the area, could result in low to moderate cumulative effects to water resources. Although local water quality protection regulations would help to minimize these effects, the cumulative effect of this amount of land development, particularly the business development, could affect water quality in the area.

8.2 Carolina Heelsplitter Habitat (Goose Creek Watershed)

8.2.1 Affected Environment

Goose Creek watershed covers approximately 26,880 acres of land (42 square miles) and includes approximately 163 stream miles in the Yadkin/Pee Dee River Basin. The creek originates in eastern Mecklenburg County near the Town of Mint Hill and flows east to the Rocky River in Union County. Seven municipalities are at least partially included in the watershed, including Mecklenburg and Union counties, and the towns of Mint Hill, Indian Trail, Stallings, Fairview and Hemby Bridge.

Land cover in the watershed has historically been predominantly agricultural. Crops grown in the area include soybeans, corn and wheat, and there are many poultry farms. Historically, many forested stream buffers were cleared or narrowed and channels were straightened. Dams and other impoundments were constructed to create mill and farm ponds, and active gold mine operations were sources of chemicals and sediment.

Over the past two decades, residential growth has increased in this area as a result of strong economic growth of the Charlotte-Mecklenburg area and construction of the I-485 bypass around Charlotte. According to the NC Office of State Planning, Mecklenburg County's population grew at an estimated rate of 36.0% between 1990 and 2000, and a

rate of 24.1% between 2000 and 2007. Mint Hill's population grew by 46.3% between 1990 and 1998. Union County, a historically rural agricultural county, grew at a rate of 46.9% between 1990 and 2000, making it the third fastest growing county in North Carolina, and a rate of 47.4% between 2000 and 2007. The Union County municipalities that comprise the Goose Creek watershed have all grown at rates above 23%. The state of North Carolina characterizes "high growth" areas as those with growth rates above 16.2%, and thus classifies the areas that comprise the Goose Creek watershed as high growth areas. The NC Office of State Planning predicts that the high growth trends in Mecklenburg and Union counties will continue into the future.

The Carolina heelsplitter is the only federally-listed endangered mussel species in Mecklenburg and Union counties. It has a long history in North Carolina, dating back to its discovery in 1852. It was presumed to be extinct until it was rediscovered in 1987. Then, in 1993, it was listed as an endangered species and critical habitat was designated in 2001 by the USFWS. Historical records indicate that the species was once found in several places in the Charlotte area of the Catawba River basin and in many adjacent areas, including the Yadkin-Pee Dee River system. However, recent records show that the Carolina heelsplitter has been eliminated from most of these locations. Today, nine known populations of the heelsplitter remain: three in Union County, North Carolina watersheds (Goose Creek, Waxhaw Creek and Sixmile Creek) and the remainder in South Carolina. The decline in populations has generally been attributed to degradation of habitat and water quality due to human activities such as development, agriculture and forestry. Based upon intensive biological surveys, the range of the Carolina heelsplitter has been reduced to one-half of its historical range in Goose Creek.

Water quality in Goose Creek is depressed. It has been included on North Carolina's list of waters not meeting water quality standards. Historically, the reason for this listing was identified as elevated fecal coliform levels from construction and urban runoff. In addition, NCDENR has noted that Goose Creek is affected by unstable stream banks and has received a poor water quality rating based on biological sampling. However, a portion of the creek was recently removed from the 303(d) list – a 3.2-mile reach previously listed for fecal coliform. A TMDL was developed and approved by USEPA for this pollutant.

There are a number of past, ongoing, and planned efforts to improve water quality in this watershed. Many of these are described in Section 4.6, including NPDES Phase II regulations, local sediment and erosion control regulations, post-construction and stormwater ordinances, SWIM initiatives, and buffer requirements. In addition, NCDENR and the NC Environmental Management Commission have proposed rules for the Goose Creek watershed to further protect the heelsplitter.

Other efforts are being spearheaded by USFWS and NCWRC. NCWRC has acquired 23 conservation easements on 156 acres along Goose Creek and its main tributary, Duck

Creek, using a \$1.8 million NC Clean Water Management Trust Fund grant specifically awarded to address Goose Creek’s water-pollution problems. In addition to buying conservation easements, NCWRC has used grants to fund other projects, including the restoration and stabilization of five tributary streams and ditches bordering Goose Creek.

8.2.2 Cumulative Effects

No-Build Alternative

Due to the proximity of the area to Charlotte and I-485, some residential growth is expected to continue to occur in the Goose Creek watershed area that could contribute to impacts on water quality and Carolina heelsplitter habitat. However, local land use and water quality protection regulations should help minimize these cumulative effects.

New Location Alternatives

The New Location Alternatives would have the potential to induce a low amount of additional development in Zone 2, which includes the Goose Creek watershed. Induced growth would be limited by land use regulations to promote low density residential development, protect riparian buffers, and limit impervious area that have been put in place and enforced at the local level to help protect Goose Creek watershed. These regulations will help minimize cumulative effects on the watershed and heelsplitter habitat.

Upgrade Existing US 74 Alternative

The Upgrade Existing US 74 Alternative would not be expected to contribute additional cumulative effects on Goose Creek watershed and habitat for the Carolina heelsplitter mussel.

8.3 Terrestrial Communities and Habitat

8.3.1 Affected Environment

Estimates of land cover in Union County between 1984 and 2003 show a nearly 30% reduction in trees and an almost 64% increase in urban area (see **Table 10**).

Table 10. Land Cover in Union County*			
Land Cover	1984	2003	Change
Trees	163,019	114,954	-29.5%
Open Space	80,400	120,279	49.6%
Urban	4,645	12,778	63.6%
Water	1,130	1,181	-4.3%
Total Acres	249,195		

*Source: www.americanforests.org

In 2003, trees still covered nearly half (46.1%) of Union County, with another 48.3% considered open space or grass with scattered trees (including agricultural land). 5.1% of the county's land cover was classified as urban, up from 1.9% in 1984.

8.3.2 Cumulative Effects

No-Build Alternative

Habitat loss is a result of agricultural conversion and urban and residential development. Development is expected to continue in Union County under the No-Build Alternative, resulting in habitat loss and conversion of forest to urban and residential uses. A number of projects are discussed in Section 6.2 that will contribute to this effect.

New Location Alternatives

Construction of the New Location Alternatives has the potential to add to forest fragmentation and wildlife habitat disturbance, particularly in portions of eastern Union County where the project is anticipated to induce additional growth. Cumulatively, there are several projects planned for Zones 1, 3, and 4 that could add to this effect. There are few projects proposed in Zone 2, and the New Location Alternatives are not anticipated to have a substantial impact on that area; therefore, there are not expected to be cumulative effects on terrestrial habitat in Zone 2.

Upgrade Existing US 74 Alternative

As noted above, the relocation of 500 businesses in the FLUSA, as well as additional development induced by the Upgrade Existing US 74 Alternative in Zones 3 and 5 and other planned projects in the area, could have low to moderate cumulative effects on terrestrial habitat. These effects would occur in Zones 1, 3, 4 and 5.

9. ICE CONCLUSIONS

Union County is one of the fastest growing counties in the country according to the US Census Bureau. It is part of the Charlotte-Gastonia-Rock Hill NC-SC MSA, and Charlotte is the largest city in the Carolinas.

The Monroe Bypass/Connector will improve mobility and accessibility along the US 74 corridor whether constructed as a new location roadway or if existing US 74 is upgraded. According to local planners, there is a heightened awareness of the need to support controlled non-residential growth throughout most the municipalities and the County; however, most of the municipalities and Union County have land use plans and ordinances (including post-construction and stormwater ordinances) in place to control the type and density of development.

With respect to estimating the indirect impacts associated with this project, the research, interviews, and analysis suggest that growth is already occurring and would continue to occur within the majority of the FLUSA with or without construction of the project. Growth as an indirect impact of the construction of the New Location Alternatives or Upgrade Existing US 74 Alternative would be governed through adherence to local zoning, subdivision, and comprehensive plans which would direct growth to appropriate areas and within acceptable densities.

It is anticipated that any indirect impacts that occur within the FLUSA would be in the form of complementary land development (such as highway-retail oriented businesses) surrounding the interchange locations, potential shifts of commercial development to more accessible and visible interchange locations, and residential and associated development in proximity to the new location facility or upgraded facility. Construction of this facility (as a New Location Alternative) has been anticipated for many decades, and it has been programmed into land use plans and other local regulations; in addition, local officials are targeting development for the major feeder roads in anticipation of the project.

No-Build Alternative

The Monroe Connector/Bypass has been planned by the NCDOT for a number of years, and the local jurisdictions have been planning with the project in mind. Therefore, their land use plans incorporate the project. However, based on recent and current growth trends in the FLUSA, it is likely that this growth would continue even without implementation of the project under the No-Build Alternative. The location of proposed new development may shift to existing corridors, and existing corridors may experience more redevelopment. In general, if the Monroe Connector/Bypass is not constructed, land use patterns would likely continue as they are currently, with development concentrated in the southeastern part of Mecklenburg County and northwestern part of

Union County. The eastern part of Union County would experience little growth in residential, commercial or industrial uses.

New Location Alternatives

If the Monroe Connector/Bypass is constructed on new location, residential development patterns would not be expected to change much in the western and northwestern part of the FLUSA (Zones 1 and 4) because these areas tend to be more influenced by proximity to Charlotte and I-485. Residential growth would not be expected to increase substantially in Zone 2 as a result of the project as land use and environmental restrictions, lack of water/sewer service, unsuitable soils for development, and a local desire to maintain rural character are constraints to development in that area. Because of these constraints in Zone 2 and low expected indirect impacts, there would not be a discernable difference in land use change with or without the US 601 interchange with respect to indirect land use effects in the vicinity of Goose Creek.

The New Location Alternatives may influence residential development in the eastern part of the FLUSA and Union County in general, because the project would improve travel time from those areas (Zones 3 and 5) to Charlotte. The project would likely induce an increase in proposed housing density in Zone 3 and pace of development in Zone 5. Population growth may be shifted from other areas of the region to Zone 5, as the project would provide more convenient housing and easier commutes to the Charlotte-Mecklenburg urban area. Water and sewer service are likely to limit the pace of urban development, particularly in Zone 3, which has struggled to keep up with demand for these services over the past several years and only recently lifted a moratorium on development. It is likely that growth in this area may continue to occur in spurts as water and sewer capacity becomes available over the next several years. Construction of the project may influence the locations where this growth occurs.

In terms of industrial and commercial development, there would again be no effect from the project on Zones 1 or 4. In Zone 3, Stallings and Union County planners hope that existing US 74 might redevelop into a more vibrant employment corridor (with office uses as opposed to drive-by retail uses), with industrial development in areas near the Monroe Regional Airport, near the planned interchanges with the New Location Alternatives, along feeder roadways (such as Rocky River Road/SR 1514, US 601 between the Monroe Connector/Bypass and the City of Monroe), and near the Old Hickory Business Park in Indian Trail. If the interchange is not constructed at US 601, the commercial and industrial uses that would develop between the Monroe Connector/Bypass and the City of Monroe might be more likely to shift to the proposed interchanges at Rocky River Road (SR 1514) and/or one of the proposed interchanges near the Old Hickory Business Park in Indian Trail.

Upgrade Existing US 74 Alternative

If existing US 74 is upgraded with frontage roads, there would be similar indirect impacts to residential development as from the New Location Alternatives. The addition of a controlled access freeway would result in substantial time savings between Zones 3 and 5 and the Charlotte urban area, which could lead to an increase in residential development in these areas. There would not likely be any impact on residential development in Zones 1 and 4, as these zones are more influenced by their proximity to I-485 and Charlotte, or in Zone 2 due to its distance to US 74.

With the Upgrade Existing US 74 Alternative, nearly 500 businesses along existing US 74 would be forced to relocate. It is likely that they would relocate elsewhere along US 74 or along another major thoroughfare in the project area – Old Monroe Road/Old Charlotte Highway (SR 1009), US 601, NC 200, Secrest Shortcut Road, or other feeder road to US 74. Other commercial and industrial uses would remain concentrated along US 74 and near the Monroe Regional Airport. Since there are no interstate facilities, and only two US highways in Union County, there are not very many locations that would be suitable for additional non-residential development. Commercial and industrial development may shift somewhat to the US 601 corridor if this alternative is constructed.

If the Upgrade Existing US 74 Alternative is constructed, there would be fewer available locations for commercial and industrial development. This type of development would likely occur as redevelopment or infill development along existing US 74, along US 601 (the only other US highway in the County), or perhaps scattered along other county roadways.

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- Legend**
- Future Land Use Study Area (FLUSA)
 - Demographic Area
 - ICE Zones
 - 2000 Census Tracts
 - County Boundary
 - Interchange Location
 - Interstate Highway
 - US Highway
 - NC State Highway
 - Railroad

- Detailed Study Alternative**
- 18A
 - 31
 - 34
 - 71
 - 22A
 - 40
 - 30
 - 41
- Mecklenburg and Union Counties
North Carolina Counties

Source: Mecklenburg County and Union County GIS.
Map Printed On 2-2-09.



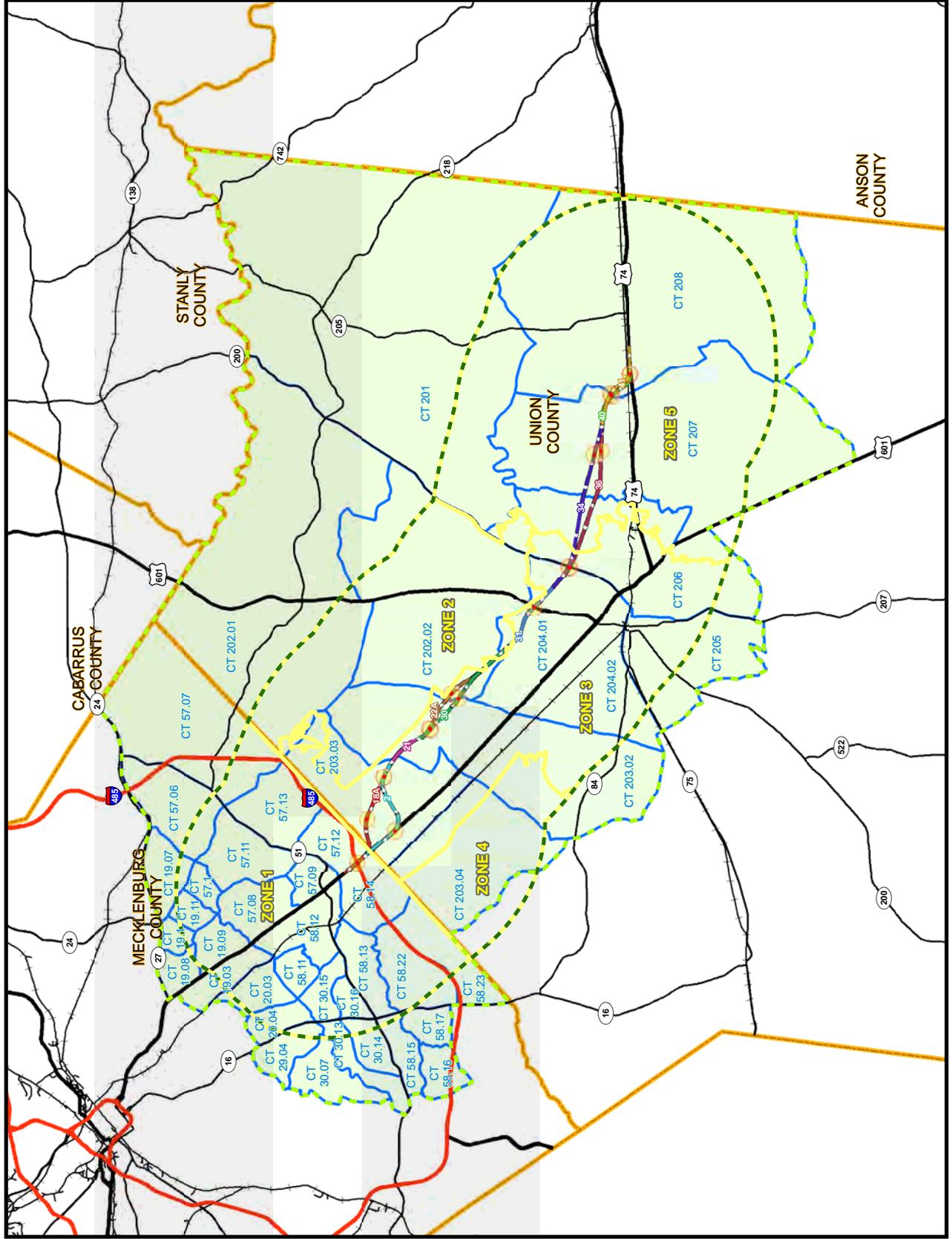
TURNPIKE AUTHORITY

STIP PROJECT
NO. R-3329/R-2559
Mecklenburg County and Union County

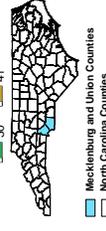
**MONROE CONNECTOR/
BYPASS**

**FUTURE LAND USE
STUDY AREA AND
DEMOGRAPHIC AREA**

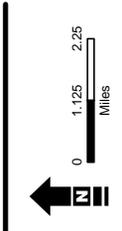
Figure 2



- Legend**
- ICE Zones
 - Interchange Location
 - Interstate Highway
 - US Highway
 - NC State Highway
 - Major Roads
 - Railroad
 - River / Stream
 - County Boundary
 - Water Body
 - Park
- Existing Land Use**
- Residential and Agricultural
 - Commercial / Retail / Office
 - Industrial / Warehouse
 - Common Area
 - Underscribed
- Detailed Study Alternative**
- 18A
 - 21
 - 22A
 - 30
 - 31
 - 34
 - 36
 - 40
 - 41



Mecklenburg and Union Counties
 Source: Mecklenburg County and Union County GIS
 Map Printed On 2-2-09

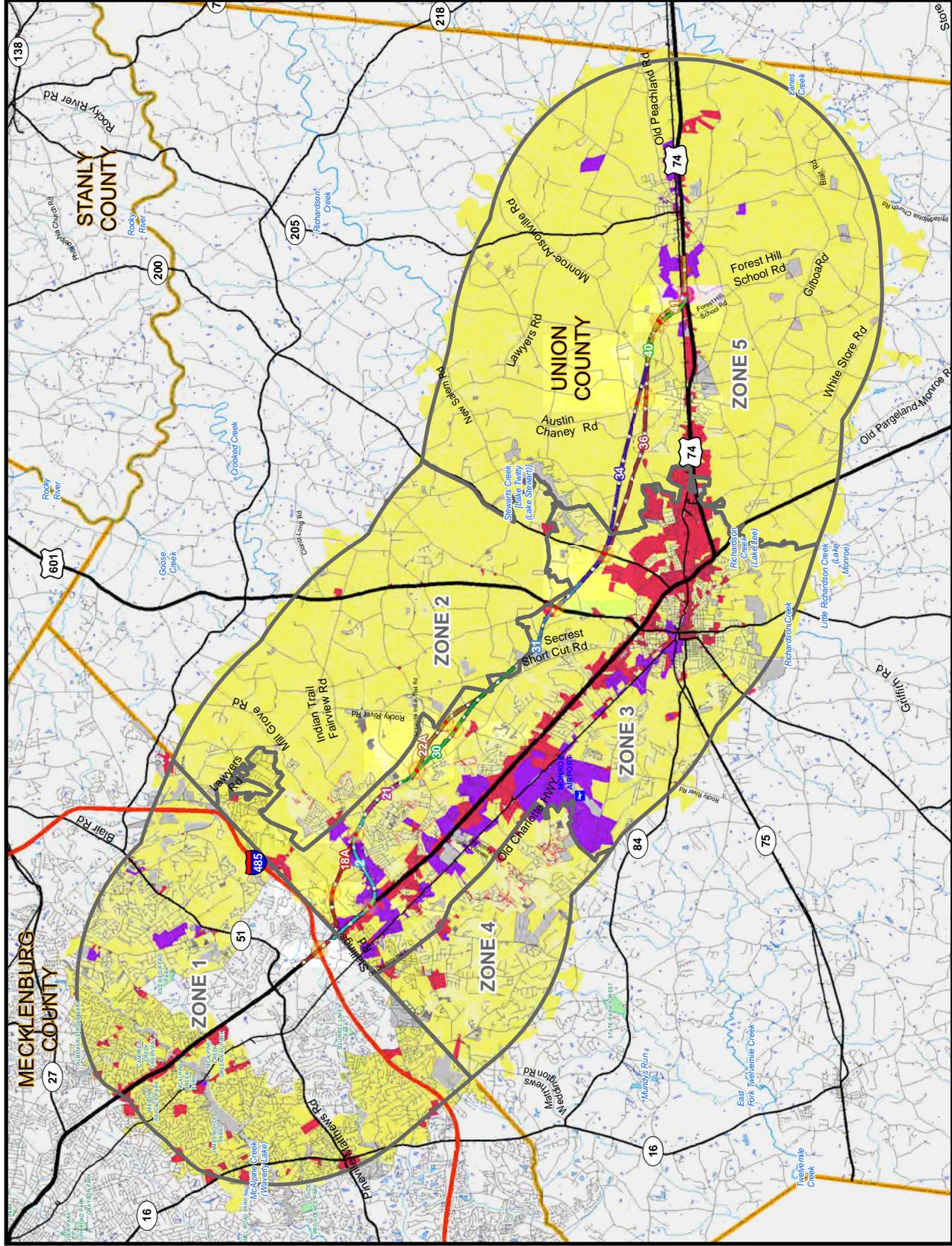


TURPIKE AUTHORITY
 NORTH CAROLINA
 STIP PROJECT
 NO. R-3329/R-2559
 Mecklenburg County and Union County

**MONROE CONNECTOR/
 BYPASS**

EXISTING LAND USE

Figure 3



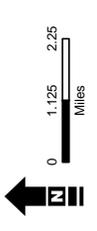
Legend

- Interchange Location
- Interstate Highway
- US Highway
- NC State Highway
- Major Roads
- Railroad
- River / Stream
- ICE Zones
- County Boundary
- Park
- Future Land Use**
- Residential
- Commercial / Retail / Office
- Industrial / Warehouse
- Monroe ETJ*
- Common Area
- Underscribed

- * Extra-Territorial Jurisdiction**
- Detailed Study Alternative**
- 18A
 - 2
 - 21
 - 22A
 - 30
 - 31
 - 34
 - 36
 - 40
 - 41



Mecklenburg and Union Counties
 North Carolina Counties
 Source: Mecklenburg County and Union County GIS.
 Map Printed On 2-2-09



North Carolina Turnpike Authority

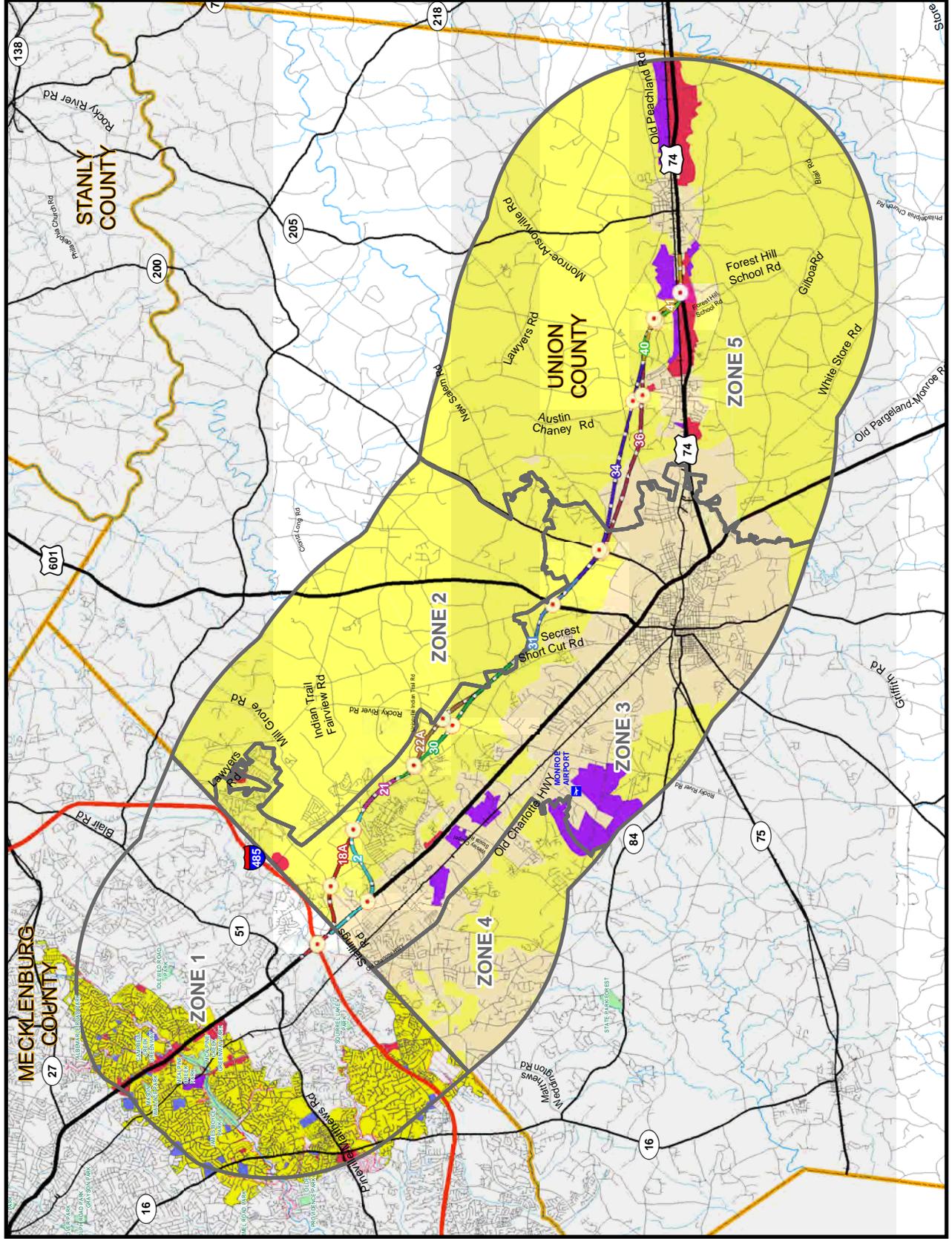
STIP PROJECT
 NO. R-3329/R-2559

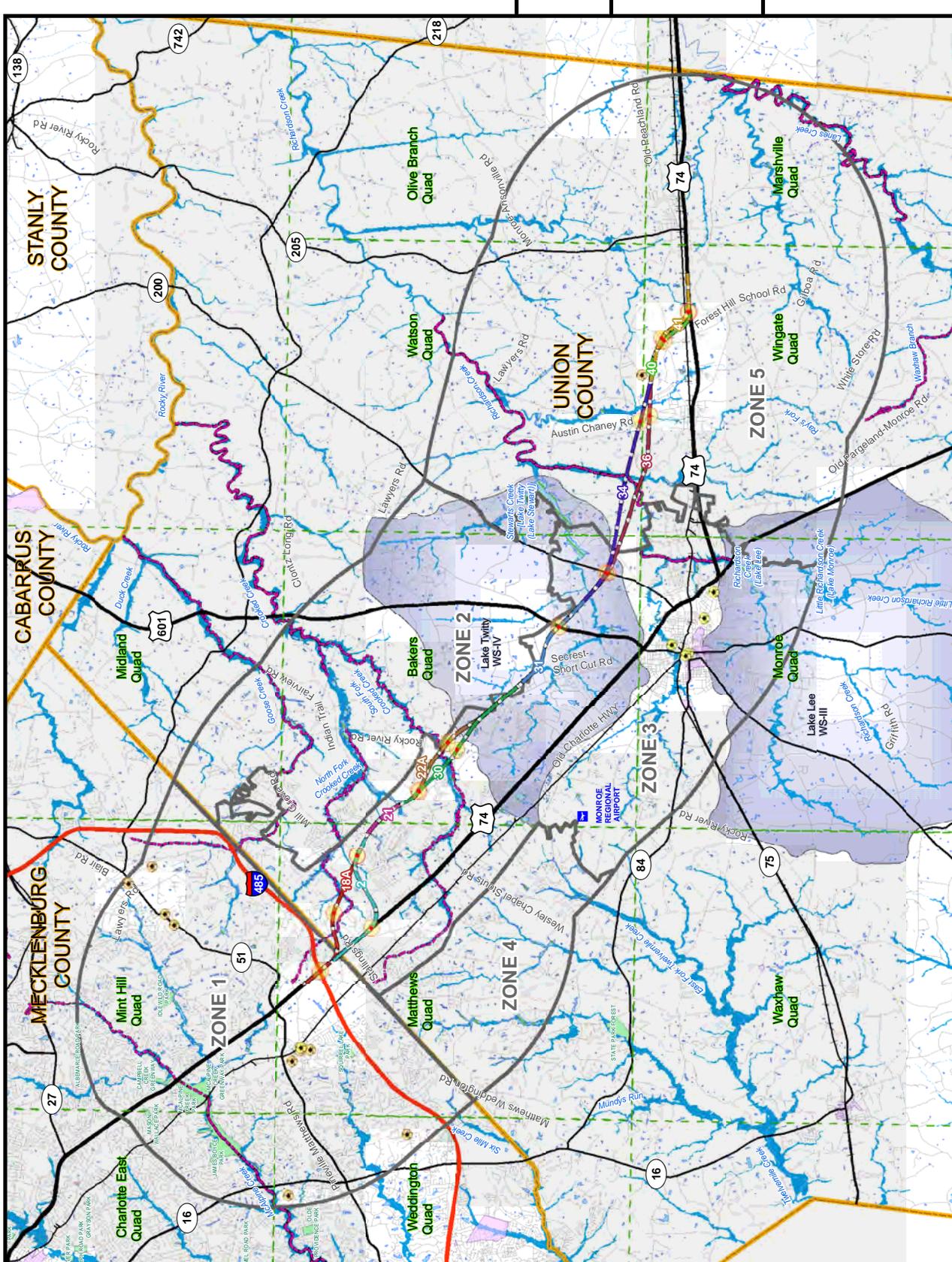
Mecklenburg County and Union County

**MONROE CONNECTOR/
 BYPASS**

FUTURE LAND USE

Figure 4





Legend

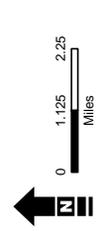
- Interchange Location
- National Register Structure
- Historic Study List Structure
- National Register District
- Historic Study List District
- ICE Zones
- USGS Quadrangle
- County Boundary
- Interstate Highway
- US Highway
- State Highway
- Railroad
- Major Roads
- 303(d) Stream
- River / Stream
- Water Supply Watershed
- National Wetlands Inventory
- FEMA 100 Year Floodplain
- Water Body

Detailed Study Alternative

- 18A
- 22A
- 2
- 30
- 31
- 34
- 36
- 38
- 40
- 41

Mecklenburg and Union Counties
 North Carolina Counties

Source: Mecklenburg County and Union County GIS.
 Map Printed On 2-2-09.



Turpike Authority

STIP PROJECT
 NO. R-3329/R-2559

Mecklenburg County and Union County

**MONROE CONNECTOR/
 BYPASS**

NOTABLE FEATURES

Figure 5

- Legend**
- Interchange Location
 - Interstate Highway
 - US Highway
 - State Highway
 - Railroad
 - Major Roads
 - River / Stream
 - ICE Zones
 - County Boundary
 - Water Body
 - Prime Farmland

- Detailed Study Alternative**
- 18A
 - 21
 - 22A
 - 30
 - 31
 - 34
 - 36
 - 40
 - 41



Mecklenburg and Union Counties
 North Carolina Counties
 Source: Mecklenburg County and Union County GIS.
 Map Printed On: 2-2-09.

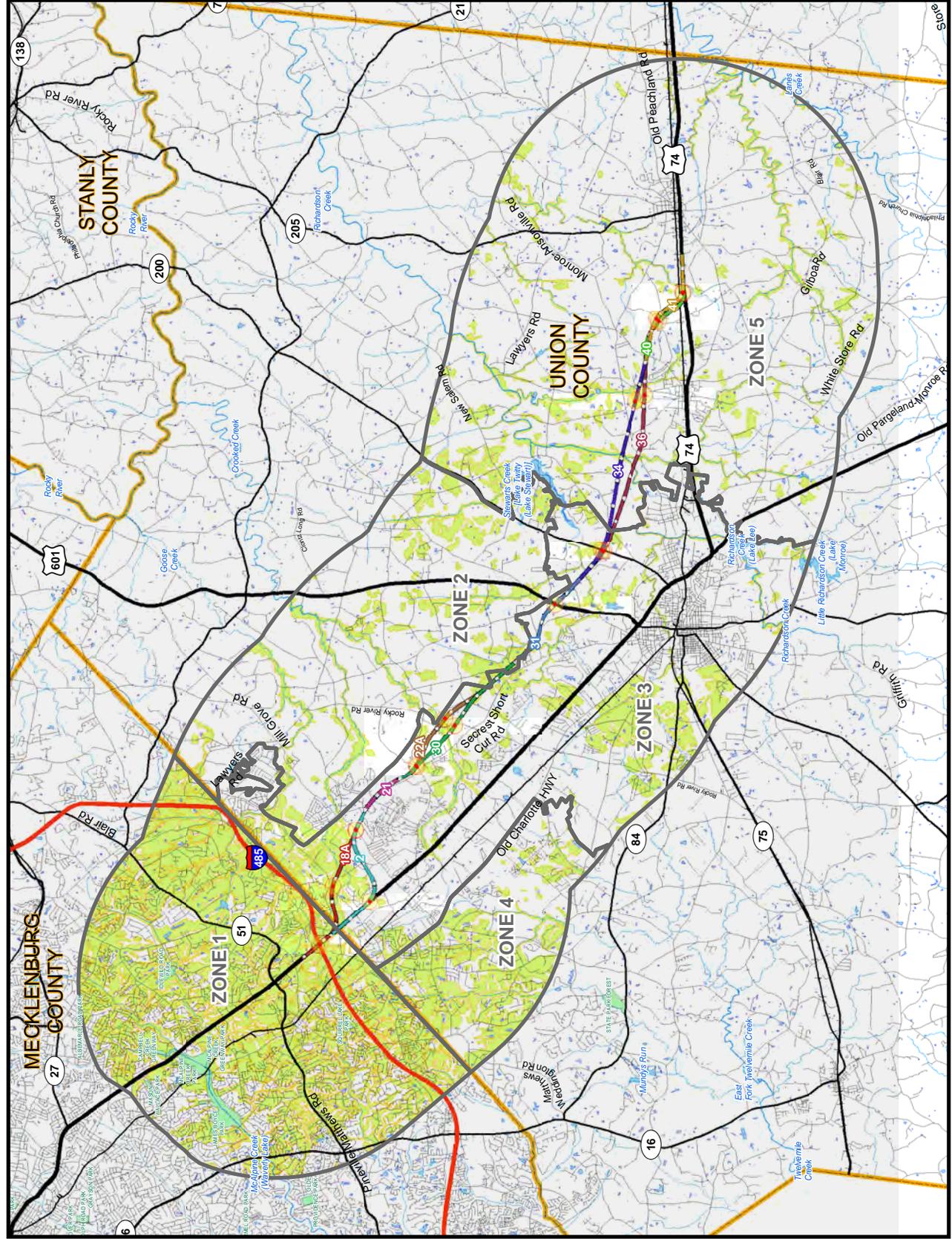


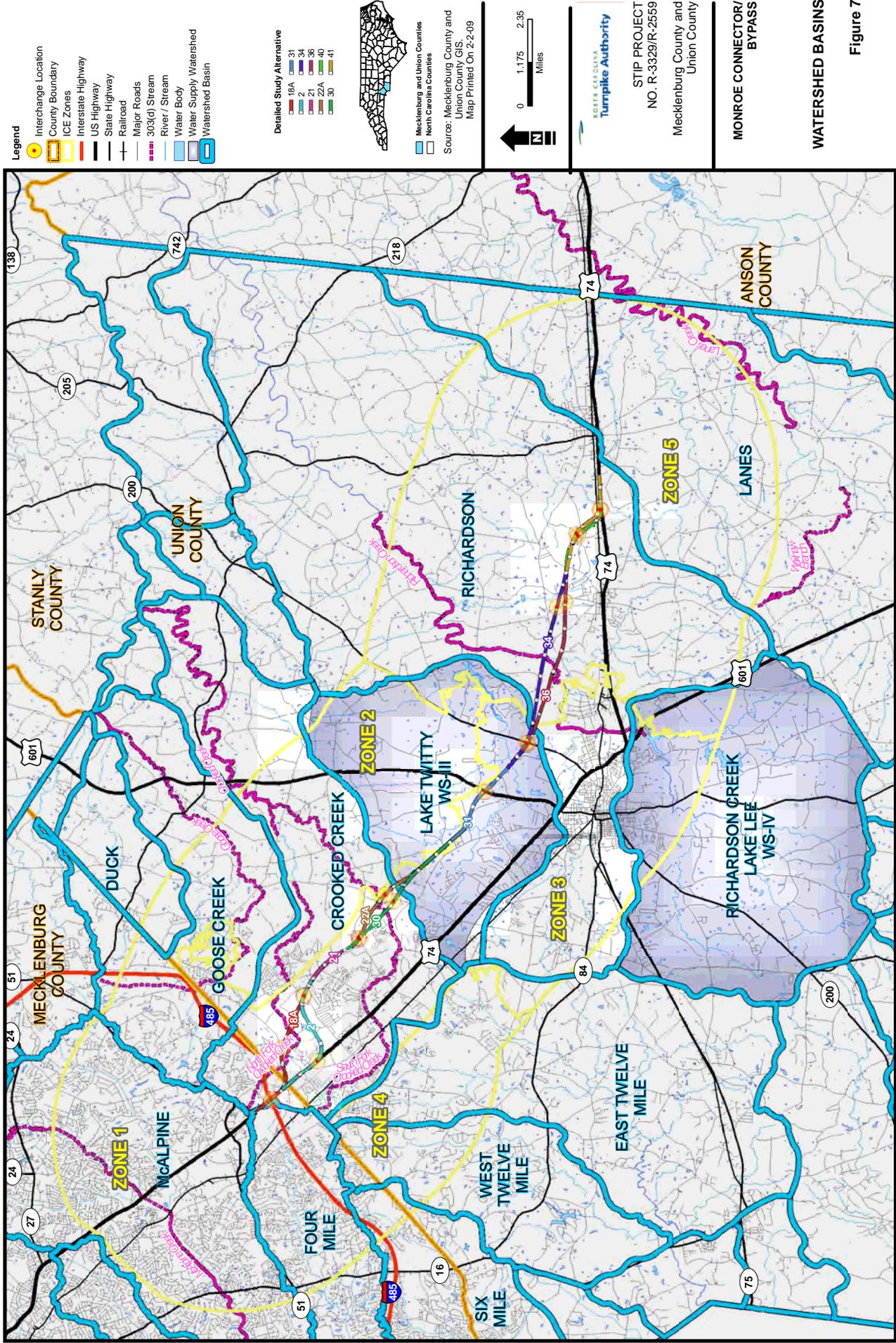
TURPIKE AUTHORITY
 NORTH CAROLINA
 STIP PROJECT
 NO. R-3329/R-2559
 Mecklenburg County and Union County

**MONROE CONNECTOR/
 BYPASS**

**PRIME
 FARMLAND SOILS**

Figure 6





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APPENDIX A
INTERVIEW SURVEY
MEETING MINUTES

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Monroe Connector/Bypass (STIP R-3329/R-2559)

1. How many years have you been with this agency? How many years have you been in this position? How familiar are you with the project study area?

2. What community plans or local data pertaining to annexation/rezoning activities, economic development opportunities, new public infrastructure or natural resources are available? Are there updates to any current plans anticipated in the near future? (Land Use Plans / Area Plans / Corridor Plans, LRTP updates, transit service routes, Flood Damage Prevention Ordinances, Environmental Control Regulations, etc).

3. Currently, the study is using NCDOT provided GIS data and mapping. Is there any newer mapping or local GIS information available?

4. Where is growth occurring in your jurisdiction as well as regionally? What is the rate of recent and planned annexations and general annexation practices?

5. How would you characterize the commercial market? Where are the employment centers?

6. Are there any major employer relocations (either moving into or out of the area – have any closed recently)?

7. Are there any major commercial/residential/industrial developments planned in your jurisdiction? Airport expansions (progress of runway lengthening and possible impacts)?

8. Sewer treatment plants (capacity or planned expansions)?
Where is there existing water and sewer coverage? Any planned extensions, upgrades or additions?

9. How would you describe the local commitment to development (pro-growth vs anti-growth)? Is the political climate stable or unstable? How likely is your local government likely to grant a variance or exception to allow a private development to take place?

10. Are there any local development incentives?

11. What are the major development constraints (natural or human) in your jurisdiction? What are the important natural resources in the area? Which of these resources are sensitive to new development?

12. Are there any local riparian buffer regulations or other local land use controls (other than zoning)?

13. Any local runoff management programs? PHASE II Stormwater Management? Floodplain ordinances?

14. Any development moratoria?

15. What is the potential for new residential, commercial and office development assuming the Monroe Connector/Bypass will be constructed as a toll project in 2013? Will the Monroe Connector/Bypass toll project influence the timing, intensity or pattern of development?

16. What is the potential for new residential, commercial and office development assuming the Monroe Connector/Bypass will be constructed by widening US 74 and adding service roads?

17. What will the potential for new residential, commercial and office development assuming if the Monroe Connector/Bypass project would not be constructed?

18. What type of economic impacts could result from the widening along existing US 74 or building a new location toll road?

19. Are there additional comments that you would like to make concerning the influence of the Monroe Connector/Bypass toll project?

20. The regulatory agencies have asked the study team to consider the removal the US 601 interchange as part of the study. How will the removal of this interchange affect the intensity and distribution of development within the area?

21. Any local controversy associated with the Monroe Connector/Bypass project?
Citizen concerns?

22. What are the current traffic patterns? Any problem areas in terms of congestion?
How might you expect traffic patterns to change as a result of the Monroe Connector/Bypass project?

23. Are there any minority, low income, elderly communities/nursing homes within the study area?

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Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Indirect and Cumulative Effects Assessment

Meeting Date: 3/17/08; 1:30 pm

Meeting Location: Charlotte Mecklenburg Planning,
600 East Fourth Street, 8th Floor
Charlotte

Present:

Garet Johnson	Charlotte Mecklenburg
Anne Lenart-Redmond	HNTB North Carolina PC
Adin McCann	HNTB North Carolina PC
June Farrell	PBSJ Orlando

Anne Redmond began by providing study team introductions and giving brief overview of the project. NCTA is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location alternatives. Although not an alternative to be carried further for detailed study as part of the Draft Environmental Impact Study process, the regulatory agencies have also requested additional information with regards indirect and cumulative effects of the upgrading of US 74 preliminary concepts. The regulatory agencies are also interested in land use changes if the US 601 interchange is not constructed as part of the NCTA project. Citing the Nita's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area (attached). For the upgrading of existing concept, a 1-2 mile buffer was identified. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The Monroe Connector Bypass Schedule:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic- Late 2013

Other items discussed:

Staff Background:

- Garet Johnson has been with the Charlotte Mecklenburg Planning Commission for 14 years and is very familiar with the study area within Charlotte's jurisdiction

Land Use Plans, Environmental Control Regulations, Flood Damage Control Ordinances

- Communities are broken into several districts, with the East District falling within the FLUSA. There is an existing land use plan and an adopted future land use plan for the East district. The East District plan is continually updated with rezonings every month. There are no small area plans underway. There is a rapid transit project planned; station area concepts, locations and types of appropriate land uses are available. Bus Rapid Transit will be revisited for the SE corridor in 5 years.
- Matthews and CPCC have small area plans for mass transit.
- There is an Independence Corridor Study that will extend from Briar Creek (just outside downtown near Ovens Arena) to Sardis Road. Study will include a Concept plan for the Conference Drive area.

Minutes of Charlotte Mecklenburg Meeting 3/17/08 (cont'd)
Monroe Connector/Bypass Indirect and Cumulative Effects Assessment

The kick off for this study is April 2008; and will take potentially two years before the changes from this plan will be adopted and reflected in the future land use plan for the area. The vision for the Independence Boulevard corridor is expected to change and will include transportation improvements related to the neighborhoods adjacent to Independence. The widening of Independence Boulevard contributed to negative economic impacts along the corridor, so the study will focus on revitalization of the area. Although the demographics in the area have changed, retailers haven't changed in response. Transitional setbacks put into effect in 1989 to allow non-freeway type of improvements with right in/right out access and additional acceleration / deceleration lanes along Independence (150ft from the centerline) affected the properties along the corridor. If a property is falls within the transitional setback, there are properties/buildings that can't redevelop under existing county laws.

- Future land use plans will change in this area and the tentative adoption of the new plan will be June 2009.
- 5th street extension (Charlotte Mecklenburg contact: Megan McCoid) plans will provide more detailed information that is not available online.
- Water and sewer is readily available in the study area (East District).
- The environmental transit corridor assessment did not reveal any substantial issues related to natural resource issues or constraints.
- Flood plain ordinances are available online; stormwater services post construction engineering and control ordinances. All towns have already adopted ordinances and practice Best Management Practices (BMP's). Will maintain water and treat it. New regulations adopted in November and are effective in July this year. There are some minor differences between municipalities. Contact Rusty Rozelle from the county for more information.

GIS Data and Mapping

- Jan Whitesell or Nory Quinn can provide mapping and GIS information. City and County share a lot of land use information. Mecklenburg County has just received new aerals.

Annexation practices, Current Development Growth Rates and Locations

- Much of the growth is along I-485 outside the study area. Since Charlotte rate of growth is so high, what Charlotte considers as low growth may be considered high growth elsewhere.
- Spheres of influence are defined by extraterritorial jurisdiction, therefore future annexation areas have already been claimed by surrounding jurisdictions.
- The Sardis area (last transit station location) is currently a slow growth area.

Commercial Development

- Most of the area is built out with some redevelopment, and therefore do not anticipate a huge growth area. The area outside of immediate corridor outside of Independence is mostly residential and is pretty limited in terms of non-residential development. Currently, the Independence corridor the demographics do not support the existing commercial properties. Commercial will likely transition to residential in the future along US 74.
- The east side lacks large employment centers, however there is a low concentration of office developments along the corridor. There are currently a lot of car dealerships in this area, however, a lot of new dealerships are going to Matthews. .
- Some development parcels have been on hold until decision is made about the East District area plan. There is a high vacancy rate and the Old Kmart isn't currently utilized to full capacity.

Minutes of Charlotte Mecklenburg Meeting 3/17/08 (cont'd)
Monroe Connector/Bypass Indirect and Cumulative Effects Assessment

Water and Sewer Coverage / Capacity or Planned Expansions

- Plans are updated whenever a small area plan is completed. Recommend contacting Bob Pearson's replacement at CMUA for further information.

Local Commitment to Growth / Local Development Incentives

- Charlotte is generally pro growth, but not at any expense. Charlotte seeks a balance: high quality development that consistent with future land use plans, center and corridor plans. The Independence Road one of the future growth corridors anticipated to accommodate a considerable amount of future development.
- The elected officials seem to value the land use plans and implement them. Variances are granted mostly through the rezoning process. Plans might not reflect current policy, however the Council decisions run about 90%-95% consistent with adopted plans, supporting staff recommendations. Most inconsistencies with the land use plans are related to small issues. Charlotte Mecklenburg Planning Department has been tracking rezonings for the last 4-5 years.
- There are transit district incentives for development. The Economic Development Office is looking at taxing districts, which is relatively new for the Charlotte area. Recommend contacting Tom Waushauer for further information. There are also incentives in place for saving trees through the sub division ordinances.

Major development constraints

- The McAlpine Creek Greenway and Park Master Plan will be studying topography and other floodplain indicators. Uncertain whether this study falls within out project area. (Contact: Julie Clark)
- There are no current development moratoria in Charlotte.

Stormwater Management

- SWIM buffers in zoning ordinance are more stringent than other local buffers. Buffers vary according to type of stream and possible development. Contact Rusty Rozelle for further information.

Monroe Connector/Bypass Influences on new residential, commercial and office development

- Project influence on growth would be anticipated outside Charlotte's ETJ. Toll project could bring in more regional traffic and make it easier for people to commute further distances and take advantage of Charlotte's future transit plans. Although the project would increase regional accessibility, the new location project does not propose new access and does not anticipate that people using the toll road would make this area a destination. It is anticipated that that there would be about the same pattern and intensity of commercial/residential development in the area. There may be some minimal effect in terms of Charlotte jurisdiction development, possibly opening up a workforce for Mathews or Charlotte at the edge maybe in Sardis Road North Area due to availability of vacant land in this area.
- The potential for new residential , commercial and office development from the upgrade of US 74 utilizing service roads would be approximately the same as those study alternatives on new location and the effects are probably not enough to quantify.
- The bones of the East District plan was done in 1990 and does not reflect development intensity nor transit supported development, therefore is more reflective of a No-Build scenario. Difficult to identify the direct correlation of land use changes for improvements that are several miles away. The Independence Corridor Land Use Plan doe not specifically address the Monroe Connector / Bypass No-Build scenario. The SE District Plan does not show incompatible or increased intensities associated with the No Build.
- Difficult to assess all the transportation components within the Charlotte jurisdiction (HOT lane study, mass transit planning, etc) to determine how it all fits together.
- Ms. Johnson inquired as to how transit will be accommodated in the toll projects across the country. There has been discussion with transit agencies on Western Wake and Triangle Parkway. The Investment Grade Traffic and Revenue study will conduct toll sensitivity runs to determine pricing

Minutes of Charlotte Mecklenburg Meeting 3/17/08 (cont'd)
Monroe Connector/Bypass Indirect and Cumulative Effects Assessment

structure and how discounts might be accommodated. Tolls don't pay for all of the construction of the toll road, so the turnpike authority is still trying to get gap money from the state which hasn't been identified but hoping it comes soon. Pricing structure and discounts impact the gap funding needed. NCTA can provide more information if requested.

- Charlottes proposed bus rapid transit has been criticized for stopping at the road not to have been considered earlier in the regional transit system study phase. It was difficult to engage outlying areas to be interested studying local linkages to the regional transit study. It would be interesting to study how a toll facility could enhance transit.

Minority, low income, elderly communities/nursing homes

- The SE Corridor Study identified a Matthews neighborhood. Recommend accessing the Quality of Life available on line.

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 Anne Redmond (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File



Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Meeting with the City of Monroe

Meeting Date: 3/17/08

Meeting Location: City of Monroe

Present:

Wayne Herron	City of Monroe
Anne Redmond	HNTB – Raleigh
Adin McCann	HNTB – Charlotte
June Farrell	PBS&J

Anne Redmond began by providing study team introductions and giving brief overview of the project. The North Carolina Turnpike Authority (NCTA) is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location detailed study alternatives. Although not an alternative to be carried further for detailed study in the Draft Environmental Impact Study, the regulatory agencies have requested additional information with regards to potential indirect and cumulative effects of the Upgrade Existing US 74 alternative concept. The regulatory agencies are also interested in a discussion of potential indirect and cumulative effects if the US 601 interchange is not constructed as part of the NCTA project. Citing the NCTA's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area (figure provided during meeting). The FLUSA was defined in accordance with the NCDOT/NCDENR Eight-Step Method. For the Upgrade Existing US 74 concept, a 2 mile buffer of existing US 74 was identified as the FLUSA. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The current anticipated Monroe Connector/Bypass Schedule is as follows:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic – Late 2013

Other items discussed:

Staff Background:

- Mr. Herron has been with the City of Monroe for 8 years and is very familiar with the project study area.

Land Use Plans pertaining to annexation, economic development, infrastructure or natural resources:

- Monroe has some neighborhood building districts. However these are not small area plans but do not note those as small area plans because many are changing the rule for specific neighborhoods to protect them from applications to only those neighborhoods.
- All overlay district plans are in the zoning ordinance and listed under Zoning Districts.
- The only other land use plan in the Martin Luther King Jr., which has its own separate land use plan – a corridor that extends from US 74 to US 200, which is currently under construction.

Local GIS information:

- The GIS contact for Monroe is Ms. Jo Anne Manley.

Minutes of Meeting with City of Monroe – 3/17/08 (cont'd)

Monroe Connector/Bypass

- Union County may have some overlap.
- HNTB and PBS&J will coordinate to consolidate GIS data requests.

Growth / Rate of annexations:

- Commercial growth in Monroe is located on existing US 74 and west of US 601 up to Indian Trail.
- Industrial growth is located at the Monroe Airport at Corporate Center.
- Monroe has a very small population growth rate dispersed across the city.
- The City of Monroe has 3 to 4 voluntary annexations per year. The two largest were residential developments 2 years ago on Indian Trail Road which were about 150 acres.
- Annexation is very controlled because water and sewer are very valuable resources.

Commercial market:

- The commercial market was described as “vibrant and growing.”
- Major employment centers are Corporate Center (near airport) and Industrial Park.

Major employer relocations:

- Some industries were closed in 2006.

Major commercial / residential / industrial developments planned:

- All planned development is located at Corporate Center and are airspace oriented.
- Turbo Meck Helicopter Manufacturing plans to employ 500 people.
- Several other developments are coming that have not been announced publicly.
- City Council meeting minutes are available online, but are approximately 3 months behind.

Sewer treatment plants / Existing water and sewer coverage:

- There are no planned expansions; only maintaining existing system.

Local commitment to development:

- The City of Monroe has a priority list and can provide HNTB with a copy that will be adopted within the next 2 months. It is a subjective list but details what priorities are which.
- Everything revolves around the Corporate Center and the growth around it.
- Monroe wants to focus on revitalization before taking on new residential.

Local development incentives:

- Incentive types are equivalent to a certain amount in taxes taken off. It is not called tax abatement, which is illegal in North Carolina, but offers equivalent of that in outright cash based on performance.

Major development constraints / Natural resources:

- The availability of water and sewer.
- Not a great deal of flood plain in the area.
- Regulation stops development

Local runoff management programs / PHASE II Stormwater Management

- PHASE II program has already been adopted and is in place.

Potential development assuming Monroe Connector/Bypass will be built as a toll project in 2013:

- The plan was adopted in 2000 and they have decided to leave at low density residential for almost the entire route except for the intersections.
- City of Monroe is concerned about the Rocky River Road intersection.

Minutes of Meeting with City of Monroe – 3/17/08 (cont'd)
Monroe Connector/Bypass

- US 601 has a neighborhood retail node and the rest are all low density residential around every interchange.
- With the project, the two interchanges will see commercial development.

Potential development assuming Monroe Connector/Bypass will be built by widening US 74 and adding service roads:

- All traffic will be moving through Monroe at a much higher rate.
- By upgrading US 74, Monroe would be destroyed economically from a retail standpoint.
- May disturb beach traffic passing through Monroe.

Potential for new development assuming the Monroe Connector/Bypass would not be constructed:

- Monroe does well in terms of potential develop opportunities, but is hindered by the lack of an Interstate standard facility. Access to Monroe is hindering development opportunities in Monroe.
- Retail development patterns probably would not change much, but construction of the Monroe Connector/Bypass could help the industrial side.

Economic impacts resulting from widening existing US 74 or building new location toll road:

- It will improve access and help to recruit potential employers. However, widening existing US 74 will destroy existing retail along US 74 and therefore change the general quality of life.
- All retail should be focused on US 74 and downtown. Retail should not approach any residential area.

Additional comments concerning influence of Monroe Connector/Bypass toll project:

- Zoning is available online.

Affects to intensity / distribution of development from the removal of US 601 interchange:

- This would negatively impact the revitalization of downtown Monroe.
- US 601 is important to downtown – US 601 cuts right through the heart of downtown Monroe.
- If downtown Monroe is not revitalized, it could be detrimental to Union County as a whole.

Local controversy associated with Monroe Connector/Bypass project:

- Hamilton Place was a major issue (Section A of Bypass). There are no issues with the current new location detailed study alternatives and existing US 74.

Traffic patterns / Expected changes as a result of Monroe Connector/Bypass project:

- Potential traffic pattern changes mostly involve the airport and finding a better way to access it.
- Monroe Road can get very congested at certain times of the day and US 74 can also be bad.
- It is anticipated that the construction of the Monroe Connector/Bypass will remove a large volume of truck traffic from existing US 74.

Minority, low income, elderly communities in study area:

- Minority populations are focused in 2 areas: Winchester & South Downtown. Another area worth mentioning was the area east of Richardson Creek/North of US 74.

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 Anne Redmond (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File

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Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Indirect and Cumulative Effects Assessment

Meeting Date: 3/18/08; 9:00 am

Meeting Location: Indian Trail Planning Department
100 Navaho Trail
Indian Trail

Present:

Shelly DeHart	Indian Trail
Anne Lenart-Redmond	HNTB North Carolina PC
Adin McCann	HNTB North Carolina PC
June Farrell	PBSJ Orlando

Anne Redmond began by providing study team introductions and giving brief overview of the project. NCTA is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location alternatives. Although not an alternative to be carried further for detailed study as part of the Draft Environmental Impact Study process, the regulatory agencies have also requested additional information with regards indirect and cumulative effects of the upgrading of US 74 preliminary concepts. The regulatory agencies are also interested in land use changes if the US 601 interchange is not constructed as part of the NCTA project. Citing the Nita's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area (attached). For the upgrading of existing concept, a 1-2 mile buffer was identified. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The Monroe Connector Bypass Schedule:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic- Late 2013

Other items discussed:

Staff Background

- Shelley DeHart has been the Planning Director for Indian Trail for 4-5 years and knows the area well

Land Use Plans, Environmental Control Regulations, Flood Damage Control Ordinances

- Indian Trail has adopted a town wide Comprehensive Plan which includes 35 square miles of possible future annexation areas of the county. Other available plans include a Downtown Master Plan and Old Hickory Business Park Master Plan. Upcoming studies include the Stinson/Harde Study and US 74 Study. The Town is also getting ready to kick off a Park Master Plan and Town Pedestrian Master Plan.
- Indian Trail is updating the UDO and flood damage prevention ordinances (available on line) The UDO is in draft format. The Town anticipates implementing the UDO in July 2008. Contact: Scott Kaufhold

Minutes of Indian Trail Meeting 3/18/08 (cont'd)

Monroe Connector/Bypass Indirect and Cumulative Effects Assessment

- Phase II Stormwater regulations are in effect. Indian Trail has adopted a post construction ordinance (available on line) requiring buffers in Goose Creek Basin (200 feet from top of bank for perennial streams and 100 feet for intermittent streams.)

GIS Data and Mapping

- Luke Faucett is the Indian Trail GIS contact.

Annexation practices, Current Development Growth Rates and Locations

- Indian Trail is currently accepting voluntary annexations (a couple a year) are considering involuntary annexation in areas in areas of the county which the town already surrounds to fill in the holes.
- Current residential growth is occurring in Centex Homes (Fieldstone Farms), Bonterra, Annondale off Rocky River Road between Railroad Road and the proposed bypass.

Commercial Development

- Commercial development is continuing along US 74. There is existing commercial / industrial land uses in the Old Hickory Industrial Park where Segment 2 is proposed. Commercial develop continues on Wesley Chapel Stouts between Old Monroe and US 74 and near Gold Mine Road. Commercial / non residential development is also occurring along Monroe / Old Charlotte Hwy / 74. There is commercial / non residential development occurring in the area of Chestnut and Potter Road.
- There is a good commercial market in Indian Trail. Employment centers are located primarily in the Old Hickory Industrial Park and along the US 74 Corridor. Largest Employers are Wal-Mart and some businesses in the Old Hickory. Ms. DeHart would need to look up information.
- Ms. DeHart was unaware of any major employer relocations (in or out of Indian Trail).
- There are about 3800 homes in the pipeline in Indian Trail which are approved but not built; however, they are on sewer allocation list. There are also some commercial and light industrial development on list, in the Hickory Industrial Park area and commercial centers located at intersections (i.e. owes). Ms. DeHart can provide a copy of the list and highlight projects/number of units per acre that are within her jurisdiction and in our study area. There is a mixed use Town Center development for commercial and some residential land uses located on 45 acres, which is also on Tier 3 sewer allocation list. Ms. DeHart can provide breakdown of what was approved. Indian Trail anticipates that there is enough commercial and residential development to continue development for the next 5 years.

Water and Sewer Coverage / Capacity or Planned Expansions

- Union County provides water and sewer service to Indian Trail. Ms. DeHart recommended that the study contact Union County for information on planned expansions.
- There are areas within Indian Trail which won't have access to water unless they are on the counties priority list for sewer and water. Those on the list may not be provided water/sewer for 2-5 years. There are areas identified in the comprehensive plan which will not have access to water and sewer due to environmental issues (i.e. Goose Creek /heel splitter mussel). Union County has developed criteria and a set a three tiered priority list for water and sewer (available on their website)

Local Commitment to Growth / Local Development Incentives

- Local Commitment to development is pro-growth non residential. Indian Trail has been in residential development moratoria since Feb 2005. At the time, 6000 homes approved, however, there are 3800 approved residential on the list. Indian Trail is allowing everything to build out. The moratoria didn't apply to non residential development, which is continuing.
- Ms. DeHart is unaware of any development Incentives at this time.

Minutes of Indian Trail Meeting 3/18/08 (cont'd)
Monroe Connector/Bypass Indirect and Cumulative Effects Assessment

Major development constraints

- Development constraints include lack of sewer, floodplain and the presence of environmentally sensitive Goose Creek. Local regulations in Goose Creek are more stringent than the county.

Stormwater Management

- Indian Trail is subject to Phase II regulations and has also adopted the post construction ordinance.
- In the area of Goose Creek, local regulations dictate 200 ft buffers for perennial streams; 100 ft buffers for intermittent. Outside Goose Creek, buffer requirements are 50 ft.

Monroe Connector/Bypass Influences on new residential, commercial and office development

- Monroe New location Alternatives potential for new development: Segment #2 is going to have the greatest impact within Indian Trail's jurisdiction based on the thousand foot corridor that's been identified. Indian Trail provided calculations of the total land area that this alternative will impact to NCTA. Segment 2 will impact a total of 38 acres of Phase 6 of Old Hickory development (light industrial) within the existing park and potentially another 49 acres of light industrial that has already been developed. The Town has is meeting with NCTA later in the week to discuss. Segment 2 also has economic impact that is depicted in letter to NCTA (attached). Old Hickory Business Park is one of the town's top priorities in regards to non-residential development and is the best location for light industrial business park in the jurisdiction. Phase 6 of Old Hickory represents 225 acres (Phase 6) total. It is anticipated that there is another 200 acres planned however there is no approve site plan at this time.
- With respect to the interchange location near the Old Hickory Business Park, Monroe connector as a positive change in land use and is included in the adopted comprehensive plan. Segment 18A is more consistent with the Indian Trail Comprehensive Plan. There are plans for village centers in areas of the anticipated interchange.
- Indian Trail is adamantly opposed to the upgrade of existing alternative. Studied under the previous DEIS as Alternative G, it was estimated that this alternative would cause Indian Trail to lose more than 105 acres of non-residential development. Upgrade of existing would also separate the community with that intense of a highway through Indian Trail. US 74 is already viewed as a barrier (social context) and once the future plan once the bypass on new location is developed, the nature of US 74 would change through planned improvements to give it more a regional commercial downgrade to a highway with landscaped medians. Supporting regional shopping areas along US 74 would strengthen community cohesion within Indian Trail.
- No build: Indian Trail would lose planned village centers long proposed route which would reduce Economic Development benefits of higher density housing associated with the village centers and along the US 74 corridor. Indian Trail would then need to need to update their comprehensive plan because US 74 will be in a traffic gridlock. Old Charlotte Hwy intersections are already operating at a level of service of F on US 74.

Additional Comments:

- The Town is supportive of project overall and planned for it and sees benefits and impacts. Town needs the project to continue growth.
- The Town designed the transportation plan within the comprehensive plan to include bypass in model and did full transportation element with that in place to accommodate the traffic and roadway needs.

Minority, low income, elderly communities/nursing homes

- The Town has some low-income residents located in trailer parks near Wesley chapel Road. There are small pockets of minorities, but no identifiable minority community.

Minutes of Indian Trail Meeting 3/18/08 (cont'd)
Monroe Connector/Bypass Indirect and Cumulative Effects Assessment

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 Anne Redmond (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File

March 11, 2008

Ms. Jennifer Harris, P.E.
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699-1578

Subject: Position on the Monroe By-Pass Segment 2

Dear Ms. Harris,

The Town of Indian Trail desires this opportunity to clearly state our opposition to the proposed segment 2 of the Monroe Connector / Bypass toll road for several reasons including the following:

- 1) The MUMPO Thoroughfare Plan has included a route, closely resembling segment 18 since 2004 or earlier. This route closely resembled alignment D-2 corridor of the Draft 2003 EIS for the proposed Monroe Connector. Based on these MUMPO plans, Indian Trail incorporated this (segment 18) route into its Comprehensive Plan adopted in 2005. We believe Indian Trail has been a good participant in the regional planning process by doing our part in attempted to preserve right-of-way for this path and restrict it from further development through the use of our Comprehensive Plan and other zoning tools.
- 2) As stated in previous letters sent to the NCTA, segment 2 is inconsistent with both the MUMPO Thoroughfare Plan and with Indian Trail's Comprehensive Plan.
- 3) The alignment of proposed segment 2 will have real and potential adverse impact to approximately 38.25 acres of phase 6 of Old Hickory Industrial Park as well as impact to well over 49 acres of older (developed) phases of the park. Phase 6 of Old Hickory has processed an Industrial Park Master Plan and is currently under development projecting over 600,000 square feet of much needed economic development for our Town and for Union County. This economic development area recently received economic development funds from NC DOT to assist in roadway improvements on Indian Trail-Fairview Road valued in the area of an \$800,000 project.

Old Hickory was started in 1999 and consists of 225 acres, approximately 39% of this area lies within the current study area for segment 2. Over \$6.5 million has been invested in park infrastructure to date, including roads and utilities. Buildings in this park have been averaging 12,000 square feet per acre with an average tax value of \$110 per square foot or \$1.32 million per acre of improved value. This provides much needed property tax revenue for Union County. Acre for acre, these businesses have a lower water and sewer impact than residential development and unlike residential, this park has no impact on Union County Public Schools. The businesses locating within Old Hickory average 12 employees per acre. These are much needed jobs for Union County.

In addition to the 225 acres in Old Hickory, there are 200+ adjoining acres that are already zoned with sewer in place. The Phase 6 road in Old Hickory is planned to continue into this additional 200+ acres nearly doubling the size of this business/industrial park. This acreage is also in the study area for segment 2.

Old Hickory and adjoining acreage, zoned and used for clean, highly desirable business/light industrial park provides current and future much needed jobs and property tax revenue for Union County and Indian Trail and should be preserved as such.

4) Although it is never attractive for a new roadway to displace even a single residence, when such a displacement occurs, there are numerous locations and housing choices available within Union County to relocate. However, comparatively speaking, there are very few business/industrial parks within Union County for businesses to relocate that offer the easy access to both I-485 and Highway 74. Union County is highly-likely to loose many current and future jobs if segment 2 is built.

In summary, the Town of Indian Trail strongly opposes segment 2 for reasons stated above.

Respectfully Submitted,

John J. Quinn
Mayor

Cc: Union County Commissioners,
Mayors of Stallings, Unionville, Hemby Bridge, Lake Park, Fairview, Wesley Chapel
Brian Matthews, Manager of Stallings
Robert Cook, Secretary MUMPO
Maurice Euring , Union County Partnership for Progress
Steve DeWitt, NC Turnpike Authority
David Joyner, NC Turnpike Authority
Jim Carpenter, Union County Chamber of Commerce



Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Meeting with Town of Marshville

Meeting Date: 3/18/08

Meeting Location: Town of Marshville

Present:

Carl Webber	Town of Marshville
Anne Redmond	HNTB – Raleigh
Adin McCann	HNTB – Charlotte
June Farrell	PBS&J

Anne Redmond began by providing study team introductions and giving brief overview of the project. The North Carolina Turnpike Authority (NCTA) is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location detailed study alternatives. Although not an alternative to be carried further for detailed study in the Draft Environmental Impact Study, the regulatory agencies have requested additional information with regards to potential indirect and cumulative effects of the Upgrade Existing US 74 alternative concept. The regulatory agencies are also interested in a discussion of potential indirect and cumulative effects if the US 601 interchange is not constructed as part of the NCTA project. Citing the NCTA's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area (figure provided during meeting). The FLUSA was defined in accordance with the NCDOT/NCDENR Eight-Step Method. For the Upgrade Existing US 74 concept, a 2 mile buffer of existing US 74 was identified as the FLUSA. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The current anticipated Monroe Connector/Bypass Schedule is as follows:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic- Late 2013

Other items discussed:

Staff Background:

- Mr. Carl Webber, Marshville Town Administrator, has been in his current position for 8 years. Prior to serving in this role, Mr. Webber was a Town employee for 20 years.

Land Use Plans pertaining to annexation, economic development, infrastructure or natural resources:

- The CTP Plan development contact is Mr. Rodney Bryant with NCDOT.
- Mr. Webber stated that Marshville has a land use plan that was adopted in 2004. The land use plan was developed by the Centralina Council of Governments (COG). The plan included citizen involvement and was limited to incorporated areas. The Town can provide a copy of this plan, as well as the land use map that corresponds to the plan. The land use map is limited to the Town limits.
- Land use administrator services are provided to the Town through a contract with the COG. Mr. Greg Francis is the point of contact at the COG for questions about this.

Minutes with Town of Marshville – 03/18/08 (cont'd)

Monroe Connector/Bypass

- Up until approximately one year ago, the Town of Marshville's land use jurisdiction was limited to the incorporated Town limits. Since this time, the Town has received the authority from the legislature to exercise Extraterritorial Jurisdiction (ETJ). The Town has implemented this authority and now has more land upon which they regulate the zoning.
- A land use plan has not been redone that incorporates the ETJ areas. However, Town can share map and can provide perspective and insight as to the potential new development patterns might be expected from the zoning.
- The zoning map does not cover the entire planning boundary for the Town of Marshville because of the ETJ. Mr. Webber can provide a hard copy of the zoning map. Ms. Tricia Byrd at Centralina COG has the map in electronic format.
- The ETJ brought 500 parcels into the Town of Marshville, which caused zoning to be less dense.
- Marshville plans to participate in a joint economic development study with Wingate. Mr. Maurice Ewing is the main point of contact for the study; however, a Request for Proposals has not yet been issued for this study.

Local GIS information:

- The GIS contact is Ms. Tricia Byrd at Centralina COG.

Growth / Rate of annexations:

- Mr. Webber stated that the recent trend of growth and development in western Union County will not look the same in 6 months. Additionally, areas in eastern Union County have not seen the same recent trend in growth rates. Town of Marshville has seen tax base growth rate of approximately 1 to 2% per year. In 2006, the net change in delivery points for the 12-month period, as reported by the postmaster for the entire 28103 zip code, was 33 new delivery points. This zip code includes all of incorporated Town limits, as well as a large portion of the unincorporated area.
- The last time a city initiated annexation was approximately 1991. Marshville has not met the 61% development requirement to prompt annexation due to a lack of development.
- There has been voluntary annexation (average of 1 per year since 2003). In 2003, approximately 120 acres in southwest portion of Town was a voluntary annexation. Parcel was planned for wastewater reclamation plant, but plans have since evaporated. Land is undeveloped and is zoned 1 acre residential. All other annexations have been one, two, or three parcels at a time and were contiguous with Town limits. The driving force behind annexation requests is ability to access Marshville sewer.
- Sewer is a major concern in eastern Union County. Town has policy of not allowing parcels outside of Town limits to connect to sewer system.
- Town is approximately 1,357 acres in land area. This likely does not include the last few voluntary satellite annexations.
- In 2004, the increase in tax base from new construction within the Town limits was approximately \$290,000.
- Town Council has changed zoning to encourage less dense types of development. In part, this is a result of the Town's desire for infrastructure to keep pace with development. However, this change was also intended to protect the more rural character of Marshville and its surrounding community.

Commercial market:

- The commercial ratio and tax base is pretty good (about 60% residential and 40% non-residential).
- There is a chicken plant in Marshville that employs 300 people, as well as a plastics plant that employs 100 people.
- CVS Pharmacy was moved to a new location and will be a joint downtown/ US 74 development. This might bring new life into downtown area.
- Three timber mills are located around Marshville which, combined, employ approximately 500 people.

Major employer relocations:

- None know.

Minutes with Town of Marshville – 03/18/08 (cont'd)

Monroe Connector/Bypass

- Marshville lost about 20,000 square feet in retail over the past 2 years. These buildings are not empty, but are occupied by uses that do not generate as much revenue.

Major commercial / residential / industrial developments planned:

- Duke Energy has an interest in economic development opportunities and an industrial site in Marshville has been identified on Duke Energy's website. A site assessment was conducted by Duke a couple years ago. Lack of connectivity between site and Interstate facility was a noted weakness of assessment.

Sewer treatment plants / Existing water and sewer coverage:

- Marshville does not operate a sewer or water treatment plant.
- All water is bought from Anson County.
- Sewer is sent to Union and Anson Counties. The wastewater pipeline to Anson County was replaced in 2006; this was the first change in wastewater treatment capacity in Marshville since 1978.
- The contracted capacity from Anson County is approximately 200,000 GPD.
- It is estimated that approximately \$8-\$20 million is needed to fund any type of considerable sewer capacity increase.

Local commitment to development:

- Through Mr. Webber's tenure in Marshville, the Mayor(s) and Council members have consistently displayed a desire to protect the more rural character and integrity of Marshville.
- In general, actions taken by Town Council on zoning petitions generally indicates their willingness to adhere to zoning policies. However, there have very few, if any, requests to deviate from established policies.

Major development constraints / Natural resources:

- The Yadkin Valley remapping identified some flood plains in Marshville, but there were no notable overall changes to deter growth.
- Existing rail corridor that parallels US 74 is somewhat of a constraint, but could also be considered beneficial to some types of development.
- Marshville has the two lowest performing high schools, in terms of SAT scores, in Union County (Forest Hills and Monroe).
- Other constraints include education, sanitary sewer capacity, and transportation (i.e., total distance from downtown Charlotte to Marshville). The average time to reach downtown Charlotte from Marshville is one hour and fifteen minutes; however, the trip can take up to two hours. The Town believes that congested roadway and associated regional air quality issues could be considered a disincentive for potential industrial development prospects.
- The City Council supports the Monroe Connector/Bypass has not opposed the toll.

Local riparian buffer regulations / Local land use controls:

- There is not anything in the local ordinances in term of stream buffers.
- Marshville plans to adopt whatever Union County adopts.

Local runoff management programs / PHASE II Stormwater Management

- None.

Development moratoria:

- Presently, there are no development moratoria but there has been in the past to avoid violating contract capacity.
- The 2002-2006 subdivision moratoria to not violate contract capacity.

Potential development assuming Monroe Connector/Bypass will be built as a toll project in 2013:

Minutes with Town of Marshville – 03/18/08 (cont'd)

Monroe Connector/Bypass

- Building the Monroe Connector/Bypass as a toll facility would help to eliminate a barrier to commercial/residential development.
- The RPO approved development of a feasibility study to look at US 74 east of planned Monroe Connector/Bypass.

Potential development assuming Monroe Connector/Bypass will be built by widening US 74 and adding service roads:

- Traffic has found the NC 218 shortcut; NC 218 was not designed to handle increased volume and it is experiencing pavement issues.

Potential for new development assuming the Monroe Connector/Bypass would not be constructed:

- There would be no direct impact on Marshville. However, the use of NC 218 as a bypass facility would continue. NC 218 was not designed to handle this volume and type of traffic. Town thinks continued use of NC 218 would have an effect on them.
- There would be a limited potential for development.
- Taking the Monroe Connector/Bypass out of the plans leaves Marshville with development trends of the past, slow to moderate growth.

Economic impacts resulting from widening existing US 74 or building new location toll road:

- No direct impacts anticipated.
- Without the Monroe Bypass, the transportation constraint to potential development still exists.

Additional comments concerning influence of Monroe Connector/Bypass toll project:

- Mr. Webber expressed concern regarding how the project is addressing endangered species. He also asked about traffic forecasting and the effects on truck traffic.
- HNTB explained that we are currently in the process of toll traffic forecasting and it is under review. Mr. Carl Gibalaro of PBS&J will follow up with truck traffic information when available.

Local controversy associated with Monroe Connector/Bypass project:

- There has not been any recent controversy. The council has been supportive enough of the need of a facility and is willing to swallow the toll if that is what is necessary to make the project happen.
- The Monroe Bypass is a great potential benefit for Anson County ED.

Traffic patterns / Expected changes as a result of Monroe Connector/Bypass project:

- Currently, there are 20,000 vehicles per day on US 74 in front of Town Hall. Approximately 9% of this daily traffic volume is truck traffic.
- Town anticipates that time savings resulting from Monroe Bypass/Connector may increase traffic in Marshville area.
- US 74 is the only road in CTP that will exceed the design year capacity.

Minority, low income, elderly communities in study area:

- There is a large African American population in Marshville. In 2000 US Census, there were 125 whites than non-whites.
- The chicken plant was, at one time, almost exclusively minority. Today, the chicken plant employees about 500 people. Most the chicken plant workforce is Hispanic.

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 Anne Redmond (HNTB) within five working days after receipt of these minutes.

Minutes with Town of Marshville – 03/18/08 (cont'd)
Monroe Connector/Bypass

cc: Attendees
Project File

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Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Meeting with the Town of Wingate

Meeting Date: 3/18/08

Meeting Location: Town of Wingate

Present:

Dryw Blanchard	Town of Wingate
Anne Redmond	HNTB – Raleigh
Adin McCann	HNTB – Charlotte
June Farrell	PBS&J

Anne Redmond began by providing study team introductions and giving brief overview of the project. The North Carolina Turnpike Authority (NCTA) is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location detailed study alternatives. Although not an alternative to be carried further for detailed study in the Draft Environmental Impact Study, the regulatory agencies have requested additional information with regards to potential indirect and cumulative effects of the Upgrade Existing alternative concept. The regulatory agencies are also interested in a discussion of potential indirect and cumulative effects if the US 601 interchange is not constructed as part of the NCTA project. Citing the NCTA's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area (figure provided during meeting). The FLUSA was defined in accordance with the NCDOT/NCDENR Eight-Step Method. For the Upgrade Existing US 74 concept, a 2 mile buffer of existing US 74 was identified as the FLUSA. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The current anticipated Monroe Connector/Bypass Schedule is as follows:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic – Late 2013

Other items discussed:

- Mr. Blanchard questioned if there is one segment that lies within the original right-of-way that was laid out from the previous project. Anne Redmond explained that both segments were part of the original study, but the one that went to right-of-way acquisition was 34, the northern segment. Both segments were revisited from the previous study. Anne also mentioned that FHWA wanted to show two corridors.

Staff Background:

- Mr. Blanchard has been with the Town of Wingate for 9 years and is very familiar with Wingate.

Land Use Plans / Updates to current plans:

- Mr. Blanchard noted that there are currently no local land use plans in place for the Town of Wingate.
- Mr. Blanchard expects to do a comprehensive plan within the next 18 months.
- Wingate has had minimal growth. Mr. Blanchard mentioned that growth has been relatively good since the 2000 census which results from two subdivisions. The two subdivisions contributing to Wingate's growth

Minutes of Town of Wingate Meeting – 3/18/08 (cont'd)
Monroe Connector/Bypass

are Glen Cross in the northeast area and Noble Oaks in the southwest area. When complete, Glen Cross will consist of 201 units and Noble Oaks will house 177 units.

- Mr. Blanchard believes these two new subdivisions anticipated the construction of the Monroe Connector/Bypass.

Local GIS information:

- The GIS contact is Union County as well as the Centralina COG.

Growth / Rate of annexations:

- Wingate cannot do much annexation due to its size and the large tracts of land surrounding it.
- Wingate may annex small areas just to fill in gaps, but there is not any large property eligible for annexation in Wingate.
- Everything in Wingate has sewer except for Oakley Lane, which consists of approximately 20 houses.
- The Town of Wingate purchases their water mostly from Anson County and maintains their own water distribution and collection systems.
- Wingate has a contract with the county to transport wastewater to Monroe for treatment.
- Wingate has sewer transmission capacity that runs from Marshville north of Wingate to the City of Monroe's Plant, which is old and undersized. Municipalities are working to update their system to maintain capacity.

Wingate commercial market / Employment centers:

- Wingate University employees several hundred people, and has an enrollment of approximately 1500 to 1800 students.

Major employer relocations:

- Wingate University's School of Pharmacy plans to move to a satellite campus in Matthews due to transportation needs for internships in Charlotte. Constructing the Monroe Connector/Bypass would probably allow the School of Pharmacy to remain at its current location.

Major commercial / residential / industrial developments planned:

- Mr. Blanchard stated that there are currently no new commercial developments planned in Wingate.

Sewer treatment plants / Existing water and sewer coverage:

- There are no sewer extensions planned for Wingate, but a rehabilitation design of the existing system is underway.
- The eastern part of the county is limited in terms of transmission (pumping / piping). The western part of Union County has more treatment capacity issues.

Local commitment to development:

- A new Mayor took office in December along with two new Town Council members.
- The newly elected local government officials seem very interested in managed/smart growth.
- The local government never had variance applications because they do not have growth pressure.

Local development incentives:

- There are no local development incentives; they work with Partnership Progress.

Major development constraints / Natural resources:

- Sewer is the only development constraint in the area.
- Water is not an issue and there are no drought restrictions.

Minutes of Town of Wingate Meeting – 3/18/08 (cont'd)
Monroe Connector/Bypass

Local riparian buffer regulations / Local land use controls:

- There are no kinds of buffer restraints. Wingate falls under the county buffers.

Local runoff management programs / PHASE II Stormwater Management

- There is no local stormwater runoff.

Development moratoria:

- There are currently no development moratoria. New public sewer lines cannot be built until the transmission problems are solved.

Potential development assuming Monroe Connector/Bypass will be built as a toll project in 2013:

- Mr. Blanchard assumes that the construction of the Monroe Connector/Bypass could encourage growth in Wingate. He feels as if it would make Wingate attractive as a bedroom community to Charlotte.
- There is no current vision for attracting new commercial development.
- The Town of Wingate is currently working with a development in Marshville to develop a Comprehensive Economic Development Plan.

Potential development assuming Monroe Connector/Bypass will be built by widening US 74 and adding service roads:

- Any opportunity for commercial development would be “wiped out.” The present area available is only a thin strip, making it barely developable.
- The north side of US 74 has already been lost due to the proximity of the railroad.
- The loss of businesses would wipe out exiting tax base.
- Wingate University is tax exempt.
- 40% of Wingate is tax exempt.

Potential for new development assuming the Monroe Connector/Bypass would not be constructed:

- Mr. Blanchard feels that there would not be any development in the Town of Wingate if the Monroe Bypass is not constructed and the town would continue to flat or lose population.
- Commercial growth within Wingate has been non-existent for decades due to its close proximity to Monroe.

Economic impacts resulting from widening existing US 74 or building new location toll road:

- There is no existing quantitative data; PBS&J will look at in the CIA.

Additional comments concerning influence of Monroe Connector/Bypass toll project:

- Mr. Blanchard commented that the Town of Wingate strongly supports the Monroe Connector/Bypass. He feels that it would bring support to Wingate University, as well as attract residential and commercial development.
- Wingate University has no other plans for expansion. It currently has masters programs, MBA, and physician’s assistant program. Chuck Taylor is the Vice-President of Business Affairs at Wingate University.

Affects to intensity / distribution of development from the removal of US 601 interchange:

- The Town feels that the elimination of the US 601 interchange does not make sense from a transportation perspective.

Local controversy associated with Monroe Connector/Bypass project:

- The Town is unaware of any controversy associated with the Monroe Connector/Bypass.
- The concept of tolling the Monroe Connector/Bypass may be questionable in terms of local support.

Minutes of Town of Wingate Meeting – 3/18/08 (cont'd)
Monroe Connector/Bypass

Traffic patterns / Expected changes as a result of Monroe Connector/Bypass project:

- There are currently approximately 25,000 vehicles per day on US 74 at the main intersection in Wingate.
- Wingate may lose some of the summer travelers going to the coast.
- The trucking industry may choose to utilize the toll road for time savings purposes.
- Mr. Blanchard assumes that if Wingate lost traffic or businesses then it would be replaced with more businesses that depend on the local economy. He would like to see a different mix of commercial development.

Minority, low income, elderly communities in study area:

- Highland Park is near the southeast corner of Wingate and is predominantly African American.
- There is an elderly apartment complex on S. Main Street near the south edge of the town. It serves as subsidized housing for primarily elderly people. Many of these people walk to Food Lion during the day to get groceries.

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 Anne Redmond (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File



Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Indirect and Cumulative Effects Assessment

Meeting Date: 4/1/08, 10:00 am

Meeting Location: Centralina COG,
1300 Baxter Street, Suite 450
Charlotte

Present:

Bill Duston	Director Centralina COG (portion of meeting)
Jason Wagner	Fairview Land Use Administrator
Nadine Bennett	Unionville Land Use Administrator
Anne Lenart-Redmond	HNTB North Carolina PC
Adin McCann	HNTB North Carolina PC
June Farrell	PBSJ Orlando

Anne Redmond began by providing study team introductions and giving brief overview of the project. NCTA is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location alternatives. Although not an alternative to be carried further for detailed study as part of the Draft Environmental Impact Study process, the regulatory agencies have also requested additional information with regards indirect and cumulative effects of the upgrading of US 74 preliminary concepts. The regulatory agencies are also interested in land use changes if the US 601 interchange is not constructed as part of the NCTA project. Citing the Nita's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area (attached). For the upgrading of existing concept, a 1-2 mile buffer was identified. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The Monroe Connector Bypass Schedule:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic- Late 2013

Other items discussed:

Staff Background:

- Bill Duston has been with the Centralina COG for 23 yrs and has a good overall perspective
- Nadine Bennett has been with the COG since 2003, and has a limited knowledge of Unionville (2 months)
- Jason Wagner has been with the COG since 1996 and associated with Fairview since 2005

Land Use Plans, Environmental Control Regulations, Flood Damage Control Ordinances

- Unionville and Fairview looking at Union County Adequate Public Facilities Ordinances (APFO), which was passed last month
- Development Buffers: 20' along streams – setbacks from streams (same as Union County)
- Plan, ordinance, maps Adequate Public Facilities Ordinances at County level
- Fairview just adopted a land use, which is available on-line

Minutes of Centrolina GOG Meeting 4/1/08 (cont'd)
Monroe Connector/Bypass Indirect and Cumulative Effects Assessment

- Utility capacity is an issue for development. Fairview requires Consumption Use Permits (CUP's) for certain developments; Unionville is more flexible. COG thinks standards need to be updated to enforce CUP process.
- The Savannah Lilliput mussel is an up an coming T&E species which can be found in forks of Crooked Creek (a study is available by the Catena Group)
- Goose Creek headwaters are located in Mint Hill
- Minimum 1 acre lots – following Union county

GIS Data

- GIS contact is Trisha Byrd (704) 348-2728

Annexation practices, Current Development Growth Rates and Locations

- Unionville is considered ground zero for Monroe Connector/Bypass influence. Fairview is the next ground zero.
- Fairview growth limited due to utilities; Unionville is currently experiencing tremendous pressure for development, however soils may not perc.
- Mecklenburg County Municipalities have annexation agreements: Fairview and Mint Hill, Weddington and Marvin, Wesley Chapel and Monroe, Mineral Springs and Monroe. Unionville incorporated to protect from Monroe annexation. Fairview declined to annex Monroe. Indian Trail is most likely to fill in gaps with annexation.
- Senate Bill 426 – Union County twists on annexation – satellite
- Rezoning for grocery store turned down multiple times in US 601 interchange area.
- 164 lot / 300 acre development in Fairview – use of approx. 40 acres of land septic
- Wingate/Marshville- focused on ETJ for control

Commercial Development

- Fairview: Section 6 agricultural Ordinance exemption granted (over 10 acres). Larger employers include a large guardrail company, trailer building company, and a trucking and hauling business.
- Not much commercial development in Unionville
- Rezoning for grocery store turned down multiple times in US 601 interchange area
- There are three county treatment plants with and interbasin transfer: recommend contacting Christy Putnam for more information.
- There are no major employer relocations (either in or out of the area)
- There are no major commercial / industrial developments planned in Unionville and Fairview.
- East of Richardson Creek in Union County may be sleeping giant – access by Bypass/Connector may prompt development for starter homes since industry and services currently exist in the area.

Water and Sewer Coverage / Capacity or Planned Expansions

- Contact CMUD for information
- No moratorium on subdivisions
- Low density on-site handling than Union County would not allow

Local Commitment to Growth

- Unionville – status quo.
- Fairview- status quo, but thoughtful consideration of future growth but reserving the rural character of the area.
- There are no development incentives in place for Fairview or Unionville

Minutes of Centrolina GOG Meeting 4/1/08 (cont'd)
Monroe Connector/Bypass Indirect and Cumulative Effects Assessment

Major development constraints

- Soils may be an issue in certain areas in Unionville
- T&E species – Heel splitter and Savannah Lilliput mussels
- Septic / lack of utilities
- Accessibility to community
- Floodplains to a lesser extent – Unionville has adopted a model ordinance; Fairview moving towards adoption. New flood maps go into effecting October (public hearing required).
- Buffer regulations: both Unionville and Fairview follows County's 20' setback from streams

Storm water Management

- Enforcement is at regulatory (DWQ) levels
- No local agreement in place with County
- A Phase I assessment has been conducted for Goose and Crooked Creek – 6 to 9 months characterizing watershed. The Catena Group identified intermittent and perennial stream designations in order to obtain a MOU between NCDOT, environmental agencies and locals. COG can provide a copy of that study if needed.
- Floodplains area a big issue to property owners

Monroe Connector/Bypass Influences on new residential, commercial and office development

- Unionville will experience development pressure if constructed on new location
- If upgrade existing is implemented, there are many neighborhoods that are a stone's throw away. The COG stated that there would be devastating impacts to 499 businesses.
- There would be a big difference in development potential if the US 601 interchange is not constructed as part of the project. Unionville is ground zero for the effects of the Monroe Connector/ Bypass.
- NC 218 truck traffic has a big effect on Fairview. Providing an interchange at US 601 may divert heavy truck traffic up US 601.
- Tolling may be an issue with Unionville and Fairhaven. Ms. Bennett and Mr. Wagner recommend that NCTA contact planning board and provide an update.

Minority, low income, elderly communities/nursing homes

- Not aware of any in Unionville
- "Dodgetown" – Prevalent African American Community in Union County off Mill Grove Road – Wright Road/IT – Fairview Road. There has been a past water quality in wells in this area – arsenic found in wells; naturally occurring; could be related to post farming activities.

Willingness for local planners to change local land use plans as a result of the Monroe Connector/Bypass ICE

- Probably willing, but may not have resources. Existing plans are bare minimum.

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 Anne Redmond (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File

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Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Meeting with the Town of Matthews

Meeting Date: 4/02/08

Meeting Location: Town of Matthews

Present:

Kathi Ingrish	Town of Matthews - Planner
Anne Redmond	HNTB – Raleigh
Adin McCann	HNTB – Charlotte
June Farrell	PBS&J – Orlando

Anne Redmond began by providing study team introductions and giving brief overview of the project. The North Carolina Turnpike Authority (NCTA) is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location detailed study alternatives. Although not an alternative to be carried further for detailed study in the Draft Environmental Impact Study, the regulatory agencies have requested additional information with regards to potential indirect and cumulative effects of the Upgrade Existing US 74 alternative concept. The regulatory agencies are also interested in a discussion of potential indirect and cumulative effects if the US 601 interchange is not constructed as part of the NCTA project. Citing the NCTA's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond began by providing study team introductions and giving brief overview of the project. The North Carolina Turnpike Authority (NCTA) is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location detailed study alternatives. Although not an alternative to be carried further for detailed study in the Draft Environmental Impact Study, the regulatory agencies have requested additional information with regards to potential indirect and cumulative effects of the Upgrade Existing US 74 alternative concept. The regulatory agencies are also interested in a discussion of potential indirect and cumulative effects if the US 601 interchange is not constructed as part of the NCTA project. Citing the NCTA's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area (figure provided during meeting). The FLUSA was defined in accordance with the NCDOT/NCDENR Eight-Step Method. For the Upgrade Existing US 74 concept, a 2 mile buffer of existing US 74 was identified as the FLUSA. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The current anticipated Monroe Connector/Bypass Schedule is as follows:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic – Late 2013

Other items discussed:

Staff Background:

- Ms. Kathi Ingrish has been with the Town of Matthews for 19 years and is very familiar with the study area.

Minutes of Meeting with Town of Matthews – 04/02/08 (cont'd)
Monroe Connector/Bypass

Land Use Plans pertaining to annexation, economic development, infrastructure or natural resources:

- The Town of Matthews is starting to re-write ordinances and zoning regulations.
- The Unified Development Ordinance (UDO) code with development related ordinances is expected to be complete in late 2009.
- Matthews has adopted a new Post-Construction Ordinance.
- New landscape provisions have been added, including a tree canopy and open space provisions.
- An economic development study has been completed and is currently available online.
- A Land Use Plan was adopted in 2002, and the Town of Matthews is hoping to finish updating it by the end of the calendar year.

Local GIS information:

- The GIS contact for the Town of Matthews is Mr. Rick McCallister (rmcallister@matthewsnc.com).

Growth / Rate of annexations:

- Matthews is currently looking inward for development.
- Town Hall is considered a catalyst project.
- Matthews is a small town atmosphere, having a higher density than “suburbia.”
- Matthews has 4 transit stations in town. The CPCC Levine Campus is expanding quickly and is in need of roads.
- Hendrick dealerships are looking to relocate facilities in Union County.

Commercial market:

- Matthews has office type uses east of I-485 to the county line.
- Matthews is viewed as a high-end community. It has had conditional zoning since 1981.
- Matthews Plantation Estates consists of approximately 400 apartments zoned for assisted and skilled nursing living.
- Matthews typically focuses on 2 to 3 units per acre for residential areas.

Major employer relocations:

- Downtown Matthews is a commercial center as well.
- Matthews is interested in the office/condo market. Matthews is not historically known for office space development, so it is still growing.
- New commercial development is moving to Sam Newell Road, north of NC 51.

Major commercial / residential / industrial developments planned:

- ConBraco and Construction Brass Corporation are consolidation and reducing operations in Matthews.

Sewer treatment plants / Existing water and sewer coverage:

- Sewer and water service is provided to Matthews by Charlotte-Mecklenburg Utilities (CMUD).
- Most of the water and sewer systems have been turned over to CMUD.
- I-485 is approximately the basin divide/fall line. Outside of I-485 lacks municipal utility services.

Local commitment to development:

- The political representatives are trying to change the community attitude to very pro family neighborhood. They are aware that they need to get information out to the community.

Major development constraints / Natural resources:

- Major development constraints include utilities, watershed and a lack of adequate transportation infrastructure.
- Roads are important, but attention also needs to be focused on bike/pedestrian facilities.

Minutes of Meeting with Town of Matthews – 04/02/08 (cont'd)
Monroe Connector/Bypass

Local riparian buffer regulations / Local land use controls:

- All towns in Mecklenburg County adopted the Post-Construction ordinance.
- Surface Water Improvement and Management (SWIM) buffers were utilized prior to the Post-Construction ordinance. The SWIM buffers ordinances were updated with the adoption of the Post-Construction ordinance.

Local runoff management programs / PHASE II Stormwater Management

- Matthews does not allow disturbance and development in floodplain or flood fringe.
- Matthews' local floodplain ordinance can be found online.
- Mecklenburg County is redoing all floodplain maps to get on North Carolina grid coordinate system. The Town of Matthews will have to re-adopt the floodplain maps when completed.

Development moratoria:

- The Town plans to have a consultant re-write the zoning section of the UDO. This work has not yet been initiated.
- Ms. Ingrish would not be surprised if the selected consultant recommended a moratorium.

Potential development assuming Monroe Connector/Bypass will be built as a toll project in 2013:

- I-485 and US 74 are Matthews' major focus for future tax base. Access, as well as loss of tax base, is a key concern.
- The design of the I-485 and US 74 interchange currently experiences operational issues during inclement weather.
- Matthews could lose the opportunity to develop Mt. Harmon Church Road and Stearns Road area.
- CPCC transit station will be left with less land if car dealerships or corporate offices shift away from US 74.

Potential development assuming Monroe Connector/Bypass will be built by widening US 74 and adding service roads:

- Potential development would be mostly within Union County.

Potential for new development assuming the Monroe Connector/Bypass would not be constructed:

- McKee Road / MIT Road would allow for redevelopment opportunities within Stallings.

Additional comments concerning influence of Monroe Connector/Bypass toll project:

- The Town of Matthews is opposed to the connection to I-485 at Idlewild Road or at the mid-point between Idlewild Road and US 74.
- Matthews is coordinating with Stallings on support for the Monroe Connector/Bypass project.

Local controversy associated with Monroe Connector/Bypass project:

- Ms. Ingrish does not know of any local controversy associated with the Monroe Connector/Bypass project.
- The church recently built in the southeast quadrant of the interchange hosted meetings.

Traffic patterns / Expected changes as a result of Monroe Connector/Bypass project:

- Potential changes depend on the decisions made in the environmental study.

Minority, low income, elderly communities in study area:

- The Crestdale neighborhood contains an intact low income African American community. This area is experiencing development pressure. Habitat for Humanity is working on its third subdivision in the Crestdale neighborhood. New Habitat for Humanity neighborhoods have brought a southeast Asian demographic to this area as well.

Minutes of Meeting with Town of Matthews – 04/02/08 (cont'd)
Monroe Connector/Bypass

- Mr. Harvey Boyd has been the designated spokesperson for the Crestdale community over the last several years. The residents of this area are growing older and appear to be more interested in selling their family land.
- There are no known Latino concentrations in Matthews.
- Land in area of I-485/East John Street is about to come under rezoning action. This land is adjacent to vacant Crestdale land. Crestdale land owners are trying to coordinate with private developers since road into Sportsplex family entertainment center would travel through Crestdale land. Small Area Plan will hopefully be approved by December that will include a private development adjacent to County Sportsplex. The plans include 12 fields for football, rugby, and soccer.

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 Anne Redmond (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File



Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Meeting with the Town of Mint Hill

Meeting Date: 4/2/08

Meeting Location: Town of Mint Hill

Present:

Karen Dunn	Town of Mint Hill
Anne Redmond	HNTB – Raleigh
Adin McCann	HNTB – Charlotte
June Farrell	PBS&J – Orlando
Jenny Noonkester	PBS&J – Charlotte

Anne Redmond began by providing study team introductions and giving brief overview of the project. The North Carolina Turnpike Authority (NCTA) is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location detailed study alternatives. Although not an alternative to be carried further for detailed study in the Draft Environmental Impact Study, the regulatory agencies have requested additional information with regards to potential indirect and cumulative effects of the Upgrade Existing US 74 alternative concept. The regulatory agencies are also interested in a discussion of potential indirect and cumulative effects if the US 601 interchange is not constructed as part of the NCTA project. Citing the NCTA's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area (figure provided during meeting). The FLUSA was defined in accordance with the NCDOT/NCDENR Eight-Step Method. For the Upgrade Existing US 74 concept, a 2 mile buffer of existing US 74 was identified as the FLUSA. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The current anticipated Monroe Connector/Bypass Schedule is as follows:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic – Late 2013

Staff Background:

- Karen Dunn has been with the Town of Mint Hill for approximately one year. Prior to that, Ms. Dunn spent two years with the Village of Marvin. Ms Dunn also spent portions of approximately 20 years with the Centralina Council of Governments.

Land Use Plans / Updates to current plans:

- The Town of Mint Hill Land Use Plan was last published in 2000. The 2000 land use plan was completed by Centralina Council of Governments. The Town will soon advertise for a consulting firm to develop a new land use plan. It is anticipated that the development of the new plan will take approximately 1.5 years. Town does not have electronic copy of current Land Use Plan and corresponding maps. This information may be available on the Town's website. The Town is working to have the land use plan maps digitized, so they will soon be available in electronic format. The Town can provide a hard copy of the land use map.

Minutes of Mint Hill Meeting - 4/2/08 (cont'd)
Monroe Connector/Bypass

- Town in process of developing Unified Development Ordinance (UDO). Anticipate adoption in July 2008 with ordinance becoming effective in October 2008. UDO will consolidate zoning, subdivision, and property maintenance codes. UDO will make conditional zoning the norm instead of conditional use districts for legislative rezonings.
- The 2000 land use plan was completed prior to the construction of I-485 and the associated interchanges within the Town's planning area. The intent of the Town is to keep all but one of the interchanges residential in terms of land use. Ms. Dunn stated this intent will be carried over into the new land use plan.
- No current greenway plan.
- Town has applied for pedestrian plan grant from NCDOT. Anticipate decision on funding in June 2008.
- Land use map, current zoning map, link to draft Bridges of Mint Hill site plan can be found at www.minthill.com.

Local GIS information:

- The GIS contact for Town of Mint Hill is Ms. Dana Goins.

Growth / Rate of annexations:

- Town not active on annexation front. Town will annex when it is voluntary. Town not currently looking at any areas for involuntary annexation. Annexation into Town provides police protection, trash pick-up, and road maintenance.
- Town has annexation agreement with Stallings and Town of Fairview. Town has annexed across Union County line.
- Small communities and City of Charlotte have sphere of influence agreements.

Mint Hill commercial market / Employment centers:

- In the area of Lawyers Road/I-485, the Town is getting ready to develop a 1.8 million square foot mall (Bridges of Mint Hill). The developer is General Growth Partners/Childress Klein. A small area study will likely be done as part of the associated development process. Several roadway improvements are being coordinated with NCDOT and are at approximately 90% in terms of design. Groundbreaking for this development is tentatively scheduled for mid-June 2008. The planned development is within the Goose Creek watershed and is anticipated to have zero impact on Goose Creek and all tributaries within site.
- There may be an indirect and cumulative effects study related to the Bridges of Mint Hill mall development. This work may have been developed by EcoScience Corporation. PBS&J indicated that they would follow-up on this information. The Town indicated that LandDesign is completing the site civil engineering and Kimley-Horn is completing the design of the roadway improvements. Town also has traffic impact study from project.
- In the area of Lawyers Road/NC 51, there is approximately 54 acres of General Business / Downtown Overlay B. This area is being developed by American Asset Corporation (AAC). This requires specific architectural designs and pedestrian amenities. The Town is still reviewing this mixed-use development that will have some attached single-family residential. The Town has approved part of the site plan and can provide a PDF version. The site plan may change slightly during the remainder of the review process.
- Clear Creek Business Park – Conditional use district. Everything within this business park must come to Planning Board for issuance conditional use permit. Since approval of park, a medical center (60,000 sq ft. medical office park) has been approved in the area Truelight Church Road and NC 51. Town can provide copy of plan for Clear Creek Business Park.
- Idlewild Road/NC 51 – Approx. 30,000 sq ft office retail has been approved. Several road improvements will be needed. Towns of Matthews and Mint Hill have petitioned for STP-DA funds from MPO for roadway and intersection improvements in addition to what developer will construct as part of project. Town does not anticipate funding for transportation improvements until 2014 or 2015.

Minutes of Mint Hill Meeting - 4/2/08 (cont'd)
Monroe Connector/Bypass

- Town wants mall to grow and succeed, but not at expense of downtown. Hope to draw people as a regional destination.

Major employer relocations:

- Recently approved 125 bed nursing care facility at Wilson Grove/Wilson-Mint Hill.
- Approval for assisted living off of Idlewild Road occurred prior to Ms. Dunn's arrival at Town. She believes it is approximately 50 beds.

Major commercial / residential / industrial developments planned:

- Town just approved (December 2007) public high school in the area of Clear Creek Business Park. High school scheduled for opening in 2010. Enrollment of high school is projected at approximately 2,500 students. Main entrance from Albemarle Road. Connection to NC 51 through Clear Creek Business Park. Town can provide copy of plan for high school.
- Mint Hill Board of Commissioners has developers' workshop that meets quarterly. This allows developers/private property owners to informally discuss ideas with Commissioners. All discussions are non-binding on both sides. Allows developers to get informal feedback without spending money on outside services such as engineering design.
- New charter high school will be constructed next to elementary school on Lawyers Road. Charter school will technically draw students from all over North Carolina.
- Equestrian subdivision (Cheval) has home sites for approximately \$1.5 million dollars.

Sewer treatment plants / Existing water and sewer coverage:

- Town recommended discussing plans for water and sewer service expansions directly with Charlotte-Mecklenburg Utilities.
- Water and sewer service is more prevalent in Catawba basin and Clear Creek basin.
- Town is closely watching inter-basin transfer lawsuit that is pending in Cabarrus County.
- Town has had developments approved that have had their allocated sewer capacity revoked.
- Mall has fire protection only and will have wells. Mall is building infrastructure to connect to public sewer and water service.

Local commitment to development:

- Town generally encourages low density single family development, as well as controlled commercial growth that is centered in downtown area. Town also supports controlled commercial growth near mall.
- Town has lost tax base due to sale of Clear Creek Business Park (originally designated as industrial area) property to hospital authority and school. Town looking to preserve non-residential in Clear Creek Business Park. Town may consider looking at planned industrial use at one of the I-485 interchanges

Local development incentives:

- None.

Major development constraints / Natural resources:

- Lack of water and sewer service is an issue constraining growth and development, especially in the Goose Creek watershed.
- Endangered species south of NC 218/NC 51.
- Stream buffers.
- Pockets of soils that are unsuitable for development.

Local riparian buffer regulations / Local land use controls:

- Residential zoning is very low density. Minimum 40,000 square feet residential lot sizes are required when no water and sewer service. Existence of one of the two public services (i.e., sewer or water) allows for a minimum residential lot size of 30,000 square feet. If both public water and sewer service exists, the

Minutes of Mint Hill Meeting - 4/2/08 (cont'd)
Monroe Connector/Bypass

residential lot size can be reduced to 20,000 square feet. Downtown Overlay A allows 6 residential units per acre.

- Conservation subdivision – Preserve a minimum of 25% of property allows residential lot size to be reduced to 20,000 square feet. Must have public water and sewer to be within this category.
- Within Goose Creek, there are 200 foot buffers on intermittent streams. Jurisdictional streams have 400 foot buffers.

Local runoff management programs / PHASE II Stormwater Management

- Mint Hill is a Phase II community. Post Construction ordinance was adopted on June 30, 2007. Mr. Rusty Rozzelle at Mecklenburg County Land Use and Environmental Services Agency (LUESA) is the Mint Hill stormwater administrator.

Development moratoria:

- None.

Potential development assuming Monroe Connector/Bypass will be built as a toll project in 2013:

- Mint Hill believes that the Monroe Connector/Bypass will have minimal to no influence on potential development in Mint Hill. The corridor between the Monroe Connector/Bypass project and the Bridges of Mint Hill area may see some pressure for residential and commercial growth.

Potential development assuming Monroe Connector/Bypass will be built by widening US 74 and adding service roads:

- Mint Hill is somewhat geographically removed from the upgrade existing US 74 concept. Consequently, it is believed that that this alternative concept will have minimal to no influence on potential development in Mint Hill.

Potential for new development assuming the Monroe Connector/Bypass would not be constructed:

- Mint Hill believes that the Monroe Connector/Bypass will have minimal to no influence on potential development in Mint Hill.
- If Monroe Connector/Bypass project were not constructed, NC 218 would likely continue to experience high traffic volumes and high percentages of truck traffic attempting to bypass US 74.

Economic impacts resulting from widening existing US 74 or building new location toll road:

- Mint Hill anticipates no potential economic impacts within its jurisdiction as a result of widening existing US 74.

Additional comments concerning influence of Monroe Connector/Bypass toll project:

- None.

Affects to intensity / distribution of development from the removal of US 601 interchange:

- No detailed discussion. This area is outside of Mint Hill planning area.

Local controversy associated with Monroe Connector/Bypass project:

- The Town is not aware of any current local controversy associated with the Monroe Connector/Bypass project.

Traffic patterns / Expected changes as a result of Monroe Connector/Bypass project:

- NC 218 is currently being used as a bypass of US 74. NC 218 not built to accommodate the truck traffic that is currently using it. Consequently, it is deteriorating rapidly.

Minutes of Mint Hill Meeting - 4/2/08 (cont'd)
Monroe Connector/Bypass

- Town feels that construction of Monroe Connector/Bypass will help address issue of NC 218 being used as a bypass of US 74. Town is not sure if use of NC 218 will continue if Monroe Connector/Bypass is constructed as a toll facility due to traffic wishing to avoid paying a toll.

Minority, low income, elderly communities in study area:

- Pockets of low income and/or minority communities may exist in manufactured housing located off of Albemarle Road.
- Town is not aware of any organized minority groups that are active in the community. Town will confirm this.
- Ms. Dunn will have Town GIS contact will forward demographic information that the Town has to supplement NC One Map GIS and demographic data that is available via US Census and State of North Carolina.

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 Anne Redmond (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File

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Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Meeting with the Town of Stallings

Meeting Date: 3/18/08

Meeting Location: Town of Stallings

Present:

Mayor Lynda Paxton	Town of Stallings
Brian Matthews	Town of Stallings
Lynne Hair	Town of Stallings
Shannon Martel	Town of Stallings
Anne Redmond	HNTB – Raleigh
Adin McCann	HNTB – Charlotte
June Farrell	PBS&J

Anne Redmond began by providing study team introductions and giving brief overview of the project. The North Carolina Turnpike Authority (NCTA) is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location detailed study alternatives. Although not an alternative to be carried further for detailed study in the Draft Environmental Impact Study, the regulatory agencies have requested additional information with regards to potential indirect and cumulative effects of the Upgrade Existing US 74 alternative concept. The regulatory agencies are also interested in a discussion of potential indirect and cumulative effects if the US 601 interchange is not constructed as part of the NCTA project. Citing the NCTA's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area (figure provided during meeting). The FLUSA was defined in accordance with the NCDOT/NCDRN Eight-Step Method. For the Upgrade Existing US 74 concept, a 2 mile buffer of existing US 74 was identified as the FLUSA. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The current anticipated Monroe Connector/Bypass Schedule is as follows:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic- Late 2013

Staff Background:

- Ms. Hair has been with the Town of Stalling for approximately 1.5 years. Mr. Matthews has been with the Town for approximately 6 years. Ms. Martel has been with Town for approximately 1 year. Mayor Paxton has been in office for approximately 2 years and has lived in Town for approximately 38 years. Overall, the attendees felt very familiar with the area.

Land Use Plans / Updates to current plans:

- Local land use plan adopted in July 2006.
- Town is currently developing a Unified Development Ordinance (UDO) that shouldn't affect the land use plan. The Town currently has zoning & subdivision regulations, but they are disconnected. The Town

Minutes of Stallings Meeting – 3/18/08 (cont'd)
Monroe Connector/Bypass

hopes that the UDO will unify and consolidate these policies. Town anticipates draft UDO to be completed in the next 30 days. The UDO will then have to be reviewed by the Board.

- All existing town planning documents and ordinances/regulations are available online.

Local GIS information:

- The GIS contact for Town of Stallings is Ms. Shannon Martel.

Growth / Rate of annexations:

- The Town could annex land to the north, but the current Board is not interested in annexation.
- The Town recently took in 2 subdivisions in January 2007: Shanamara and Emerald Lake. Both subdivisions straddle the county line and were partially within the town prior to the total annexation in January 2007.
- Overall, no real recent growth has occurred in Town of Stallings due to sewer capacity issues in County.

Stallings commercial market / Employment centers:

- The Town has seen pockets of commercial development that were previously approved prior to sewer moratoria.
- Bulk of Town's existing commercial development is along US 74 and Monroe Road corridor. Pockets of commercial development throughout Town that are neighborhood-type commercial developments.
- Downtown area near Monroe Road – site plans and zoning approved for eye doctor and animal hospital clinic. One under construction and one awaiting allocation of sewer capacity.
- Site plan approved for 105-110,000 square foot general retail/office/commercial development. Includes approximately 80 townhome units.
- Scott Clark Toyota dealership is under construction along US 74.
- McKee Rd Corridor has commercial development potential.
- AEP Corporation and CEM Corporation – located on Stallings Road and together employ over 300 people. These are the two largest employers within Town of Stallings.
- Stevens Mill Road - an office park has been approved (zoning approval only, no site plan approval) on the other side of US 74. The developer is Trotters and the development consists of an office condominium center and could be a potential employment center. Development has allocated sewer capacity.

Major employer relocations:

- Town thinks that McGee Corporation on US 74 is evaluating relocation options. Town estimates that there are more than 50 employees working at McGee Corporation.
- No other potential relocations into or out of Town are known at this time.

Major commercial / residential / industrial developments planned:

- Fairhaven – large residential project attempting to complete its project. Phase II is estimated to be approximately 200-300 homes, but is not a priority for allocation of sewer capacity.
- Town has residentially zoned property, but Council does not appear interested in residential development. No proposals have been brought to Council for consideration.
- Townhome development (approx. 80 units) was approved as part of commercial development mentioned earlier in meeting.
- Chestnut Place – extension of existing subdivision that involved 55 new residential lots.

Sewer treatment plants / Existing water and sewer coverage:

- All water and sewer is provided by other jurisdictions (Union County, Mecklenburg County). Due to Union County sewer moratoria, the Town is currently exploring options to partner with Charlotte-

Minutes of Stallings Meeting – 3/18/08 (cont'd)

Monroe Connector/Bypass

Mecklenburg Utilities to provide sewer service to Town. A study of potential options is currently underway and should be completed within approximately 30 days.

- In order to get sewer and water GIS information, a GIS data agreement will need to be submitted to Union County. Ms. Cynthia Mabry and Mr. Rob Bailey are the GIS contacts for Union County.

Local commitment to development:

- Stallings planning staff believe that Board is supportive of quality commercial development.
- Residential development is not on the top of the Board priority list. Town Board may approve residential development brought forward for consideration if it is appealing in terms of design is unique and/or of high quality.
- Town does not have a lot of vacant land for development.
- Stallings Road is scheduled for widening in 2011. Town believes the Council is focused on redevelopment opportunities associated with this project.
- Town has adopted the conditional zoning process. Council prefers this approach to allow unique situation to request specific standards for that development. Board has been very receptive of these types of requests due to the flexibility it provides them.

Local development incentives:

- None.

Major development constraints / Natural resources:

- Sewer is a major constraint to potential development.
- Not a lot of developable land in the Goose Creek Basin. Trotter office condo development mentioned earlier is in Goose Creek Basin and would have to adhere to special requirements associated with the basin.
- Town of Stallings feels it is “wedged” between other municipalities. Consequently, the Town staff feels it is an unknown in terms of what it has to offer potential residents and employers.

Local riparian buffer regulations / Local land use controls:

- Town follows the Goose Creek basin stream buffers. Town has not officially adopted any other official stream buffer requirements.

Local runoff management programs / PHASE II Stormwater Management

- Town has stormwater plan that is similar to Mecklenburg County stormwater regulations. Town stormwater plan is not available online, but Mecklenburg County’s stormwater plan is available online and it is identical to the Town’s.
- Town recently adopted post construction regulations as a result of Phase II. Post construction ordinance is available online.

Development moratoria:

- Union County has moratoria in place due to sewer capacity limitations.

Potential development assuming Monroe Connector/Bypass will be built as a toll project in 2013:

- Town feels that it will see very little development resulting from Section 18A because it is a controlled access road and Town does not really have an interchange. Town feels that Section 18A will impact development because it will cross through Town’s undeveloped land.
- Town believes that Section 2 would provide potential for commercial redevelopment. Town feels that many of the existing commercial properties are not of the highest and best use.
- Town conducted internal study of Section 2 to determine how much tax base would be lost as a result of this option. Town estimated that it would lose a maximum of approximately \$125,000 of tax base (approx. 4% of Town’s total tax base). Although the Town does not want to lose tax base, it believes

Minutes of Stallings Meeting – 3/18/08 (cont'd)
Monroe Connector/Bypass

the potential redevelopment opportunities might be worth it. Town stated that most parcels affected with Alternative 2 are in Stallings. The Town provided a hard copy of the spreadsheet that was created during the Town's internal evaluation of the potential tax base impacts. Based on input from PBS&J, this assessment was based on an approximate 400 foot corridor.

Potential development assuming Monroe Connector/Bypass will be built by widening US 74 and adding service roads:

- Town believes that Upgrade Existing Us 74 Alternative would provide potential for commercial redevelopment. Town feels that many of the existing commercial properties along US 74 are not of the highest and best use.

Potential for new development assuming the Monroe Connector/Bypass would not be constructed:

- Town believes that area around Section 18A will have more pressure for residential development. There are approximately a couple hundred acres of undeveloped land that are zoned for residential development in this area. However, sewer capacity for any type of development is going to be an issue.
- The character of development along existing US 74 has been stable over the last several years. Therefore, the Town does not see a lot of development changes occurring to US 74 if the Monroe Connector/Bypass is not built. Town thinks vacant properties along US 74 will eventually develop, even if the Monroe Connector/Bypass is not constructed.

Economic impacts resulting from widening existing US 74 or building new location toll road:

- In short term, the Town estimates that widening of US 74 would result in approximately \$60-75,000 loss in tax revenue from business displacements. In the long-term, the Town hopes that potential redevelopment opportunities associated with the widening might more than replace this tax base loss.

Additional comments concerning influence of Monroe Connector/Bypass toll project:

- The Town is concerned about the potential impacts of the project (safety, air quality, and general quality of life issues) on the school as a result of Section 18A. Town Council views school as a focal point and envisions the areas around developing as with residential uses that would support the school and help establish the Town's identity. The Town believes that Section 18A is not supportive of this vision because it would dissect this area.
- The Town feels that it has already been dissected by US 74 and Old Monroe Road.
- YMCA has expressed interest in relocating to the area around the school. Town is unsure if Section 18A would impact the YMCA's decision.
- PBS&J has been tasked with evaluating the potential community impacts as part of the Community Impact Assessment (CIA). Once the CIA is complete and the direct impacts are identified, the study will team will work collaboratively to evaluate potential indirect and cumulative effects.
- HNTB is not planning to meet with the representatives of the school system or the Union County School Board as part of the indirect and cumulative effects assessment. PBS&J may be meeting with them as part of the CIA task.
- The Town also indicated concern associated with the proposed rerouting of Oak Spring Road. The proposed alignment would impact Next Level Church. Next Level Church also has plans for a large expansion of its facilities.
- The Town does not anticipate making any changes to land use plans as a result of the qualitative indirect and cumulative effects study. The Town may make changes to land use plans based upon the selection of the preferred alignment.
- The Town has been somewhat confused by the use of the terms "direct impact" and "indirect impact" when discussing impacts of the proposed interchange ramp on the school property. The Town would like to receive clarification on this issue.

Minutes of Stallings Meeting – 3/18/08 (cont'd)
Monroe Connector/Bypass

Affects to intensity / distribution of development from the removal of US 601 interchange:

- In general, the Town planning staff believes that the elimination of the proposed US 601 interchange will have no effect upon development within the Town.
- The Town does not believe that elimination of a proposed interchange with a US highway makes sense from a transportation perspective. If interchanges are considered for elimination, the Town believes that there are other interchanges with lesser facilities that should be considered.

Local controversy associated with Monroe Connector/Bypass project:

- In general, there is widespread community support for Section 2. On the surface, the Town staff feel this issue has helped to unify the Town.
- Some business owners along US 74 may not support Section 2 alignment because they will be affected.
- The Town indicated that CPCC has expressed a large interest in the project because it has the potential to impact their campus access. Stallings, Central Piedmont Community College, and Town of Matthews have all joined to support Section 2. The Town suggested that PBS&J meet with Mr. Tony Zeiss from CPCC to further discuss this issue.
- The Town also recommended that PBS&J meet with Lake Park on the CIA.

Traffic patterns / Expected changes as a result of Monroe Connector/Bypass project:

- The Town expects Section 18A to reduce traffic on existing US 74. From the Town's perspective, it is believed that Section 2 will not affect existing traffic patterns within the Town.

Minority, low income, elderly communities in study area:

- Forest Park is a low to moderate income subdivision within the Town. The subdivision's only existing access is to/from US 74. The developer originally designed connectivity to Stevens Mill Road, but it was never built. The Town believes this may be an alternative access option for the Forest Park subdivision.
- The Town does have low income area closer to downtown (Spring Hill subdivision) that is not directly affected by the Monroe Bypass/Connector. This area has been designated as a revitalization area.

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 Anne Redmond (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File

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Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Meeting with Union County Planning

Meeting Date: 5/21/08, 10:00 a.m.

Meeting Location: Union County

Present:

Dick Black	Union County
Anne Redmond	HNTB – Raleigh
Susan Paschal	HNTB – Charlotte

Anne Redmond began by providing study team introductions and giving brief overview of the project. The North Carolina Turnpike Authority (NCTA) is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location alternatives. Although not an alternative to be carried further for detailed study as part of the Draft Environmental Impact Study, the regulatory agencies have requested additional information with regards to potential indirect and cumulative effects of the Upgrade Existing US 74 alternative concept. The regulatory agencies are also interested in a discussion of potential indirect and cumulative effects if the US 601 interchange is not constructed as part of the NCTA project. Citing the NCTA's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area. The FLUSA was defined in accordance with the NCDOT/NCDENR Eight-Step Method. For the Upgrade of Existing US 74 concept, a 2 mile buffer of existing US 74 was identified as the FLUSA. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The Monroe Connector Bypass Schedule:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic- Late 2013

Other items discussed:

Staff Background:

- Dick Black has been with Union County since 2001.

Land Use Plans pertaining to annexation, economic development, infrastructure or natural resources:

- There is very little area under county control. Marshville and Wingate are establishing an ETJ probably extending out one mile.
- Union County is updating its land use plan. They have met with the western part of the county regarding patterns and zoning set near Weddington, Wesley Chapel, etc. They will carry forward with plans for the Rocky River Road and NC 84 commercial center.

Local GIS information:

- The GIS contact for Union County is Ms. Cynthia Mabry.

Minutes of Meeting with Union County Planning – 5/21/08 (cont'd)
Monroe Connector/Bypass

Growth / Rate of annexations:

- Follows sewer from Stallings down through Monroe.
- Poor soils and the federally endangered Carolina heelsplitter are development constraints near Fairview. The lack of sewer is also a development constraint in this area.

Commercial market:

- Many employment centers are located in Monroe and along the entire US 74 corridor.
- The Monroe Corporate Center near the airport is a large employment center in the area and is attracting growth. It is mostly retail stores, but does include some industrial businesses.
- 600,000 square feet of retail was approved in Wesley Chapel outside of the FLUSA.

Major commercial / residential / industrial developments planned:

- Wesley Chapel has plans for a Super Target, drug stores, and shopping centers.
- Residential pattern is continuing in Indian Trail.
- Many of the holes along Monroe Road / Old Charlotte are industrial.
- Union County is 87% residential and 13% non-residential.
- There has been heightened awareness in the County to support non-residential areas due to the lower density in Duck and Goose Creek basins.
- Unionville and Fairview have incorporated defensive annexation in order to maintain a rural heritage.

Sewer treatment plants / Existing water and sewer coverage:

- A wastewater treatment plant is located near Waxhaw, but it is capacity constrained. Expansion is planned for September.
- The County has a contract with CMUD in the western part of the county, which has 3 million gallons per day (GPD) available and 1 million GPD in use.
- The Monroe wastewater treatment plant is expanding, and may build jointly with the County.
- Union County has a contract with Anson County for water and is looking to bring water and sewer to the eastern part of the FLUSA.

Local commitment to development:

- From the Planning Staff perspective, Union County is done with residential growth for now. Also, the Planning Staff would like to see selective growth in the western part of the county.
- The political perspective changes every 2 years.

Major development constraints / Natural resources:

- The Atlantic pigtoe is present in the southern part of the county.
- Transportation is a constraint outside of the Rea Road exit because of only lane capacity in 50 years.
- Union County is 3rd or 4th in the state in agricultural production. South of US 74 is more agricultural and Union County wants to preserve these farms. They are looking for incentives to promote maintaining the agriculture land use.
- Waxhaw is the habitat for the Carolina heelsplitter along with Duck and Goose Creek.

Local riparian buffer regulations / Local land use controls:

- Six Mile, Waxhaw, Duck and Goose Creek all have 100-foot and 200-foot buffers.
- Union County is working on stormwater ordinance. Currently, the state does review as soon as the land use plan is done. Ordinances will be re-done.

Local runoff management programs / PHASE II Stormwater Management

- Ms. Christy Putnam, located on the 5th floor, is the PHASE II stormwater community contact.

Minutes of Meeting with Union County Planning – 5/21/08 (cont'd)
Monroe Connector/Bypass

Development moratoria:

- Contact Ms. Christy Putnam regarding future growth and plans for sewer and water extensions.
- Anything above 5 lots is not being issued unless both water and sewer are available.
- Water allocation should be complete by the end of the summer.
- The sewer allocation policy can be found online. Non-residential zones receive priority for sewer.

Potential development assuming Monroe Connector/Bypass will be built as a toll project in 2013:

- The Monroe Connector/Bypass will pick up through traffic.
- Union County will have a change for US 74 to redevelop at business employment corridor.
- Industries that need access to port or Charlotte may locate near interchanges.
- Union County's residential growth is driven by its proximity to Charlotte.
- Mr. Black feels that tolls will not hinder development.

Potential development assuming Monroe Connector/Bypass will be built by widening US 74 and adding service roads:

- Mr. Black commented that widening US 74 and adding service roads would be terrible as well an economic disaster because this would displace all of the existing businesses.

Potential for new development assuming the Monroe Connector/Bypass would not be constructed:

- The area in the eastern part of the county would stay the same with no notable growth.
- Residential build-out would be confined.
- This would be a disadvantage for non-residential zones.
- US 74 would become a parking lot.
- All other counties around Charlotte have an interstate highway which creates demands on Union County's infrastructure.

Economic impacts resulting from widening existing US 74 or building new location toll road:

- Contact Mr. Maurice Ewing about Union County Partners for Progress with the Union County Chamber of Commerce.

Additional comments concerning influence of Monroe Connector/Bypass toll project:

- Union County believes tolls are not an issue.

Affects to intensity / distribution of development from the removal of US 601 interchange:

- Typical office type development such as Promenade would be lost.
- This plan would not affect residential areas as much.

Local controversy associated with Monroe Connector/Bypass project:

- Some residents that would be living near the Monroe Connector/Bypass have expressed concern about noise, traffic, etc.
- There has been concern about displacement, particularly with businesses.

Traffic patterns / Expected changes as a result of Monroe Connector/Bypass project:

- There is a mixture of users along US 74.
- Separate through traffic would be beneficial and allow US 74 to be a first rate business corridor.

Minority, low income, elderly communities in study area:

- Mr. Black is not aware of any of these communities from a county standpoint. He recommends contacting the City of Monroe or individual municipalities.

Minutes of Meeting with Union County Planning – 5/21/08 (cont'd)
Monroe Connector/Bypass

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 Anne Redmond (HNTB) within five working days after receipt of these minutes.

cc: Attendees
Project File



Project: STIP Project R-3329/R-2559 Monroe Connector/Bypass

Subject: Meeting with Union County Utilities Director

Meeting Date: 6/27/08, 9:00 am

Meeting Location: Union County Public Works
500 N. Main St, Suite 500
Monroe, NC

Present:

Scott Huneycutt	Assistant Director Water
Amy Helms	Assistant Director Infrastructure and Environment
Mike Garbark	Assistant Director of Engineering
Anne Redmond	HNTB – Raleigh
Susan Paschal	HNTB – Charlotte
Paige Dixon	HNTB – Charlotte

Anne Redmond began by providing study team introductions and giving brief overview of the project. The North Carolina Turnpike Authority (NCTA) is conducting a Qualitative Indirect and Cumulative Effects Assessment as part of the NEPA process for the 16 new location detailed study alternatives. Although not an alternative to be carried further for detailed study in the Draft Environmental Impact Study, the regulatory agencies have requested additional information with regards to potential indirect and cumulative effects of the Upgrade Existing US 74 alternative concept. The regulatory agencies are also interested in a discussion of potential indirect and cumulative effects if the US 601 interchange is not constructed as part of the NCTA project. Citing the NCTA's Preliminary Traffic and Revenue Study, construction of the project without the US 601 interchange may not be financially feasible.

Anne Redmond also presented the Future Land Use Study Area (FLUSA) for comment. For the new location alternatives, the FLUSA was identified as a 4.8 mile buffered study area (figure provided during meeting). The FLUSA was defined in accordance with the NCDOT/NCDENR Eight-Step Method. For the Upgrade Existing US 74 concept, a 2 mile buffer of existing US 74 was identified as the FLUSA. The FLUSA is a starting point for data collection and does not infer that indirect and cumulative land use changes resulting from construction of the project will be felt throughout the entire FLUSA.

The current anticipated Monroe Connector/Bypass Schedule is as follows:

- Draft Environmental Impact Statement – End of 2008
- Record of Decision – Summer 2009
- Construction – Fall 2009
- Open to Traffic – Late 2013

Other items discussed:

Staff Background:

- Amy Helms has been with Union County Utilities for 4 ½ yrs and is originally from Union County.
- Scott Huneycutt has been with Union County Utilities for 7 years, and is from Stanly County. Before working with Union County Utilities, Mr. Huneycutt did consulting work in Union County and has about 15 years of public works experience.
- Mike Garbark was previously with Mecklenburg County and has been with Union County for one year.

GIS Data

- GIS contact is Ms. Cynthia Mabry: Mabry@co.union.nc.us

Minutes of Union County Utilities Meeting – 06/27/08 (cont'd)
Monroe Connector/Bypass

- The 2004 water and sewer coverage area shapefile (NC One Map) is the best available GIS data.
- Scott Huneycutt noted that Union County is currently in the process of working on Comprehensive Water Mapping.
- HDR is the water modeling consultant for Union County.
- GIS water line data is available for the Marshville and Wingate area, but is incomplete west of Rocky River Road. They are currently focusing on creating data for US 601 in the Unionville / Fairview area.

Existing water coverage / planned extensions

- There are pockets south of US 74 as well as east of US 601 that do not have water coverage.
- There is about 90% water coverage in the eastern part of the study area.
- Union County does not have many extensions planned.
- The current CIP wants to bring more water in from Anson County to the south side of Marshville.
- GIS data contains Monroe water system.

Water service / contracts with Anson County

- The city of Monroe and Marshville both have their own water systems and wholesale to Wingate. Marshville gets their water from Anson County.
- Weddington, Wesley Chapel, Indian Trail, and Stallings all get their water from Union County.
- In 2014, the City of Monroe expects to provide 2 million gallons of water to the airport area.
- Union County has emergency connections with the City of Monroe.

Sewer Coverage /planned extensions / treatment plant in Monroe

- Hemby Bridge has its own private sewer system.
- All sewer systems get expanded by development communities.
- Marshville and Monroe provide their own sewer.
- Unionville / Fairview do not have sewer coverage with the exception of the schools in the area.
- Union County is looking to upgrade capacity on the east side mostly for hydraulic improvement.

Sewer service contract with Mecklenburg County

- Flow is sent to 6-mile WWTP, outside of study area.
- No other contracts.

Major development constraints

- The Heelsplitter caused constraints at Crooked Creek.
- The soils near Unionville are poor.

Buffer regulations / land use controls

- Union County is not a Phase II, but the state law requires a 30-foot no build buffer.
- The draft County Ordinance, which should be passed by the end of the year, has 30-foot intermittent and 50-foot perennial buffers. The perennial buffer in floodplains is 100 feet.

Local runoff management programs / PHASE II Stormwater Management Plan

- Union County has storm water detention for cluster development.
- Union County is not a Phase II community.
- Stallings, Indian Trail, Monroe, and Lake Park are all Phase II communities.
- Lake Park just passed its Post Construction Ordinance, which followed the state model.

Minutes of Union County Utilities Meeting – 06/27/08 (cont'd)
Monroe Connector/Bypass

Development moratoria / sewer allocation

- There is no current sewer capacity.
- Policy adopted in September 2007, which includes specific developments that can currently get sewer. It will be about 4 or 5 years before there will be any solution so that development can proceed.
- A consultant is working on a water allocation policy, which should be complete by August 2008.

Additional Comments

- HDR is currently working on a long term water supply PER. They are also doing population projections which may be helpful to HNTB. They have completed their data collection process and are currently “crunching numbers”. The HDR contact is Pete D'Adamo (704)-338-6857.

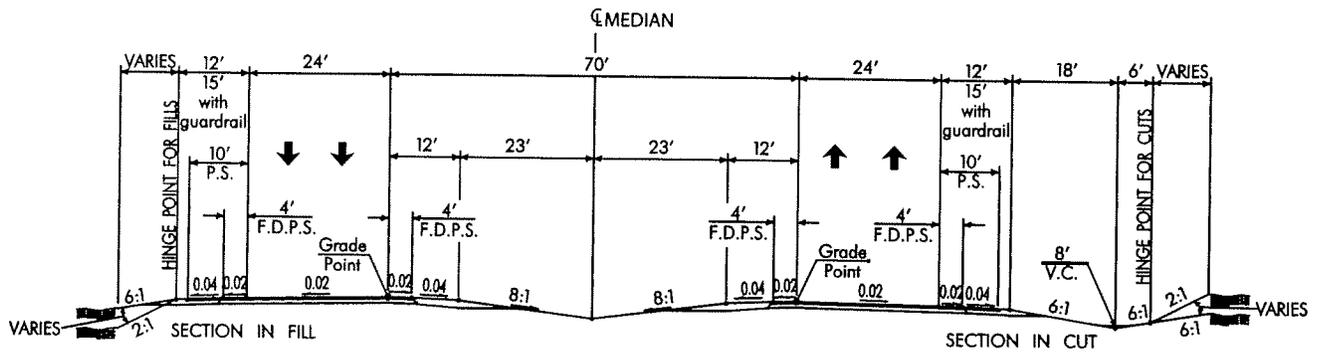
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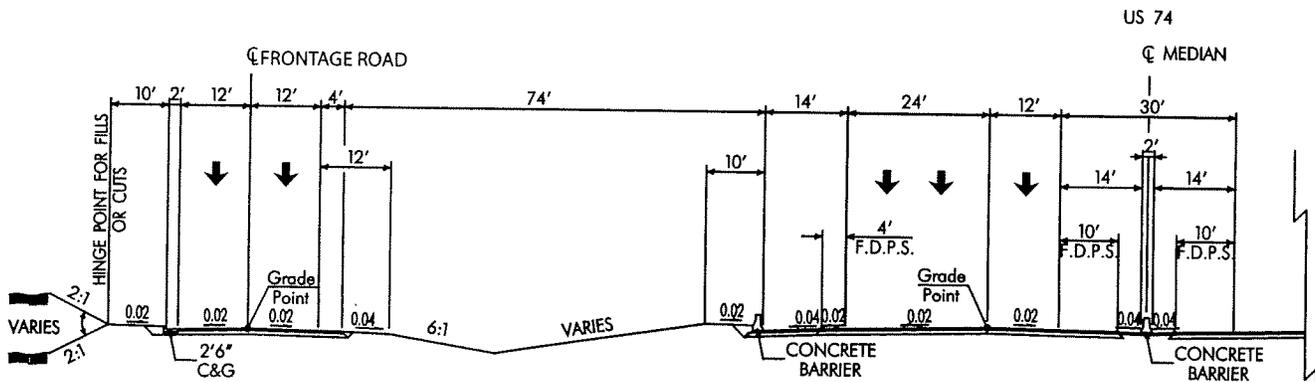
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APPENDIX B
TYPICAL SECTION

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**US 74 CONNECTOR/BYPASS TYPICAL SECTION
WITH A GRASS MEDIAN
(Typical ROW Width)**



**IMPROVE EXISTING US 74 TYPICAL SECTION
WITH FRONTAGE ROADS
(Typical ROW Width)**



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APPENDIX C
AGENCY COMMENTS

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Monroe Connector / Bypass

Mecklenburg and Union Counties

TIP Nos. R-3329 / R-2559

ICE SCOPING MEETING MEETING MINUTES

Date: June 29, 2007

Time: 10:30 am

Place: NCTA Office/Conference Call

Purpose: Discuss scoping for Monroe Connector/Bypass indirect and cumulative impact studies.

Attendees:

Name	Organization	Email Address
Rob Ayers	FHWA	rob.ayers@fhwa.dot.gov
George Hoops	FHWA	george.hoops@fhwa.dot.gov
Marella Buncick	USFWS	marella.buncick@fws.gov
Marla Chambers	NCWRC	chambersmj@carolina.rr.com
Bob Deaton	NCDOT-HEU	rdeaton@dot.state.nc.us
Jennifer Harris	NCTA	jennifer.harris@ncturnpike.org
Jeff Dayton	NCTA-GEC	jeff.dayton@ncturnpike.org
Anne Redmond	NCTA-GEC	anne.redmond@ncturnpike.org
Christy Shumate	NCTA-GEC	christy.shumate@ncturnpike.org
Susan Fisher	HNTB	sfisher@hntb.com
Jill Gurak	PBS&J	jsgurak@pbsj.com
Ross Andrews	Ecoscience	andrews@ecosciencenc.com

Ms. Gurak briefly reviewed the history and current status of the project, and Ms. Redmond explained that the purpose of the meeting was to begin discussion on the scope for the indirect and cumulative effects studies for the Monroe Connector/Bypass project. As a starting point, Ms. Redmond asked the agencies for their opinions on ICE studies completed as part of the previous Monroe Connector and Monroe Bypass projects. Ms. Buncick noted that during the previous studies, several independent ICI studies were completed over the course of a few years and with different study areas and assumptions.

Mr. Ayers pointed out that the new study will have a different scope than previous studies. For example, if there are determined to be indirect or cumulative impacts on the Carolina heelsplitter, analysis would be completed for the entire Goose and Duck Creek watersheds rather than just for portions of the watersheds in Union County. FHWA and NCTA would like USFWS to provide input on what indicators

should be used for analyzing impacts to the mussels. It would be beneficial to get this feedback early in the project process so that relevant data can be collected up front.

Ms. Buncick suggested revisiting discussions from the previous Biological Assessment as a starting point for identifying indicators. In addition, she noted that impact analysis will be influenced by NPDES permit decisions in the project area, and she recommended that NCTA follow-up with NCDWQ to discuss the status of NPDES permitting in the project area. Ms. Buncick suggested that Tom Augspurger, USFWS-Raleigh, or John Hennessy, NCDWQ, may have information on this.

Ms. Redmond suggested that ICI scoping be added to the TEAC meeting agenda for July so that all agencies can participate in the discussion, and asked what information NCTA could provide to facilitate the discussion. Ms. Buncick suggested that NCTA determine the current status of land use controls and regulations in the study area.

Ms. Buncick questioned the current state of the practice for ICI analysis, noting that previous studies have used a standard five to seven mile distance from interchanges as an assumed study area for induced growth. Ms. Redmond stated that assumption would be revisited as part of this study. Ms. Buncick cautioned that changes to the study areas from earlier studies should be carefully documented.

Ms. Chambers asked about including Six Mile Creek or Waxhaw Creek in the ICI project study area, as Carolina heelsplitters have recently been discovered there. Mr. Ayers noted that the local governments and planners will be relied upon to provide information on projected land use changes associated with the project. The ICI study area will be based on the area of potential land use change.

Ms. Chambers also noted that water quality issues, including 303d streams, should be considered, as well as federal and state listed species, including aquatic species in North and South Fork Crooked Creeks. She added that resources have been impacted substantially by past and ongoing activity in the project area and are already showing signs of degradation. It will be important to discuss how much additional degradation of resources can be attributed to the road project. Ms. Chambers also stated that Union County has not historically been cooperative with implementing development and stormwater controls to protect resources.

Mr. Ayers asked about occurrences of federally-listed species in Mecklenburg County that do not occur in Union County. Ms. Buncick noted that bald eagle was listed in Mecklenburg County but is not likely to occur in the part of the county impacted by the project. Ms. Buncick also stated that there is a known occurrence of Schweinitz sunflower in the project area and recommended an analysis similar to what was done as part of the Shelby Bypass project – looking at suitable habitat around proposed interchanges. She added that the sunflower will not require the same level of analysis as the heelsplitter.

Ms. Chambers stated that for the land use analysis, she would like to see analysis of impervious surface increase and date of projected build out by locality.

Ms. Redmond noted that the previous study included different build out scenarios but there have been changes in the project area. Ms. Chambers noted that Union County has proposed stormwater controls but she does not know if they have been implemented. NCTA will check with Bruce Ellis, NCDOT-NEU, on the status of this. Mr. Deaton also noted that since the previous studies, Unionville and Fairview have incorporated and may have additional land use controls. The Centralina Council of Governments may be able to provide information on this.

Ms. Redmond asked about preferred methodologies or analysis tools. Ms. Buncick stated that the previous BA had identified a set of indicators for impacts to the heelsplitter. She will look at those and discuss them with experts at USFWS to determine if they are still appropriate.

Ms. Gurak questioned the plan for completing qualitative vs. quantitative studies for this project. Ms. Buncick stressed that it will be very important to have a good comparison of the alternatives – the more detail the better. Ms. Redmond pointed out that because of the aggressive project schedule, NEPA studies will likely overlap with permitting and Section 7 consultations.

NCTA envisions a single scope of work for ICE studies with sub-sections for analyzing specific resources. The land use assessment should be completed first so that the results can be used to determine study areas for other resources.

Action Items:

- 1) USFWS will look at the previous BA to determine potential indicators for impacts to the heelsplitter and discuss these internally.
- 2) NCTA will contact NCDWQ and NCDOT-NEU to discuss the status of NPDES permitting and other land use controls in the project area.
- 3) ICI scoping will be included on the July 26 TEAC agenda.
- 4) NCTA will begin drafting a scope of work for ICE studies and provide to USFWS and NCWRC for review.

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Monroe Connector / Bypass

Mecklenburg and Union Counties

TIP Nos. R-3329 / R-2559

ICE SCOPING MEETING MEETING MINUTES

Date: July 26, 2007

Time: 3:00 pm

Place: NCTA Office/Conference Call

Purpose: Discuss scoping for Monroe Connector/Bypass indirect and cumulative impact studies.

Attendees:

Name	Organization	Email Address
Rob Ayers	FHWA	rob.ayers@fhwa.dot.gov
George Hoops	FHWA	george.hoops@fhwa.dot.gov
Polly Lespinasse	NCDWQ	Polly.lespinasse@ncmail.net
Bob Deaton	NCDOT-HEU	rdeaton@dot.state.nc.us
Jennifer Harris	NCTA	jennifer.harris@ncturnpike.org
Anne Redmond	NCTA-GEC	anne.redmond@ncturnpike.org
Christy Shumate	NCTA-GEC	christy.shumate@ncturnpike.org
Susan Fisher	HNTB	sfisher@hntb.com
Jill Gurak	PBS&J	jsgurak@pbsj.com
Carl Gibilaro	PBS&J	cgibilaro@pbsj.com
Kim Bereis	PBS&J	kdbereis@pbsj.com
Ross Andrews	Ecoscience	andrews@ecosciencenc.com
Michael Gloden	Ecoscience	gloden@ecosciencenc.com

Mr. Gibilaro briefly reviewed the history and current status of the project, and Ms. Redmond explained that the purpose of the meeting was to begin discussion on the scope for the indirect and cumulative effects studies for the Monroe Connector/Bypass project.

As a starting point, Ms. Redmond asked if Ms. Lespinasse had reviewed ICE studies completed as part of the previous Monroe Connector and Monroe Bypass projects. Ms. Lespinasse was aware that previous studies had been completed but was not familiar with the details of the studies. Ms. Redmond noted that several other agencies did not like the format of the report, which was broken into separate reports for the land use component and water quality component.

Ms. Redmond explained the proposed process for proceeding with the ICE studies for the project:

- NCTA, in coordination with the agencies, will identify detailed study alternatives
- ICE studies will begin with qualitative land use evaluations to determine potential induced growth, specifically in the Goose and Duck Creek watersheds
- Land use changes will be evaluated in coordination with local planners and MUMPO
- If, following the qualitative study it is determined that a quantitative ICI is necessary, it will be completed for the preferred alternative

Ms. Lespinasse noted that a quantitative study would likely be required. Mr. Gibilaro added that the current project study area for direct impacts does not extend into the Goose Creek watershed.

Ms. Redmond added that there were some concerns with how the study area for previous ICE studies was defined – the study area did not extend into Mecklenburg County. She noted that the study area for this study will be redefined and will likely include entire watersheds rather than cutting them at the county line.

FHWA asked if NCDWQ had any issues with water quality on this project beyond those related to the endangered species in Goose Creek. Ms. Lespinasse responded that stormwater and 303(d) streams are issues. There are several 303(d) streams that cross the project study area.

FHWA asked if Ms. Lespinasse was aware of any waters in the project area that are not meeting their designated uses or if there are areas where standards are close to being exceeded. Ms. Lespinasse noted that the streams are listed by reach and reason for listing.

FHWA asked about indicators for analyzing impacts to water quality. Ms. Lespinasse said that she would check with NCDWQ's watershed group on preferred units of measurement. Mr. Ayers noted that it would be helpful to coordinate indicators among the agencies to streamline the analysis process.

NCTA is currently planning to do a qualitative analysis first to determine land use changes and then, if necessary, do a quantitative study on the preferred alternative only. FHWA agreed that land use changes will likely be equal across the alternatives due to their relative proximity; however, asked if Ms. Lespinasse thought that NCDWQ would require NCTA to analyze a different alternative for comparison. Ms. Lespinasse noted that she would check with John Hennessy.

Action Items:

- 1) Ms. Lespinasse will contact NCDWQ's watershed group for input on appropriate indicators and units of measurement for water quality impact analysis.
- 2) Ms. Lespinasse will discuss with John Hennessy whether NCDWQ has the discretion to require analysis of an alternative that either was never considered or was eliminated at some point previously for comparison of indirect and cumulative impacts.
- 3) Ms. Lespinasse will discuss NCTA's proposed approach of completing a qualitative analysis for preliminary alternatives and a quantitative analysis, if required, for the preferred alternative only with John Hennessy.
- 4) ICI scoping will be included on the August 15 TEAC agenda.
- 5) NCTA will begin drafting a scope of work for ICE studies.



Monroe Connector / Bypass

Mecklenburg and Union Counties

TIP Nos. R-3329 / R-2559

ICE SCOPING MEETING MEETING MINUTES

Date: August 14, 2007

Time: 4:30 pm

Place: NCTA Office/Conference Call

Purpose: Discuss scoping for Monroe Connector/Bypass indirect and cumulative impact studies.

Attendees:

Name	Organization	Email Address
Steve Lund	USACE	steven.w.lund@SAW02.usace.army.mil
Anne Redmond	NCTA-GEC	anne.redmond@ncturnpike.org
Christy Shumate	NCTA-GEC	christy.shumate@ncturnpike.org
Jeff Dayton	NCTA-GEC	Jeff.dayton@ncturnpike.org
Susan Fisher	HNTB	sfisher@hntb.com
Ross Andrews	Ecoscience	andrews@ecosciencenc.com

Ms. Redmond explained that the purpose of the meeting was to begin discussion on the scope for the indirect and cumulative effects studies for the Monroe Connector/Bypass project. Ms. Redmond explained the proposed process for proceeding with the ICE studies for the project:

- NCTA, in coordination with the agencies, will identify detailed study alternatives
- ICE studies will begin with qualitative land use evaluations to determine potential induced growth, specifically in the Goose and Duck Creek watersheds
- Land use changes will be evaluated in coordination with local planners and MUMPO
- If, following the qualitative study it is determined that a quantitative ICI is necessary, it will be completed for the preferred alternative

Ms. Fisher explained that the scope of work for the qualitative ICE study is based on NCDOT-HEU's standard scope of work and 8-step guidance for preparing ICE's. The product will be a report with figures showing the proposed project, study areas, natural features, etc.

Mr. Lund was not familiar with ICE studies previously completed for the Monroe Connector and Monroe Bypass projects. Ms. Redmond noted that there were some concerns with how the study area for previous ICI was defined – the study area did not extend into Mecklenburg County. She noted that the study area for this study will be redefined and will likely include entire watersheds rather than cutting them at the county line. The Goose Creek watershed will likely be included in the ICE study area.

Ms. Shumate pointed out that other agencies have identified threatened and endangered species, upland habitat, and water quality (including stormwater and 303d streams) as issues to be considered in the ICE. Ms. Redmond asked if USACE has any additional issues or preferred methodologies for analyzing impacts to these resources.

Mr. Lund stated that USACE generally defers to other agencies' requirements related to ICE. He asked how tolling will be incorporated. Ms. Redmond responded that traffic diversion as a result of tolling will be considered. She added that the Mecklenburg-Union MPO is expected to make a final recommendation on tolling at their September meeting and indications are that they will recommend tolling for the entire project. That being the case, NCTA will likely look only at toll alternatives for the project.

Gaston E-W Connector

With respect to the Gaston E-W Connector project, Mr. Lund was most concerned with secondary effects on wetlands and streams. In some instances, wetlands could be avoided by the preferred alternative. Mr. Lund also questioned how traffic patterns might change, and how would development patterns change. Ms. Redmond noted that this project is somewhat precedent-setting since the study area will be reaching into portions of South Carolina. Typically, NCDOT-HEU doesn't include detailed information from other states in the ICE studies. This may have an effect on potential mussels in SC and how it would fit into the permitting process.

Mr. Lund stated that he had concerns with the high quality wetlands throughout Gaston County. He also added that not all of these wetlands are discrete (based on Rapanos definition). Mr. Lund also had questions about the potential impacts to the larger floodplains within the project area (Catawba Creek, Crowders Creek).



Monroe Connector / Bypass

Mecklenburg and Union Counties

TIP Nos. R-3329 / R-2559

ICE SCOPING MEETING MEETING MINUTES

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Attendees:

Name	Organization	Email Address
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Anne Redmond	NCTA-GEC	anne.redmond@ncturnpike.org
Christy Shumate	NCTA-GEC	christy.shumate@ncturnpike.org
Jeff Dayton	NCTA-GEC	Jeff.dayton@ncturnpike.org
Susan Fisher	HNTB	sfisher@hntb.com
Ross Andrews	Ecoscience	andrews@ecosciencenc.com

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