

*Final*  
**AIR QUALITY  
TECHNICAL MEMORANDUM**

**Monroe Connector/Bypass  
Union and Mecklenburg Counties**

STIP Project Nos. R-3329 and R-2559

Prepared for:



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## EXECUTIVE SUMMARY

The purpose of the project 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 Program and the North Carolina Intrastate System, while maintaining access to properties along existing US 74. The proposed project would be a new location controlled-access toll facility in the US 74 corridor from I-485 in Mecklenburg County to just west of the Town of Marshville in Union County. There are sixteen new location Detailed Study Alternatives (DSAs) under consideration.

This memorandum documents the air quality assessment performed for the project. Air pollutants evaluated include those with a National Ambient Air Quality Standard (NAAQS), mobile source air toxics, and potential air quality impacts from construction activities.

**Criteria Pollutants and Transportation Conformity.** The criteria pollutants of concern in the project area are ozone and carbon monoxide, since the Charlotte (NC)-Gastonia (NC)-Rock Hill (SC) air quality region (which includes Union County and Mecklenburg County) is a moderate nonattainment region for ozone, and Mecklenburg County is a maintenance area for carbon monoxide.

The proposed project's DSAs would not cause or contribute to any new localized carbon monoxide violations or increase the frequency or severity of any existing carbon monoxide violations. None of the DSAs fit the criteria requiring a quantitative carbon monoxide hot-spot analysis, which indicates there is no potential for the proposed project to create a localized carbon monoxide hot-spot. Also, there are no known locations of existing carbon monoxide violations in the study area that the project could affect.

The proposed project is included in the 2030 Long-Range Transportation Plan (LRTP) and 2009-2015 Transportation Improvement Program (TIP) for the Mecklenburg-Union Metropolitan Planning Organization (MUMPO) area. The LRTP and TIP are included in the approved Conformity Determination for the Charlotte-Gastonia-Rock Hill air quality region, titled: *Conformity Analysis and Determination Report for the Cabarrus-Rowan MPO, the Gaston Urban Area MPO, and the Mecklenburg-Union MPO 2030 Long Range Transportation Plans and the FY 2009-2015 State Transportation Improvement Programs and for Non-MPO Areas of Lincoln County, Iredell County, Gaston County, and Union County Areas.* The current conformity determinations are consistent with the final conformity rule found in 40 CFR Parts 51 and 93. The USDOT made a Transportation Conformity Determination on the MUMPO 2030 LRTP on June 29, 2007 and on the 2009-2015 TIP on July 11, 2008.

In addition, in accordance with 40 CFR 93.115(b)(1), for a project identified in a transportation plan, the project's design concept and scope must not have changed significantly from those described in the transportation plan, or in a manner which would significantly impact use of the facility.

The DSAs for the project are generally consistent with the project descriptions (freeway) and project lengths (approximately 20 miles total) included in the LRTP. The only inconsistency in the LRTP is that the Monroe Bypass portion of the project (R-2559) is shown as a non-toll facility. The Monroe Connector/Bypass project is currently being studied only as a toll facility.

The conformity determination for the region will need to be updated prior to the completion of the Record of Decision (ROD) to change the project to a toll facility.

The selection of the No-Build Alternative would require the MUMPO LRTP to be updated to remove the proposed Monroe Connector and Monroe Bypass, and would need to seek other means to meet the region's emissions budget for conformance with the SIP.

**Mobile Source Air Toxics.** In sum, under all DSAs in the design year, it is expected there would be either minor changes or a slight reduction in MSAT emissions in the immediate area of the project, relative to the No-Build Alternative, due to similar VMT amongst the alternatives. In comparing the DSAs, MSAT levels could be higher in some locations than others, but current tools and science are not adequate to quantify them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

**Construction Air Quality.** Provided local ordinances for open burning and dust are followed, significant air quality impacts due to construction of the proposed project are not anticipated. There would also be emissions related to construction equipment and vehicles. However, these impacts related to construction would be temporary. The proposed project would be constructed in phases, limiting the overall construction activity occurring at any one location.

# 1 INTRODUCTION

## 1.1 PROJECT DESCRIPTION

The purpose of the project 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 Program and the North Carolina Intrastate System, while maintaining access to properties along existing US 74. The proposed project would be a new location controlled-access toll facility in the US 74 corridor from I-485 in Mecklenburg County to just west of the Town of Marshville in Union County. **Figure 1** shows the general project location.

The Monroe Connector/Bypass is designated as Projects R-3329 (Monroe Connector) and R-2559 (Monroe Bypass) in the North Carolina Department of Transportation (NCDOT)'s *2009-2015 State Transportation Improvement Program (STIP)*.

There are sixteen new location Detailed Study Alternatives (DSAs) under consideration. Each one is proposed to be a four-lane, new-location toll facility with a 70-foot grassed median. The segments comprising these sixteen DSAs are shown in **Table 1** and **Figures 2a-c**. Generally, there are up to two corridor options in any one area. Combinations of these options comprise the sixteen DSAs.

**TABLE 1: DSA Segments Comprising Each Detailed Study Alternative**

Detailed Study Alternative*	DSA Segments*
A	18A, 21, 22A, 31, 36, 36A, 40
B	18A, 21, 30, 31, 36, 36A, 40
C	2, 21, 22A, 31, 36, 36A, 40
D	2, 21, 30, 31, 36, 36A, 40
A1	18A, 21, 22A, 31, 34, 34B, 40
B1	18A, 21, 30, 31, 34, 34B, 40
C1	2, 21, 22A, 31, 34, 34B, 40
D1	2, 21, 30, 31, 34, 34B, 40
A2	18A, 21, 22A, 31, 36, 36B, 41
B2	18A, 21, 30, 31, 36, 36B, 41
C2	2, 21, 22A, 31, 36, 36B, 41
D2	2, 21, 30, 31, 36, 36B, 41
A3	18A, 21, 22A, 31, 34, 34A, 41
B3	18A, 21, 30, 31, 34, 34A, 41
C3	2, 21, 22A, 31, 34, 34A, 41
D3	2, 21, 30, 31, 34, 34A, 41

\* See **Figures 2a-c** for a map of the Detailed Study Alternatives.

Interchanges currently are proposed at nine to ten locations (depending on the DSA), as listed below from west to east. Unless otherwise noted, each interchange is included in all the DSAs.

- I-485 –partial interchange for Segment 18A (DSAs A, B, A1, B1, A2, B2, A3, and B3)
- Stallings Road (SR 1365) – partial interchange for Segment 18A for movements not provided at I-485 interchange (DSAs A, B, A1, B1, A2, B2, A3, and B3)
- US 74 between Stallings Road and Indian Trail-Fairview Road (DSAs C, D, C1, D1, C2, D2, C3, and D3)
- Indian Trail-Fairview Road (SR 1520)
- Unionville-Indian Trail Road (SR 1367)
- North Rocky River Road (SR 1514)
- US 601
- NC 200 (Morgan Mill Road)
- Austin Chaney Road (SR 1758)
- Forest Hills School Road – partial interchange for movements not provided at the interchange with existing US 74 near Marshville
- Existing US 74 near Marshville – partial interchange

At the western terminus of DSA Segment 18A (DSAs A, A1, A2, A3, B, B1, B2 and B3), the existing I-485/US 74 interchange would be modified to include the Monroe Connector/Bypass as a fifth leg. These DSAs also would include a partial interchange at Stallings Road to provide for movements not provided at the modified I-485/US 74/Monroe Connector/Bypass interchange. These movements are as follows: access to eastbound Monroe Connector/Bypass from westbound US 74, and access from westbound Monroe Connector/Bypass to eastbound US 74.

The western terminus of DSA Segment 2 (DSAs C, C1, C2, C3, D, D1, D2, and D3) starts on US 74 in Mecklenburg County just east of the I-485 interchange. This segment would use existing US 74 for a distance of approximately 4,800 feet (0.9 mile). In this area, a six-lane elevated roadway would be constructed to serve as the Monroe Connector/Bypass, with three-lane, one-way frontage roads adjacent to either side of the Monroe Connector/Bypass to serve as Business 74 and provide access to adjacent properties. The DSAs would then transition to new location as a four-lane, median-divided facility.

At the eastern termini of all the DSAs near Marshville, the Forest Hills School Road partial interchange would provide for the following movements not provided at the interchange with existing US 74: access to westbound Monroe Connector/Bypass from eastbound US 74, and access from eastbound Monroe Connector/Bypass to westbound US 74.

Tolls would be paid through an electronic toll collection (ETC) system. There would be no cash toll booths so no vehicle stopping or idling would occur to collect tolls. The primary means of ETC would involve pre-registration with NCTA and use of a transponder/receiver system. The transponder may be mounted on the windshield of a vehicle. This allows the vehicle to move through the toll-collection locations at highway speeds. The user's account is then debited for the cost of the toll. The North Carolina Turnpike Authority (NCTA) would work with other toll authorities to enable, where possible, other systems' transponders to work on the Monroe

Connector/Bypass. For travelers who do not have a transponder, a video system would capture license plate information and NCTA would bill the vehicle's registrant.

## 1.2 PURPOSE OF THIS MEMORANDUM

This memorandum documents the air quality assessment performed for the project. Air pollutants evaluated include those with a National Ambient Air Quality Standard (NAAQS), mobile source air toxics, and potential air quality impacts from construction activities.

## 2 AIR QUALITY STANDARDS

### 2.1 NATIONAL AMBIENT AIR QUALITY STANDARDS

The federal Clean Air Act of 1970, as amended (42 USC §7401), was enacted for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity.

The US Environmental Protection Agency (EPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants: carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM), and lead (Pb).

**Table 2** lists the National Ambient Air Quality Standards. The primary standards are set at a limit intended to "protect the public health with an adequate margin of safety," and the secondary standards are set at a limit intended to "protect the public welfare from known or anticipated adverse effects (effects to aesthetics, crops, architecture, etc.)" (Federal Clean Air Act 1990: Section 109). The primary standards are established, with a margin of safety, considering long-term exposures for the most sensitive groups in the general population (i.e., children, senior citizens, and people with breathing difficulties). The following sections give descriptions of each of the criteria air pollutants and their standards.

**Carbon Monoxide.** Carbon monoxide (CO) is a colorless, odorless gas resulting from incomplete fuel combustion from both mobile and stationary sources and is the most commonly occurring air pollutant. Transportation accounts for the majority of carbon monoxide emissions (*2001 Ambient Air Quality Report*, NC Division of Air Quality [NC DAQ], 2008).

Carbon monoxide concentrations are generally higher in urbanized areas and are affected by daily and seasonal events. Daily variations in carbon monoxide concentrations are caused by atmospheric heating/cooling patterns. In the morning, cooler, dirtier air can get trapped below warmer, cleaner air in a temperature inversion. As the earth heats up, air near the surface gets warmer and mixes with the air above, promoting better dispersion of air pollutants later in the day. Temperature inversions occur more frequently in late autumn and early winter. Therefore, carbon monoxide concentrations tend to be higher during these months (*2000 Ambient Air Quality Report*, NC DAQ, 2002).

**TABLE 2: National Ambient Air Quality Standards**

Criteria Pollutant	Averaging Time	Standard <sup>(5)</sup>	Standard Type
Carbon Monoxide	8-hour Average <sup>(1)</sup>	9 ppm	Primary
	1-hour Average <sup>(1)</sup>	35 ppm	Primary
Nitrogen Dioxide	Annual Arithmetic Mean	0.053 ppm	Primary and Secondary
Ozone	1-hour Average <sup>(8)</sup>	0.12 ppm	Primary and Secondary
	8-hour Average (1997 Standard) <sup>(6)</sup>	0.08 ppm	Primary and Secondary
	8-hour Average (2008 standard) <sup>(7)</sup>	0.075 ppm	Primary and Secondary
Lead	Quarterly Average	1.5 µg/m <sup>3</sup>	Primary and Secondary
	Rolling 3-month Average <sup>(4)</sup>	0.15 µg/m <sup>3</sup> <sup>(2)</sup>	Primary and Secondary
Particulate Matter <10 micrometers (PM10)	24-hour Average <sup>(3)</sup>	150 µg/m <sup>3</sup>	Primary and Secondary
Particulate Matter <2.5 micrometers (PM2.5)	Annual Arithmetic Mean <sup>(4)</sup>	15 µg/m <sup>3</sup>	Primary and Secondary
	24-hour Average <sup>(5)</sup>	35 µg/m <sup>3</sup>	Primary and Secondary
Sulfur Dioxide	Annual Arithmetic Mean	0.03 ppm	Primary
	24-hour Average <sup>(1)</sup>	0.14 ppm	Primary
	3-hour Average <sup>(1)</sup>	0.50 ppm	Secondary

Source: EPA Web site: [www.epa.gov/air/criteria.html](http://www.epa.gov/air/criteria.html)

<sup>1</sup> The 1-hour average only applies to areas participating in an Early Action Compact. The Charlotte (NC)–Gastonia (NC)–Rock Hill (SC) air quality region is not an Early Action Compact area.

<sup>2</sup> Not to be exceeded more than once per year.

<sup>3</sup> Final rule signed October 15, 2008.

<sup>4</sup> Not to be exceeded more than once per year on average over 3 years.

<sup>5</sup> To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m<sup>3</sup>.

<sup>6</sup> To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m<sup>3</sup> (effective December 17, 2006).

<sup>7</sup> To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)

<sup>8</sup> (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm. (b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as USEPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

On April 30, 1971, the EPA promulgated identical primary and secondary NAAQS for carbon monoxide, set at 9 parts per million (ppm) for the 8-hour average and 35 ppm for the 1-hour average, neither to be exceeded more than once per year (36 FR 8186).

The EPA is conducting a review of the air quality criteria for carbon monoxide and the primary (health-based) NAAQS for carbon monoxide. In August 2008, EPA produced a *Plan for Review of the Primary National Ambient Air Quality Standard for Carbon Monoxide* (EPA Web site, [www.epa.gov/ttn/naaqs/standards/co/data/2008\\_08\\_co\\_naaqs\\_review\\_plan.pdf](http://www.epa.gov/ttn/naaqs/standards/co/data/2008_08_co_naaqs_review_plan.pdf), accessed October 20, 2008). The purpose of the review is to determine whether the current primary NAAQS for carbon monoxide should be retained or revised. The carbon monoxide review schedule, which is subject to change, is as follows:

Integrated Science Assessment (Final)	January 2010
Risk and/or Exposure Assessment (Final)	May 2010
Final Rulemaking	May 2011

**Nitrogen Dioxide.** Several gaseous oxides of nitrogen are normally found in the atmosphere, including nitrous oxide (N<sub>2</sub>O), nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>). Nitrogen dioxide is reddish-brown, but is not usually visible at typical ambient concentrations (*2000 Ambient Air Quality Report*, NC DAQ, 2002).

At typical concentrations, nitrogen dioxide has significant health effects as a pulmonary irritant, and it also affects some types of crops, such as oats, alfalfa, tobacco, peas, and carrots. In North Carolina, another health concern is the formation of ozone, which is promoted by the presence of nitrogen dioxide and other nitrogen oxides (*2000 Ambient Air Quality Report*, NC DAQ, 2002).

On April 30, 1971, the EPA promulgated identical primary and secondary NAAQS for nitrogen oxides (NO<sub>x</sub>), measured as nitrogen dioxide, of 0.053 ppm (100 µg/m<sup>3</sup>) averaged over one year. The primary and secondary nitrogen dioxide standards were reviewed several times, most recently in 2007, and the EPA decided that the existing standards adequately protected against adverse health and welfare effects (*State of the Environment Report 2008*, Mecklenburg County Land Use and Environmental Services Agency [LUESA] Department of Air Quality, Available at the Charlotte-Mecklenburg Web site, [www.charmeck.org/Departments/LUESA/SOER+2008.htm](http://www.charmeck.org/Departments/LUESA/SOER+2008.htm)).

**Ozone.** Ozone (O<sub>3</sub>) is the main component of smog. Since ozone is formed by chemical interactions with sunlight, ozone concentrations are generally higher during the daytime and in late spring through early fall, when temperatures are above 60° F and sunlight is more intense. In North Carolina, the ozone 'season' is April through October (*State of the Environment Report 2008*, Mecklenburg County LUESA). The photochemical reactions that form ozone and nitrogen dioxide require several hours to occur. For this reason, the peak levels of ozone generally occur 6 to 12 miles downwind of a hydrocarbon or nitrogen oxide source. Urban areas as a whole are regarded as sources of ozone precursors, not individual streets and highways. The emissions of all sources in an urban area mix together in the atmosphere, and in the presence of sunlight, the mixture reacts to form ozone, nitrogen dioxide, and other photochemical oxidants (*2000 Ambient Air Quality Report*, NC DAQ, 2002).

In 1997, the NAAQS for ozone was reviewed and revised to reflect improved scientific understanding of the health impacts of this pollutant. When the standard was revised in 1997, an eight-hour ozone standard was established at 0.08 parts per million (ppm). This is the standard by which current attainment designations have been determined.

On March 12, 2008, the EPA strengthened its NAAQS for ground-level ozone, the primary component of smog. The EPA is revising the 8-hour primary ozone standard, designed to protect public health, to a level of 0.075 ppm. The EPA is also strengthening the secondary 8-hour ozone standard to the level of 0.075 ppm, making it identical to the revised primary standard.

In addition to changing the levels of the standards from 0.08 ppm to 0.075 ppm, the EPA is now specifying the level of the standard to the third decimal. An area will meet the revised standards if the three-year average of the annual fourth-highest daily maximum 8-hour average at every ozone monitor is less than or equal to the level of the standard (i.e., 0.075 ppm) (*Fact Sheet-Final Revisions to the National Ambient Air Quality Standards for Ozone*, EPA Web site, <http://www.epa.gov/air/ozonepollution/actions.html#mar07s>, accessed October 8, 2008).

The Clean Air Act requires the EPA to designate areas as attainment (meeting the standards), nonattainment (not meeting the standards), or unclassifiable (insufficient data to classify) after the agency sets a new standard, or revises an existing standard. The following schedule will apply to the revised ozone standards:

- States must make recommendations to the EPA no later than March 2009 for areas to be designated attainment, nonattainment and unclassifiable.
- The EPA will issue final designations of attainment, nonattainment and unclassifiable areas no later than March 2010 unless there is insufficient information to make these designation decisions. In that case, EPA will issue designations no later than March 2011.
- States must submit State Implementation Plans outlining how they will reduce pollution to meet the standards by a date that EPA will establish in a separate rule. That date will be no later than three years after EPA's final designations. If EPA issues designations in 2010, then these plans would be due no later than 2013.
- States are required to meet the standards by deadlines that may vary based on the severity of the problem in the area (*Fact Sheet-Final Revisions to the National Ambient Air Quality Standards for Ozone*, EPA Web site, <http://www.epa.gov/air/ozonepollution/actions.html#mar07s>, accessed October 8, 2008).

**Lead.** Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. The 1990 Clean Air Act Amendments made the sale, supply, or transport of leaded gasoline or lead additives unlawful after December 31, 1995. Because of the phase-out of leaded gasoline, lead concentrations declined sharply during the 1980s and early 1990s. Between 1980 and 2006, concentrations of lead in the air decreased 95 percent, while emissions of lead decreased 97 percent. Automotive sources are no longer major contributors of lead emissions to the atmosphere (Latest Findings on National Air Quality – Status and Trends through 2006, EPA, January 2008). Today, the highest levels of lead in air are usually found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers (EPA Web site, [www.epa.gov/air/lead](http://www.epa.gov/air/lead), accessed October 8, 2008).

On October 15, 2008, EPA substantially strengthened the NAAQS for lead. The revisions will improve health protection for at-risk groups, especially children. EPA revised the level of the primary (health-based) standard from 1.5 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), to 0.15  $\mu\text{g}/\text{m}^3$ , measured as total suspended particulates (TSP). EPA also revised the secondary (welfare-based) standard to be identical in all respects to the primary standard. In conjunction with strengthening the lead NAAQS, the EPA is improving the existing lead monitoring network by requiring monitors to be placed in areas with sources such as industrial facilities that emit one ton or more per year (tpy) of lead and in urban areas with more than 500,000 people.

(EPA Web site, [www.epa.gov/air/lead/pdfs/20081015pbfactsheet.pdf](http://www.epa.gov/air/lead/pdfs/20081015pbfactsheet.pdf), accessed February 19, 2009).

The EPA anticipates the following implementation schedule:

- States make recommendations for areas to be designated attainment, nonattainment, or unclassifiable by October 2009. If tribes choose to submit recommendations, they must also provide them to EPA by October 2009.
- EPA issues final designations of attainment, nonattainment and unclassifiable areas no later than January 2012.
- States submit State Implementation Plans outlining how they will reduce pollution to meet the standards no later than June 2013.
- States are required to meet the standards no later than January 2017 (EPA Web site, [www.epa.gov/air/lead/pdfs/20081015pbfactsheet.pdf](http://www.epa.gov/air/lead/pdfs/20081015pbfactsheet.pdf), accessed February 19, 2009).

**Particulate Matter.** Particle pollution, also called particulate matter or PM, is a complex mixture of extremely small particles and liquid droplets in the air. Particle pollution is the main cause of visibility impairment (EPA Web site, <http://www.epa.gov/pmdesignations/2006standards/documents/2008-12-22/factsheet.htm>, accessed February 19, 2009). Particulate matter also can interfere with plant photosynthesis by forming a film on leaves, which reduces exposure to sunlight (*2000 Ambient Air Quality Report*, NC DAQ, 2002).

Particulate matter is divided into two categories: fine particles (PM<sub>2.5</sub>), which are less than 2.5 micrometers in diameter, and coarse particles (PM<sub>10</sub>), which are less than 10 micrometers in diameter. Fine particles can be emitted directly, such as in smoke from a fire, or they can form from chemical reactions of gases such as sulfur dioxide, nitrogen dioxide and some organic gases. Sources of fine particle pollution (or the gases that contribute to fine particle formation) include power plants, gasoline and diesel engines, wood combustion, high-temperature industrial processes such as smelters and steel mills, and forest fires. Coarse particles generally include dust kicked up by traffic, construction and demolition industries, and biological sources (EPA Web site, <http://www.epa.gov/pmdesignations/2006standards/documents/2008-12-22/factsheet.htm>, accessed February 19, 2009).

The EPA has regulated particulate matter since 1971. The EPA added specific standards for fine particles following its review in 1997. Nationwide monitoring for PM<sub>2.5</sub> began in 1999.

In September 2006, the EPA revised the 1997 standards. The revised 2006 standards address both fine particulates (PM<sub>2.5</sub>) and coarse particulates (PM<sub>10</sub>). The 2006 standards strengthen the 24-hour PM<sub>2.5</sub> standard from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>, and retain the current annual PM<sub>2.5</sub> standard at 15 µg/m<sup>3</sup>. For PM<sub>10</sub>, the EPA retained the 24-hour standard of 150 µg/m<sup>3</sup> and revoked the annual PM<sub>10</sub> standard (EPA Web site, [www.epa.gov/oar/particlepollution/naaqsrev2006.html](http://www.epa.gov/oar/particlepollution/naaqsrev2006.html), accessed October 8, 2008).

The EPA designated areas of attainment/nonattainment for the new 24-hour PM<sub>2.5</sub> standard on December 22, 2008. EPA formally designated the entire state of North Carolina as unclassifiable/attainment, meaning the state meets or is expected to be meeting the standard. The area does not have to take additional steps to meet these standards, but will need to continue working to maintain clean air. (EPA Web site, <http://www.epa.gov/pmdesignations/2006standards/final/region4.htm>, accessed February 19,

2009).

**Sulfur Dioxide.** Sulfur dioxide (SO<sub>2</sub>) is a colorless, corrosive, harmful gas with a pungent odor. Smaller concentrations of sulfur trioxide and other sulfate compounds are also found in sulfur dioxide emissions. Sulfur oxides contribute to the formation of acid rain and the formation of particles that reduce visibility (*2000 Ambient Air Quality Report*, NC DAQ, 2002). Sulfur dioxide also accelerates the decay of building materials and paints. Eighty-seven percent of the sulfur dioxide released into the air is attributable to fuel combustion at stationary sources. Other sources of sulfur dioxide emissions include industrial facilities such as petroleum refineries, cement manufacturing facilities, and metal processing facilities (*Latest Findings on National Air Quality – Status and Trends through 2006*, EPA, January 2008).

On April 30, 1971, the EPA promulgated primary sulfur dioxide NAAQS. These primary standards were set at 0.14 parts per million (ppm) averaged over a 24-hour period, not to be exceeded more than once per year, and 0.030 ppm annual arithmetic mean. Although retained through a number of NAAQS reviews, EPA initiated another review of the sulfur oxides standards in May 2006. The proposed rule is anticipated in July 2009, with final rulemaking in March 2010 (*Integrated Plan for Review of the Primary NAAQS for Sulfur Oxides*, EPA, October 2007).

## 2.2 TRANSPORTATION CONFORMITY

**Background.** Section 176(c) of the Clean Air Act Amendments (42 USC 7506(c)) requires that transportation plans, programs, and projects conform to the intent of the State Implementation Plan (SIP). Conformity requirements apply to transportation plans, programs, and projects funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA) in areas that do not meet, or previously have not met, NAAQS for ozone, carbon monoxide, particulate matter, or nitrogen dioxide (*Fact Sheets on Highway Provisions*, FHWA Web site: [www.fhwa.dot.gov/safetealu/factsheets/conformity.htm](http://www.fhwa.dot.gov/safetealu/factsheets/conformity.htm)).

In North Carolina, the NC Department of Environment and Natural Resources, Division of Air Quality (NC DAQ) develops the SIP, which is the document that describes how North Carolina will maintain or achieve compliance with the NAAQS in nonattainment and maintenance areas.

EPA has issued regulations implementing the transportation conformity requirements (40 CFR Part 93). The transportation conformity regulations are intended to ensure that a state does not undertake federally funded or approved transportation plans, programs, or projects that are inconsistent with the State's obligation to meet and maintain the NAAQS.

Under the transportation conformity regulations, a transportation conformity determination is required every time a Metropolitan Planning Organization (MPO) approves an update or amendment to its long range transportation plan (LRTP) and transportation improvement program (TIP). Under federal law, an MPO must “**update**” its LRTP and TIP at least once every four years. In addition, an MPO may choose to “**amend**” the LRTP and TIP more frequently. Typically, there are multiple amendments within each four-year update cycle. A **regional conformity determination** is needed for each update and amendment to an LRTP and TIP. The regional conformity determination is based on a region-wide analysis of projected emissions from all existing facilities and projects in the LRTP and TIP.

In addition to the regional conformity determination for LRTPs and TIPs, FHWA also must make a **project-level conformity determination**. For all pollutants, a project-level conformity determination can be made only if the project is included in a conforming LRTP and TIP. In addition, for carbon monoxide (CO) and particulate matter (PM), a project-level conformity finding requires a localized conformity analysis, known as a “hot-spot” analysis.

**Regional Conformity Analysis.** To demonstrate conformity at the regional level, an MPO in a nonattainment or maintenance area must show that expected emissions from their LRTP and TIP are within the mobile vehicle emission budgets in the applicable SIP. If there is no approved SIP, the MPO must apply an “interim emissions test” – which requires, in essence, a finding that emissions will be no greater with the proposed improvements in the LRTP/TIP than they would be without those improvements.

**Project-Level (“Hot-Spot”) Conformity Analysis.** As noted above, all projects in nonattainment and maintenance areas must come from a conforming LRTP and TIP. In addition, in CO and PM nonattainment and maintenance areas, localized (or microscale) analysis may be necessary to determine project-level transportation conformity for federally funded or approved highway and transit projects. These projects must come from a currently conforming transportation plan/program. This type of analysis is sometimes referred to as “hot-spot analysis” (Transportation Conformity, FHWA Web site: [www.fhwa.dot.gov/environment/conformity/con\\_broc.htm](http://www.fhwa.dot.gov/environment/conformity/con_broc.htm)). For this project, the only hot-spot analysis required is for CO in Mecklenburg County, since Mecklenburg County is a CO maintenance area.

## 2.3 MOBILE SOURCE AIR TOXICS

The Clean Air Act identified 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list of toxics and has selected a group of 21 that it considers mobile source air toxics (MSATs). More recently, the EPA has extracted a subset of this list of 21 and developed what it now labels the six priority MSATs. These are benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1,3-butadiene. While EPA has identified these as the more significant MSATs, the agency has not proposed to establish ambient standards for any of these pollutants. (*Memorandum – Interim Guidance on Air Toxic Analysis in NEPA Documents, Appendix D, FHWA, February 3, 2006*).

The EPA issued a final rule on *Control of Emissions of Hazardous Air Pollutants from Mobile Sources* in March 2001 under provisions of the Clean Air Act requiring the EPA to characterize, prioritize, and control these emissions as appropriate. In addition to highlighting the 21 MSATs, the final rule summarized the mobile sources contribution to national inventories of hazardous air pollutants. Since MSATs can be loosely defined as volatile organic compounds, nonvolatile organics, diesel particulate matter/diesel exhaust gases, or metals, the linkage with transportation vehicles and fuels is direct (*Memorandum – Interim Guidance on Air Toxic Analysis in NEPA Documents, Appendix D, FHWA, February 3, 2006*).

On February 9, 2007, under authority of CAA Section 202(l), EPA signed a final rule to fulfill a commitment from the 2001 rule. This final rule, *Control of Hazardous Air Pollutants from Mobile Sources*, sets standards to control MSATs from motor vehicles. Under this rule, EPA is setting standards on fuel composition, vehicle exhaust emissions, and evaporative losses from portable containers. The new standards are estimated to reduce total emissions of MSATs by 330,000 tons in 2030, including 61,000 tons of benzene. Concurrently, total emissions of volatile

organic compounds (VOC) will be reduced by over 1.1 million tons in 2030 as a result of adopting these standards.

## 2.4 LOCAL ORDINANCES

Union County does not have any ordinances related to air quality. Mecklenburg County has an Air Pollution Control Ordinance (MCAPCO). Sections of the ordinance applicable to transportation sources include:

- Article 1 – Permitting Provisions for Air Pollution Sources, Rules and Operating Regulations for Acid Rain Sources, Title V, and Toxic Air Pollutants
  - Section 1.5600 – Transportation Facility Procedures
- Article 2 – Air Pollution Control Regulations and Procedures
  - Section 2.2000 – Transportation Conformity
  - Section 2.0800 – Transportation Facilities

Transportation sources subject to permitting as a transportation facility are defined in the ordinance as airport facilities (excluding military airfield) and parking facilities. The ordinance section on highway projects (Article 2, Section 2.0803) was repealed effective February 1, 2005.

Section 2.2000 of the ordinance, addressing transportation conformity, states in Subsection 2003(a) that “Conformity analyses, determinations, and redeterminations for transportation plans, transportation improvement programs, FHWA/FTA projects, and State or local regionally significant projects shall be made according to the requirements of 40 CFR 93.104 and shall comply with the applicable requirements of 40 CFR 93.119, 93.120, 93.124, 93.125, and 93.126.”

The MCAPCO also has applicable general provisions for nuisance dust (Section 1.5108) and open burning (Section 1.5106).

**Appendix A** includes the MCAPCO sections cited above and correspondence with the Mecklenburg County Department of Air Quality. The correspondence with the Mecklenburg County Department of Air Quality was in relation to the Gaston East-West Connector (STIP Project U-3321) in Gaston and Mecklenburg Counties, but the non-project specific information also is applicable to the Monroe Connector/Bypass.

## 3 EXISTING CONDITIONS

### 3.1 CRITERIA POLLUTANTS

Pollutants that have a NAAQS are called criteria pollutants. An area that exceeds the NAAQS for one or more criteria pollutants is said to be in "nonattainment" of the NAAQS enforced under the Clean Air Act. The designation of an area is determined on a pollutant by pollutant basis. The EPA classifies areas as either in attainment, nonattainment, or maintenance. A maintenance area is an urban area that has exceeded NAAQS levels for one or more pollutants in the past. Efforts in these maintenance areas must be made in order to maintain the status quo

and not exceed the NAAQS (EPA Web site, [www.epa.gov/oar/oaqps/greenbk](http://www.epa.gov/oar/oaqps/greenbk), accessed October 8, 2008). Ozone, carbon monoxide, and some particulate matter nonattainment areas are further classified based on the degree of exceedance(s) over the NAAQS (e.g. marginal, moderate, serious, severe, and extreme).

The proposed project is located in Union County and Mecklenburg County, which are within the Charlotte (NC)-Gastonia (NC)-Rock Hill (SC) air quality region (also referred to as the Metrolina region). The following paragraphs discuss the attainment status of this region with respect to each of the six criteria pollutants.

**Carbon Monoxide.** Except for Mecklenburg County, all other areas within the Charlotte-Gastonia-Rock Hill air quality region are designated as attainment for carbon monoxide. Mecklenburg County is a maintenance area for carbon monoxide (EPA Web site, [www.epa.gov/oar/oaqps/greenbk](http://www.epa.gov/oar/oaqps/greenbk), accessed September 26, 2008).

The *State of the Environment Report 2008* (Mecklenburg County LUESA) provides some background information and history relative to the designation:

“Mecklenburg County was designated a nonattainment area for carbon monoxide in March 1978. During the period from 1974-1984 the carbon monoxide NAAQS was often exceeded more than 10 times per year....The number of exceedances per year fell dramatically beginning in the early to mid 1980s....The last recorded exceedances of the carbon monoxide standard in the Mecklenburg County network were measured in 1990. Automotive emission controls found on newer vehicles are the main factor accounting for the reduction in carbon monoxide concentrations.”

**Ozone.** On April 14, 2006, the Charlotte-Gastonia-Rock Hill air quality region was designated as a moderate nonattainment area for the 8-hour ozone NAAQS (EPA Web site, [www.epa.gov/oar/oaqps/greenbk](http://www.epa.gov/oar/oaqps/greenbk), accessed September 26, 2008). This nonattainment region is shown in **Figure 3**. It includes the following counties in North Carolina: Mecklenburg, Gaston, Lincoln, Cabarrus, Rowan, Union, and southern portion of Iredell. The urbanized area of eastern York County, SC also is included.

Compliance with the ozone standard is required by June 15, 2010. The SIP for ozone for this region submitted to EPA by DAQ projects that the eight-hour ozone standard will be met by this time (*State of the Environment Report 2008*, Mecklenburg County LUESA).

The Charlotte-Gastonia-Rock Hill region is a “NO<sub>x</sub> limited” area. “This means that the area needs to control nitrogen oxides emissions to reduce ozone formation effectively. The major sources of nitrogen oxides emissions in the region come from mobile sources and electric generating facilities. Reduction of emissions from these two source sectors can significantly influence the ozone formation in this region. The SIP for the region includes the following control measures:” (*State of the Environment Report 2008*, Mecklenburg County LUESA):

- 15 percent volatile organic compound (VOC) Reasonable Further Progress (RFP) Plan
- VOC and NO<sub>x</sub> Reasonably Available Control Technology (RACT)
- Reasonably Available Control Measures (RACM)
- Motor Vehicle Inspection and Maintenance programs (I/M)

- Federal Emission Standards for highway vehicles and non-road equipment
- Fuel Standards
- Industrial NO<sub>x</sub> emission reductions required by federal and state control initiatives such as the NO<sub>x</sub> SIP call, Clean Air Interstate Rule, and NC Clean Smokestacks Act

In 2007, the eight-hour ozone design value measured in the Mecklenburg County monitoring network was 0.093 ppm, compared to the current standard of 0.08 ppm (the 1997 standard of 0.08 ppm will remain in effect while EPA undertakes rulemaking to transition to the 2008 standard of 0.075 ppm). This is the highest design value determined since the 2004 designation year, but less than the concentrations measured in 1987. Mecklenburg County experienced 19 days when the ozone NAAQS was exceeded in 2007, the most days measured above the eight-hour standard since 2002 (*State of the Environment Report 2008*, Mecklenburg County LUESA).

As described in **Section 2.1**, meteorological conditions are an important factor in ozone formation. According to the *State of the Environment Report 2008* (Mecklenburg County LUESA, p.23):

“The year 2007 was the sixth-warmest summer (June-August) in North Carolina in the period from 1987 to 2007. 2007 was also the second driest summer (June-August) in North Carolina in the period from 1987 to 2007. These two pieces of information would indicate that conditions may have been particularly favorable for ozone formation in the summer of 2007; especially in August 2007, when the highest eight-hour concentration (0.127 ppm) of the year was measured. That measurement was the highest eight-hour concentration measured since 1988. Data from 2007 would seem to indicate that the potential for the formation of unhealthy concentrations of ozone at ground-level continues to exist when conditions are optimal.”

**Particulate Matter.** The Charlotte-Gastonia-Rock Hill air quality region is in attainment for all particulate matter NAAQS (EPA Web site, [www.epa.gov/oar/oaqps/greenbk](http://www.epa.gov/oar/oaqps/greenbk), accessed September 26, 2008).

Recent measured concentrations are close to the standards. In 2006, the 24-hour PM<sub>2.5</sub> value for the region was 32 µg/m<sup>3</sup>, just below the new 24-hour PM<sub>2.5</sub> standard of 35 µg/m<sup>3</sup> established in 2006. In 2007, the annual value for the region was 14.9 µg/m<sup>3</sup>, just under the annual standard of 15 µg/m<sup>3</sup> (*State of the Environment Report 2008*, Mecklenburg County LUESA).

Evaluation of PM<sub>2.5</sub> monitoring data indicates that sulfate, the condensate of SO<sub>2</sub>, is one major contributor to PM<sub>2.5</sub> formation in the southeast United States. Controlling SO<sub>2</sub> emission sources in this region may reduce PM<sub>2.5</sub> concentrations in Mecklenburg County (*State of the Environment Report 2008*, Mecklenburg County LUESA).

**Nitrogen Dioxide.** The Charlotte-Gastonia-Rock Hill air quality region is in attainment for the nitrogen dioxide NAAQS (EPA Web site, [www.epa.gov/oar/oaqps/greenbk](http://www.epa.gov/oar/oaqps/greenbk), accessed September 26, 2008).

On March 10, 2005, EPA issued the Clean Air Interstate Rule (CAIR), a rule that will achieve the largest reduction in air pollution in more than a decade. CAIR will permanently cap emissions of

sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) in the eastern United States. CAIR achieves large reductions of sulfur dioxide and/or nitrogen oxides emissions across 28 eastern states (including North Carolina) and the District of Columbia. When fully implemented, CAIR will reduce sulfur dioxide emissions in these states by over 70 percent, and nitrogen oxides emissions by over 60 percent, from 2003 levels (EPA Web site, [www.epa.gov/air/interstateairquality/](http://www.epa.gov/air/interstateairquality/), accessed October 8, 2008).

On July 11, 2008, the D.C. Circuit vacated EPA's CAIR. However, on September 24, 2008, the United States filed a petition for rehearing in the CAIR case (EPA Web site, [www.epa.gov/air/interstateairquality/](http://www.epa.gov/air/interstateairquality/), accessed October 8, 2008).

**Sulfur Dioxide.** The Charlotte-Gastonia-Rock Hill air quality region is in attainment for the sulfur dioxide NAAQS (EPA Web site, [www.epa.gov/oar/oaqps/greenbk](http://www.epa.gov/oar/oaqps/greenbk), accessed September 26, 2008).

**Lead.** The Charlotte-Gastonia-Rock Hill air quality region is in attainment for the lead NAAQS (EPA Web site, [www.epa.gov/oar/oaqps/greenbk](http://www.epa.gov/oar/oaqps/greenbk), accessed September 26, 2008).

### 3.2 MOBILE SOURCE AIR TOXICS

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards (NAAQS), EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

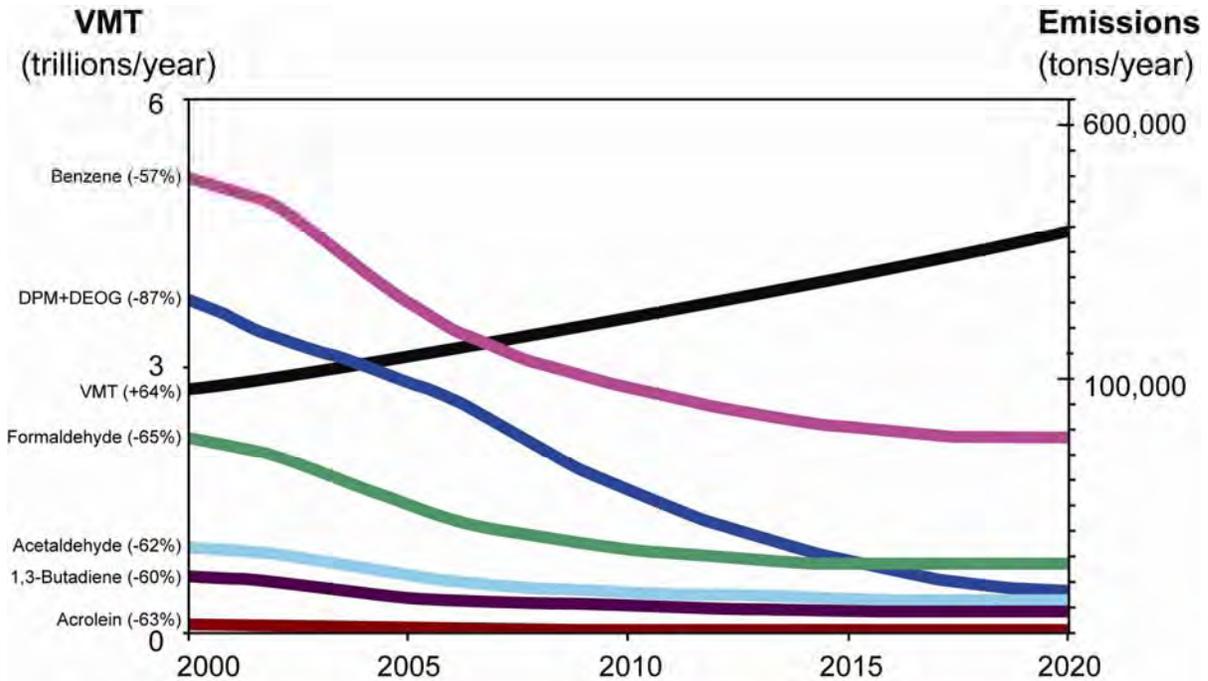
Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on *Controlling Emissions of Hazardous Air Pollutants from Mobile Sources* (66 CFR 17229) (March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent, as shown in **Chart 1**.

On February 9, 2007 and under authority of CAA Section 202(l) EPA signed a final rule, *Control of Hazardous Air Pollutants from Mobile Sources*, which sets standards to control MSATs from motor vehicles. Under this rule, EPA is setting standards on fuel composition, vehicle exhaust emissions, and evaporative losses from portable containers. The new standards are estimated to reduce total emissions of MSATs by 330,000 tons in 2030, including 61,000 tons of benzene. Concurrently, total

emissions of volatile organic compounds (VOC) will be reduced by over 1.1 million tons in 2030 as a result of adopting these standards.

**Chart 1. Vehicle Miles Traveled (VMT) vs. Mobile Source Air Toxics Emissions, 2000-2020**



Notes: For on-road mobile sources. Emissions factors were generated using MOBILE6.2. MTBE proportion of market for oxygenates is held constant, at 50%. Gasoline RVP and oxygenate content are held constant. VMT: Highway Statistics 2000, Table VM-2 for 2000, analysis assumes annual growth rate of 2.5%. "DPM + DEOG" is based on MOBILE6.2-generated factors for elemental carbon, organic carbon and SO4 from diesel-powered vehicles, with the particle size cutoff set at 10.0 microns. 1 short ton = 907,200,000 mg.

## 4 AIR QUALITY IMPACTS

### 4.1 CRITERIA POLLUTANTS AND TRANSPORTATION CONFORMITY

Traffic exhaust is the center of concern when determining the air quality impacts of a new roadway facility or the improvement of an existing roadway facility. Transportation is a primary contributor to four of the six criteria pollutants: ozone (through emissions of nitrogen oxides and hydrocarbons), carbon monoxide, particulate matter, and nitrogen dioxide (*Air Quality Planning for Transportation Officials*, FHWA Web site, [www.fhwa.dot.gov/environment/aqplan/index.htm](http://www.fhwa.dot.gov/environment/aqplan/index.htm), accessed October 8, 2008). The impacts resulting from highway construction can range from intensifying existing air pollution to improving the ambient air conditions.

The criteria pollutants of concern in the project area are ozone for Mecklenburg and Union Counties, and carbon monoxide for Mecklenburg County. The Charlotte-Gastonia-Rock Hill air quality region (which includes Union County and Mecklenburg County) is a moderate nonattainment region for ozone, and Mecklenburg County is a maintenance area for carbon monoxide.

Traffic exhaust contributes to ozone formation by emitting hydrocarbons and nitrogen oxides, which are carried into the atmosphere where they react with sunlight to form ozone and nitrogen dioxide. Automotive emissions of hydrocarbons and nitrogen oxides are expected to decrease in the future due to continued installation and maintenance of pollution control devices on new vehicles. However, these technological improvements may be offset by the increasing number of vehicles on the transportation facilities in the area. Since ozone takes several hours to form from hydrocarbons and nitrogen oxide, urban areas as a whole are regarded as sources of ozone precursors, not traffic on individual streets and highways. Therefore, compliance of an individual project with the ozone NAAQS is demonstrated if the project is included in a conforming transportation plan, which considers the urban area as a whole.

Carbon monoxide is a more stable atmospheric pollutant (meaning it does not react as quickly with other chemicals) that is emitted directly from tailpipes. Therefore, localized concentrations of carbon monoxide can occur, and these concentrations can be estimated through modeling. As discussed below, the compliance of a project with the carbon monoxide NAAQS, therefore, is considered at both the localized, or hot-spot, level, and at the transportation plan level.

**Localized Carbon Monoxide Hot-Spot Analysis.** In accordance with 40 CFR 93.116, an FHWA project must not cause or contribute to any new localized carbon monoxide violations, or increase the frequency or severity of any existing carbon monoxide violations in carbon monoxide nonattainment and maintenance areas. A quantitative hot-spot analysis is required in the following cases:

- (i) For projects in or affecting locations, areas, or categories of sites which are identified in the applicable implementation plan as sites of violation or possible violation;
- (ii) For projects affecting intersections that are at Level of Service D, E, or F, or those that will change to Level of Service D, E, or F because of increased traffic volumes related to the project;
- (iii) For any project affecting one or more of the top three intersections in the nonattainment or maintenance area with highest traffic volumes, as identified in the applicable implementation plan; and
- (iv) For any project affecting one or more of the top three intersections in the nonattainment or maintenance area with the worst level of service, as identified in the applicable implementation plan (40 CFR 93.123).

The portions of the DSAs in Union County do not need to be considered for a carbon monoxide hot-spot analysis since Union County is classified as an attainment area for carbon monoxide.

As discussed below, it is concluded that the project would not cause or contribute to any new localized carbon monoxide violations or increase the frequency or severity of any existing carbon monoxide violations in the Mecklenburg County carbon monoxide maintenance area since none of the DSAs fit the above criteria (i-iv) requiring a quantitative carbon monoxide hot-spot analysis.

**Criterion ii.** Each of the DSAs uses one of two corridor segments at the western end of the project: DSA Segment 18A or DSA Segment 2 (**Figures 2a-c**). Both segments extend a short distance into Mecklenburg County.

**Figure 4** shows the engineering designs in DSA Segment 18A, which is included in DSAs A, A1, A2, A3, B, B1, B2, and B3. The designs include modifications to all quadrants of the existing I-485/US 74 interchange.

**Figure 5** shows the engineering designs in DSA Segment 2, which is included in DSAs C, C1, C2, C3, D, D1, D2, and D3. The proposed designs would make improvements to US 74 east of I-485.

None of the DSAs would directly affect any intersections in Mecklenburg County. The nearest signalized intersection in Mecklenburg County is the US 74 (Independence Boulevard)/Matthews-Mint Hill Road intersection, located approximately 4,200 feet west of the I-485 mainlines (**Figure 2a**). Year 2035 traffic volumes on US 74 west of I-485 are projected to be lower with the proposed project than under the No-Build Alternative. Annual average daily traffic volumes (AADT) on US 74 west of I-485 are projected to be:

- 101,700 AADT under the No-Build Alternative
- 94,300 AADT under DSAs A, A1, A2, A3, B, B1, B2, and B3
- 96,100 AADT under DSAs C, C1, C2, C3, D, D1, D2, and D3

Year 2035 traffic projections are included in **Appendix D** (*Traffic Forecast for TIP Projects R-3329 & R-2559 Monroe Connector/Bypass*, Wilbur Smith Associates, September 2008). Since traffic volumes at the US 74 (Independence Boulevard)/Matthews-Mint Hill Road intersection would be less under any of the DSAs, none would negatively impact the operation of this intersection.

Therefore, the DSAs would not negatively affect any intersections in Mecklenburg County, nor would they cause a change to Level of Service D, E, or F because of increased traffic volumes related to the project.

*Criteria i, iii and iv.* The project would not affect any locations identified in the SIP as sites of violation or possible violation (criterion (i)). The last recorded exceedance of the CO NAAQS in Mecklenburg County occurred in 1990 and there have been no exceedances since then (*State of the Environment Report 2008*, Mecklenburg County LUESA). The applicable implementation plan (SIP) does not contain a list of intersections as noted in criteria (iii) and (iv) above. However, there is a list of high congestion locations in Mecklenburg County available from the Charlotte Department of Transportation (CDOT) (CDOT Web site, <http://www.charmeck.org/departments/transportation/roads/home.htm>, accessed September 29, 2008). This list, included in **Appendix B**, is for 2005 and includes 65 intersections. The top three intersections were: 1) Fairview Road/ Providence Road/Sardis Road, 2) Central Avenue/Eastway Drive, and 3) Harris Boulevard/Tryon Street/US 29 North. None of these three intersections are located in the project area. The nearest intersection, US 74 (Independence Boulevard)/Matthews-Mint Hill Road, is not on the list. Based on the list, it was concluded that the proposed DSAs would not affect sites of carbon monoxide violation or possible violation, nor any of the top three intersections in the maintenance area with the highest traffic volumes or worst level of service.

Based upon the discussion above, it is concluded that the project would not cause or contribute to any new localized carbon monoxide violations or increase the frequency or severity of any existing carbon monoxide violations since none of the DSAs fit the criteria requiring a quantitative carbon monoxide hot-spot analysis. This conformity determination meets all of the applicable Clean Air Act section 176(c) requirements for federally funded or approved transportation projects.

Specifically, the requirements for CO hot-spot analysis are codified at 40 CFR 93.116 and 93.123. By meeting these regulatory requirements as well as other requirements in the conformity regulations, this conformity determination demonstrates compliance with the requirements of CAA section 176(c)(1).

**Conformity Determinations for LRTPs and TIPs in Metrolina Region.** The Monroe Connector/Bypass project is located in the Charlotte-Gastonia-Rock Hill air quality region (Metrolina region). The Metrolina region includes four MPOs: the Gaston Urban Area MPO, the Mecklenburg-Union MPO (MUMPO), the Cabarrus-Rowan MPO in North Carolina, and the Rock Hill-Fort Mill MPO in South Carolina. The Monroe Connector/Bypass is located within the boundaries the MUMPO. Therefore, this section focuses primarily on the conformity status of the MUMPO area.

Each of the MPOs in the Metrolina region has its own LRTP and TIP, but air quality emissions analyses are completed for the region as a whole. Therefore, amendments and updates to the LRTPs and TIPs are often approved simultaneously (or close in time to one another) based on a single regional emissions analysis.

For the Monroe Connector/Bypass project, transportation conformity determinations are required for two pollutants: **ozone** and **carbon monoxide**. The conformity requirements apply to these pollutants because the Metrolina region as a whole is designated as a nonattainment area for the 1997 8-hour ozone standard and Mecklenburg County is designated as a maintenance area for carbon monoxide. See **Section 3.1** above.

**Conformity Determinations for LRTPs.** MUMPO currently has an approved LRTP with a horizon year of 2030, which was adopted on April 20, 2005. A conformity determination for this LRTP update was made on June 8, 2005, and FHWA and FTA issued the conformity finding (approval of the conformity determination) on June 30, 2005.<sup>1</sup> Since that time, there have been two amendments to the 2030 LRTP for MUMPO.

- Amendment 1 is dated September 16, 2005, with a FHWA/FTA conformity finding on October 1, 2005.
- Amendment 2, the latest conformity determination, is dated May 25, 2007, with a FHWA/FTA conformity finding on June 29, 2007. **Appendix C** includes the Amendment 2 Conformity Analysis and Determination Report, and the part of Appendix D of the report pertaining to Union and Mecklenburg Counties.

MUMPO is required to complete an update to their LRTP within four years after the most recent update. Therefore, the next update for the MUMPO LRTP must be approved by May 3, 2009. MUMPO is currently conducting travel demand modeling and air quality analyses to demonstrate conformity. Because the region does not have an approved SIP, the conformity analyses for the 2030 MUMPO LRTP are based on the “interim emissions test” – which, as noted above, requires a demonstration that emissions with the proposed improvements will be no greater than emissions without those improvements. MUMPO is currently exploring a range of

<sup>1</sup>The June 8, 2005 conformity determination for the Metrolina Region is titled: *Conformity Analysis and Determination Report for the Cabarrus-Rowan MPO, the Gaston Urban Area MPO, and the Mecklenburg-Union MPO 2030 Long Range Transportation Plans and the FY 2007–2013 State Transportation Improvement Programs and for Non-MPO Areas of Lincoln County, Iredell County, Gaston County, and Union County Areas*. A copy of this determination is included in the project file.

options for demonstrating conformity for the LRTP. These options include adjusting the mix of new projects included in the LRTP and alternative modeling methods to demonstrate conformity.

**Conformity Determinations for TIPs.** MUMPO currently has an approved TIP covering the years 2009 through 2015. The 2009–2015 TIP is a direct subset of the respective conforming 2030 LRTP. The FHWA and FTA approved a conformity determination for the MUMPO 2009–2015 TIP on July 11, 2008.<sup>2</sup> The current TIP is valid for four years. Therefore, an update to MUMPO’s 2009–2015 TIP is required by July 2012.

**Potential for “Conformity Lapse Grace Period.”** As noted above, MPOs are required to update LRTPs and TIPs at least once every four years. MUMPO is currently working to complete their LRTP update by the applicable deadline. The update can be completed only if conformity findings are made by the deadline. If MUMPO is not able to demonstrate conformity by the applicable deadline, it will enter a status known as a “conformity lapse grace period” (CLGP). Specifically, MUMPO would enter a CLGP on May 3, 2009, if the required conformity findings are not made by that date. During a CLGP, the MPO would not be allowed to approve any amendments to the LRTP or TIP. However, the existing 2009–2015 TIP would remain in effect during the CLGP. Projects in a conforming TIP are allowed to proceed during the CLGP.

**Potential for a “Conformity Lapse.”** The CLGP would last for one year. If a CLGP occurs and an update to the LRTP has not been approved by the end of that year, the region would enter a status known as a “conformity lapse.” During a conformity lapse, no federal approvals may be granted and the use of federal funds is halted. The only projects that could proceed during this period are projects that are exempt from transportation conformity (e.g., road resurfacing, safety projects, bicycle and pedestrian facilities, etc), transportation control measures that are in an approved SIP, and project phases that were approved prior to the start of the lapse (for example, ongoing studies).

**Implications for Monroe Connector/Bypass.** Federal and state transportation and environmental agencies are working collaboratively in an effort to avoid a CLGP and a conformity lapse. If those events occur, they would not necessarily prevent NCTA from proceeding with ongoing work in the NEPA process, but they could delay FHWA’s signing of the ROD. FHWA and NCTA will provide an updated summary of the region’s conformity status in the Final Environmental Impact Statement (FEIS).

**Status of State Implementation Plan (SIP) for Metrolina Region.** The Clean Air Act requires North Carolina to submit a SIP by June 15, 2007, that describes how the state will attain the ozone standard by June 15, 2010, which is the statutory deadline for achieving attainment. The NC DAQ submitted a proposed SIP for the ozone standard to EPA on June 15, 2007. On November 17, 2008, EPA sent a letter to NC DAQ stating that the proposed SIP did not demonstrate that the ozone standard would be achieved by the June 15, 2010 deadline. Therefore, EPA recommended that North Carolina seek voluntary reclassification of its portion of the region from “moderate” to “serious” nonattainment status, which would extend the attainment deadline. EPA noted that if North Carolina did not take this action, EPA would disapprove the SIP (letter included in **Appendix E**).

<sup>2</sup> Conformity findings also are required for the so-called “donut area” of Union County, which is outside the MPO boundaries but is included within the ozone nonattainment area. Projects in the Union County donut area are included in NCDOT’s 2009–2015 STIP and also have been found to conform. The USDOT made a Transportation Conformity Determination on the *2009–2015 STIP* on July 11, 2008.

On December 19, 2008, NCDAQ sent a letter to EPA requesting that the previously submitted SIP be withdrawn and explained that NCDAQ intended to submit an updated SIP by November 2009, demonstrating attainment of the ozone standard by the June 15, 2010 deadline (letter included in **Appendix E**). The EPA responded to NCDAQ in a letter dated January 9, 2009 stating that EPA was making a “finding of failure to submit” a SIP (letter included in **Appendix E**). This action would be effective when published in the Federal Register.

EPA’s finding of “failure to submit” a SIP does not trigger any immediate consequences for this project. However, if NCDAQ does not submit a complete SIP within 24 months from publication of this finding in the Federal Register, then a penalty known as “highway sanctions” would apply in accordance with 40 CFR 52.31. Under highway sanctions, federal transportation funds to the region would be cut off until the required SIP submittal is made. While highway sanctions are possible, it is unlikely that they would occur. NCDAQ has stated that it intends to submit a revised SIP in November 2009 for EPA approval. NCDAQ has also stated that, if the revised SIP is not approved, the State would seek reclassification of the region to “serious” nonattainment status, which would extend the attainment deadline and avoid the highway sanctions. So, even if the revised SIP is not approved, there are actions that the State can take to avoid highway sanctions.

In conclusion, the Metrolina region continues to face challenges in meeting the complex and stringent requirements of federal air quality laws. These requirements do not prevent ongoing studies from continuing, but they have the potential to delay federal approval of transportation projects in the region. To prevent such delays, federal and state air quality and transportation agencies are continuing to work together to resolve the air quality issues so that planned transportation projects can move forward.

**Project-Level Conformity.** The DSAs for the project are generally consistent with the project descriptions (freeway) and project lengths (approximately 20 miles total) included in the LRTP. The only inconsistency in the current LRTP is that the Monroe Bypass portion of the project (R-2559) is shown as a non-toll facility. The Monroe Connector/Bypass project is currently being studied only as a toll facility. Therefore, the updated LRTP and conformity determination will need to show the Monroe Bypass portion of the project as a toll facility. The selection of the No-Build Alternative would require the MUMPO LRTP to be updated to remove the proposed Monroe Connector and Monroe Bypass.

## 4.2 MOBILE SOURCE AIR TOXICS

The following discussion is based on guidance in FHWA’s *Memorandum – Interim Guidance on Air Toxic Analysis in NEPA Documents* (February 3, 2006).

### 4.2.1 Unavailable Information for Project Specific MSAT Impact Analysis

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

**Information that is Unavailable or Incomplete.** Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements; including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

- **Emissions:** The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model--emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Also, the emissions rates used in MOBILE 6.2 for both particulate matter and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, EPA has identified problems with MOBILE6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

- **Dispersion.** The tools to predict how MSATs disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The National Cooperative Highway Research Program (NCHRP) is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.
- **Exposure Levels and Health Effects.** Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are

difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unworkable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

**Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs.** Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the EPA conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or state level.

The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at [www.epa.gov/iris](http://www.epa.gov/iris). The following toxicity information for the six prioritized MSATs was taken from the IRIS database *Weight of Evidence Characterization* summaries. This information is taken verbatim from EPA's IRIS database and represents the agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust (DE)** is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.

- **Diesel exhaust** also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot-spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes, particularly respiratory problems<sup>3,4</sup>. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

**Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of Impacts Based upon Theoretical Approaches or Research Methods Generally Accepted in the Scientific Community.**

Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.). Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

In this technical memorandum, FHWA has provided a qualitative analysis of MSAT emissions relative to the various alternatives, and has acknowledged that all Detailed Study Alternatives may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

<sup>3</sup> South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 Studies on the relationship between health and air quality; NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein.

<sup>4</sup> Department of Preventive Medicine, University of Southern California Los Angeles, et. al. *Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study.* The Lancet, (2007).

#### 4.2.2 Qualitative Impact Assessment for Mobile Source Air Toxics

The FHWA has developed a tiered approach for analyzing MSATs in NEPA documents. Depending on the specific project circumstances, FHWA has identified three levels of analysis (*Memorandum – Interim Guidance on Air Toxic Analysis in NEPA Documents*, FHWA, February 3, 2006):

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

Projects requiring a quantitative analysis include projects that have the potential for meaningful differences among project alternatives. To fall into this category, projects must:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location; or
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the annual average daily traffic volumes (AADT) are projected to be in the range of 140,000 to 150,000, or greater, by the design year; and also
- Be proposed to be located in proximity to populated areas or in rural areas, in proximity to concentrations of vulnerable populations (i.e., schools, nursing homes, hospitals).

The proposed project falls into the qualitative analysis category due to its length and regional importance. The project would not qualify as requiring a quantitative analysis because it would not significantly alter a major intermodal facility, nor would the AADT be in the range of 140,000 to 150,000.

The traffic volumes for the DSAs vary between proposed interchanges. **Table 3** shows the 2035 annual average traffic volume (AADT) forecasts for the DSAs (*Traffic Forecast for TIP Projects R-3329 & R-2559 Monroe Connector/Bypass*, Wilbur Smith Associates, September 2008). The highest traffic volumes would be 95,600 AADT under DSAs C, C1, C2, C3, D, D1, D2, and D3, in the area where these DSAs would improve a segment of existing US 74.

**TABLE 3: Year 2035 Traffic Projections Along Monroe Connector/Bypass**

Project Segment	Annual Average Daily Traffic (AADT)	
	DSAs A, A1, A2, A3 B, B1, B2, B3	DSAs C, C1, C2, C3 D, D1, D2, D3
I-485 to Stallings Rd	41,400	95,600
Stallings Rd to Indian Trail-Fairview Rd	49,100	48,200
Indian Trail-Fairview Rd to Unionville-Indian Trail Rd	50,700	51,200
Unionville-Indian Trail Rd to N Rocky River Rd	51,500	52,300
N Rocky River Rd to US 601	46,200	46,600
US 601 to NC 200 (Morgan Mill Rd)	35,000	35,200
NC 200 (Morgan Mill Rd) to Austin Chaney Rd	24,400	24,800
Austin Chaney Rd to Forest Hills School Rd	19,300	19,600
Forest Hills School Rd to US 74	15,400	16,400

Source: *Traffic Forecast for TIP Projects R-3329 & R-2559 Monroe Connector/Bypass*, Wilbur Smith Associates, September 2008

As discussed above in **Section 4.2.1**, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSATs, it can give a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives.

The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at FHWA's Web site: [www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm](http://www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm).

For each DSA, the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. **Table 4** shows the projected 2035 vehicle miles traveled (VMT) and vehicle hours traveled (VHT) in the Metrolina region as a whole and also just in Union County (a subset of the Metrolina region), under the No-Build Alternative and the DSAs. The VMT and VHT for Union County under the various scenarios are presented in addition to the VMT and VHT for the Metrolina region as a whole because the Metrolina region is so large (13 counties). Including information

for the smaller area of Union County provides another picture of the trends projected for each scenario in the county where the majority of the project is located.

**TABLE 4: Vehicle Miles and Vehicle Hours Traveled Under Various Scenarios**

Scenario	Region	2035 Vehicle Miles Traveled (VMT) in 1000's			2035 Vehicle Hours Traveled (VHT) in 1000's		
		Daily	AM Peak	PM Peak	Daily	AM Peak	PM Peak
No-Build Alternative	Union County Only	11,481	2,649	3,042	253.6	58.6	67.4
	Entire Metrolina Region	121,306	28,764	32,378	2,455.6	585.5	666.3
Detailed Study Alternatives A, A1, A2, A3, B, B1, B2, B3 – Toll Facility	Union County Only	10,971	2,543	2,913	238.8	55.2	63.4
	Entire Metrolina Region	121,262	28,752	32,349	2,451.1	584.3	664.5
Detailed Study Alternatives C, C1, C2, C3, D, D1, D2, D3 – Toll Facility	Union County Only	11,503	2,659	3,054	250.8	57.8	66.6
	Entire Metrolina Region	121,221	28,751	32,326	2,450.4	584.4	664.0

Source: Wilbur Smith Associates and HNTB, October 2008.

As shown in **Table 4**, the estimated 2035 daily VMT in Union County is approximately the same (< one percent difference) for DSAs C, C1, C2, C3, D, D1, D2, and D3 as it would be for the No-Build Alternative. The 2035 daily VMT in Union County is slightly lower (about 4 percent) for DSAs A, A1, A2, A3, B, B1, B2, and B3 than predicted for the No-Build Alternative. These differences between the build alternatives and the No-Build Alternative are less than 1 percent when considering the Metrolina region as a whole.

Because the VMT estimate for the No-Build Alternative is slightly higher than or about the same as any of the DSAs, higher levels of regional MSATs are not expected from any of the DSAs compared to the No-Build Alternative. In addition, because the estimated VMT under each of the DSAs are nearly the same, varying by less than five percent when just considering Union County and by less than one percent for the Metrolina region as a whole, it is expected there would be no appreciable difference in overall MSAT emissions among the various DSAs.

Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent from 2000 to 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great, even after accounting for VMT growth, that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

Because of the specific characteristics of the project DSAs [i.e. new location roadway], under each DSA there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely occur along the new location

portions of the DSAs, and be most pronounced where the new roadway would move traffic closer to predominantly residential areas such as between Stallings Road and Unionville-Indian Trail Road (all DSAs), along Secrest Shortcut Road near Poplin Road (all DSAs, where Segments 30 and 31 meet), and around the Austin Chaney Road interchange (all DSAs), and also where there are few major roadways and little industry, such as the area east of US 601 (all DSAs). However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations.

In sum, under all DSAs in the design year, it is expected there would be either minor changes or a slight reduction in MSAT emissions in the immediate area of the project, relative to the No-Build Alternative, due to similar VMT amongst the alternatives. In comparing the DSAs, MSAT levels could be higher in some locations than others, but current tools and science are not adequate to quantify them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

### 4.3 CONSTRUCTION AIR QUALITY

Provided local ordinances for open burning and dust are followed, as described below, significant air quality impacts due to construction of the proposed project are not anticipated. The proposed project would be constructed in phases, limiting the overall construction activity occurring at any one location. There would also be emissions related to construction equipment and vehicles. However, these impacts related to construction would be temporary.

**Open Burning.** During construction of any of the DSAs, all materials resulting from clearing and grubbing, demolition or other operations will be removed from the project site, burned or otherwise disposed of by the contractor. Any burning will be accomplished in accordance with applicable laws, local ordinances and regulations of the North Carolina SIP for air quality in compliance with 15A NCAC 02D.1903. For construction in Mecklenburg County, open burning, if allowed, will require a permit from the Mecklenburg County LUESA Department of Air Quality in accordance with the MCAPCO Section 1.5106. There are no burning ordinances in Union County.

**Dust.** Also during construction, measures will be taken to reduce dust generated by construction when the control of dust is necessary for the protection and comfort of motorists and area residents. These dust suppression measures may include watering unpaved work areas, temporary and permanent seeding and mulching, and covering stockpiled materials, and using covered haul trucks.

## 5 CONCLUSIONS

**Criteria Pollutants and Transportation Conformity.** The criteria pollutants of concern in the project area are ozone and carbon monoxide, since the Charlotte-Gastonia-Rock Hill air quality region (which includes Union County and Mecklenburg County) is a moderate nonattainment region for ozone, and Mecklenburg County is a maintenance area for carbon monoxide.

The proposed project's DSAs would not cause or contribute to any new localized carbon monoxide violations or increase the frequency or severity of any existing carbon monoxide violations. None

of the DSAs fit the criteria requiring a quantitative carbon monoxide hot-spot analysis, which indicates there is no potential for the proposed project to create a localized carbon monoxide hot-spot. Also, there are no known locations of existing carbon monoxide violations in the study area that the project could affect. The last recorded exceedance of the CO NAAQS in Mecklenburg County occurred in 1990 and there have been no exceedances since then (*State of the Environment Report 2008*, Mecklenburg County LUESA).

The proposed project is included in the 2030 LRTP and 2009-2015 TIP for the MUMPO area. The LRTP and TIP are included in the approved Conformity Determination for the Charlotte-Gastonia-Rock Hill air quality region, titled: *Conformity Analysis and Determination Report for the Cabarrus-Rowan MPO, the Gaston Urban Area MPO, and the Mecklenburg-Union MPO 2030 Long Range Transportation Plans and the FY 2009-2015 State Transportation Improvement Programs and for Non-MPO Areas of Lincoln County, Iredell County, Gaston County, and Union County Areas*. The current conformity determinations are consistent with the final conformity rule found in 40 CFR Parts 51 and 93. The USDOT made a Transportation Conformity Determination on the MUMPO 2030 LRTP on June 29, 2007 and on the 2009-2015 TIP on July 11, 2008.

In addition, in accordance with 40 CFR 93.115(b)(1), for a project identified in a transportation plan, the project's design concept and scope must not have changed significantly from those described in the transportation plan, or in a manner which would significantly impact use of the facility.

The DSAs for the project are generally consistent with the project descriptions (freeway) and project lengths (approximately 20 miles total) included in the LRTP. The only inconsistency in the LRTP is that the Monroe Bypass portion of the project (R-2559) is shown as a non-toll facility. The Monroe Connector/Bypass project is currently being studied only as a toll facility.

The conformity determination for the region will need to be updated prior to the completion of the ROD to change the project to a toll facility.

The selection of the No-Build Alternative would require the MUMPO LRTP to be updated to remove the proposed Monroe Connector and Monroe Bypass, and would need to seek other means to meet the region's emissions budget for conformance with the SIP.

**Mobile Source Air Toxics.** In sum, under all DSAs in the design year, it is expected there would be either minor changes or a slight reduction in MSAT emissions in the immediate area of the project, relative to the No-Build Alternative, due to similar VMT amongst the alternatives. In comparing the DSAs, MSAT levels could be higher in some locations than others, but current tools and science are not adequate to quantify them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

**Construction Air Quality.** Provided local ordinances for open burning and dust are followed, significant air quality impacts due to construction of the proposed project are not anticipated. There would also be emissions related to construction equipment and vehicles. However, these impacts related to construction would be temporary. The proposed project would be constructed in phases, limiting the overall construction activity occurring at any one location.

## 6 REFERENCES AND SUPPORTING DOCUMENTATION

### REFERENCES

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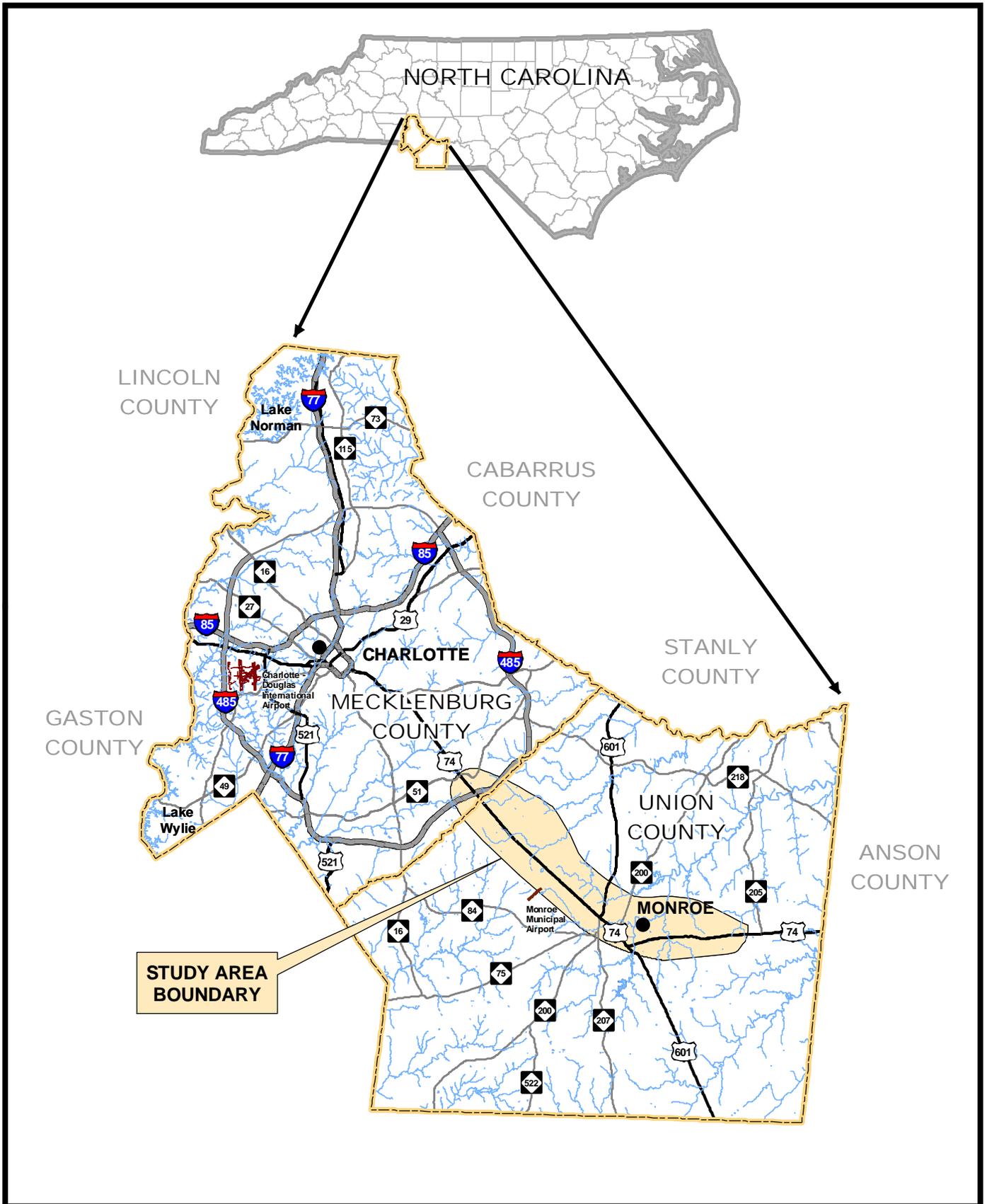
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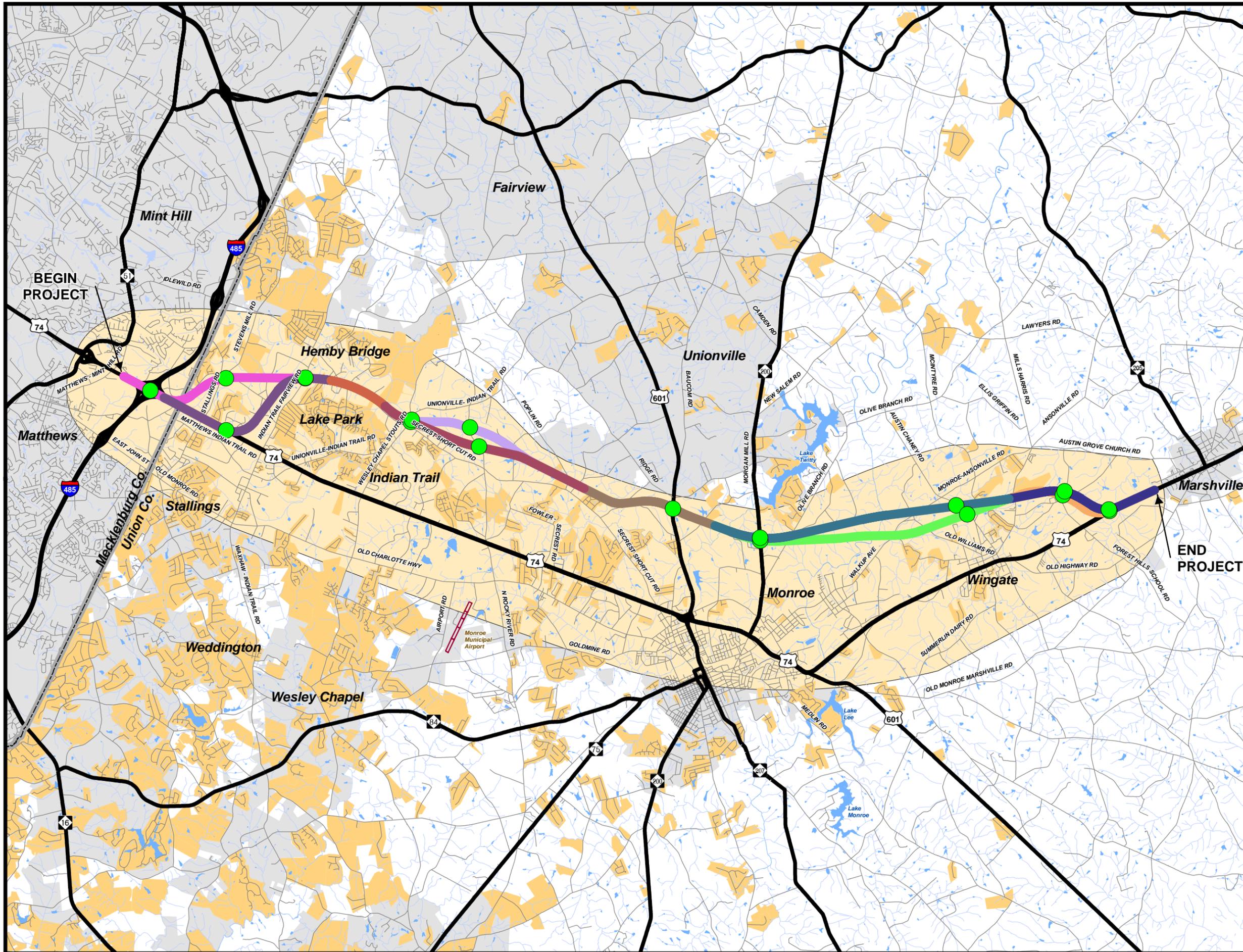
- 2008 *Traffic Forecast for TIP Projects R-3329 & R-2559 Monroe Connector/Bypass*, Wilbur Smith Associates, September.



  
**NORTH CAROLINA Turnpike Authority**  
**MONROE CONNECTOR / BYPASS**  
 STIP PROJECT NO. R-3329 / R-2559  
 Mecklenburg County and Union County

0 4.25 8.5  
 Miles  
  
 Source: Mecklenburg County and Union Counties GIS.  
 Map Printed On 10-09-08.

**PROJECT LOCATION**  
  
**Figure 1**

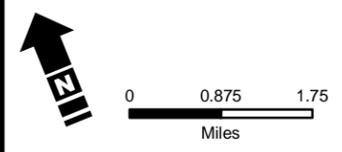


- Legend**
- Interchanges
  - Streams
  - Lakes
  - Subdivisions
  - Study Area
  - Segment 18A
  - Segment 2
  - Segment 21
  - Segment 22A
  - Segment 30
  - Segment 31
  - Segment 34
  - Segment 36
  - Segment 40
  - Segment 41



Mecklenburg and Union Counties  
 North Carolina Counties

Source: Mecklenburg County and Union Counties GIS.  
 Map Printed On 10-22-08.



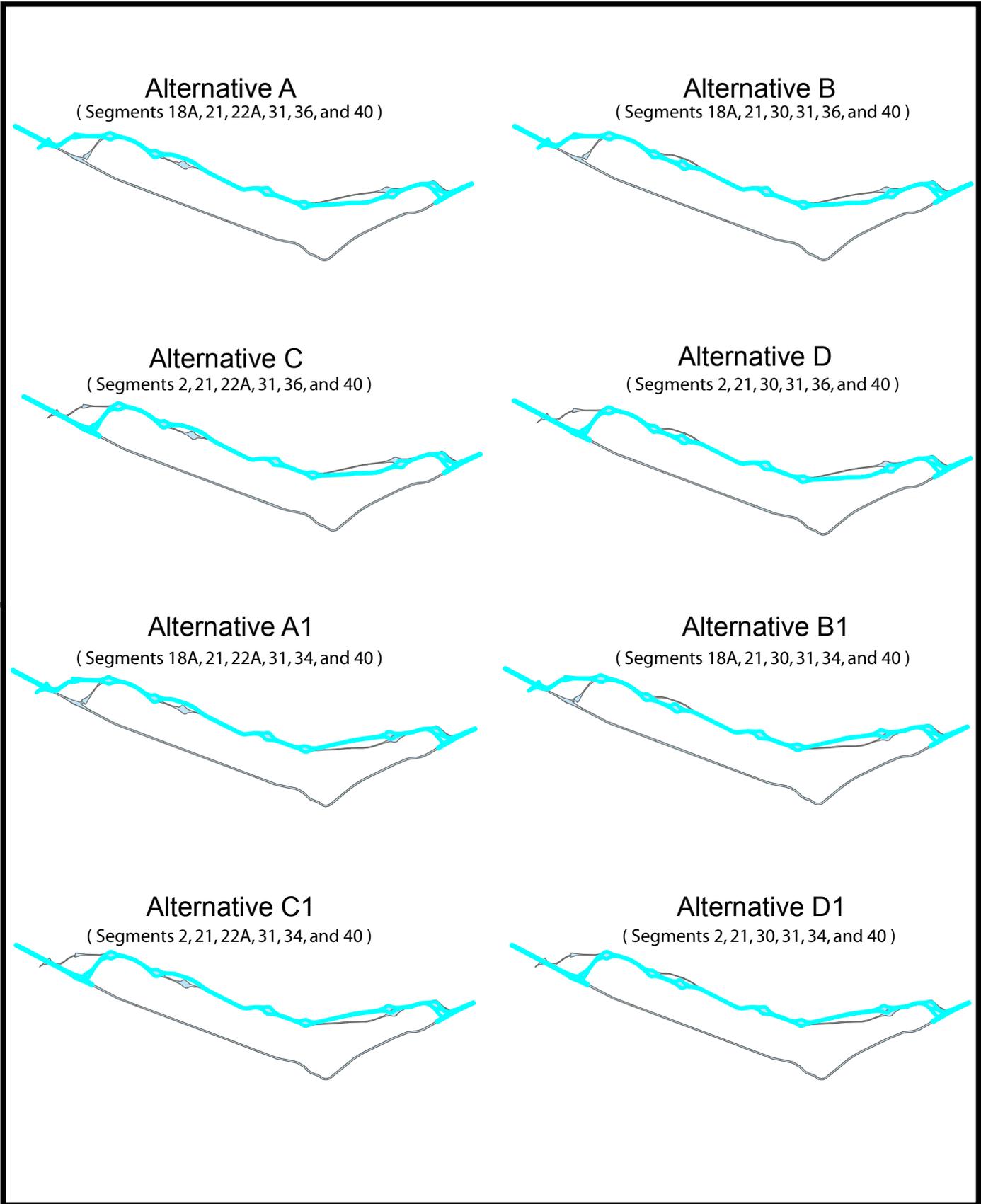
STIP PROJECT  
 NO. R-3329/R-2559  
 Mecklenburg County and Union County

**MONROE CONNECTOR/  
 BYPASS**

**DETAILED STUDY  
 ALTERNATIVES**

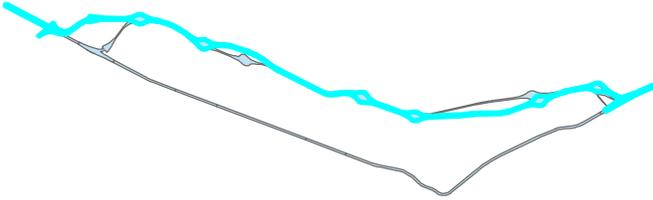
**Figure 2a**

AltQual\_MonCon\_Bypass\_Recommended\_DSA\_revised\_10-22-08



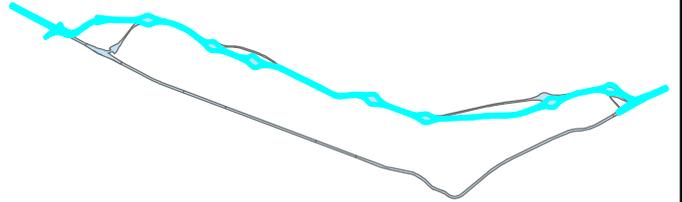
### Alternative A2

( Segments 18A, 21, 22A, 31, 36, and 41 )



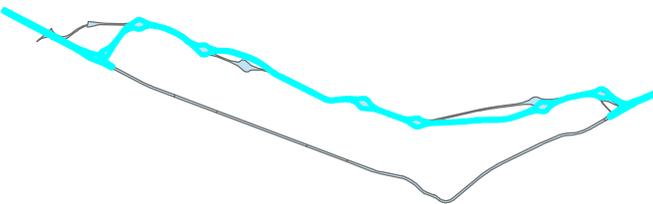
### Alternative B2

( Segments 18A, 21, 30, 31, 36, and 41 )



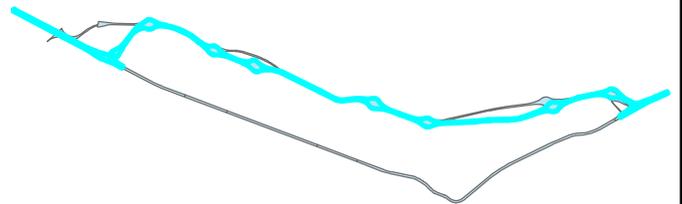
### Alternative C2

( Segments 2, 21, 22A, 31, 36, and 41 )



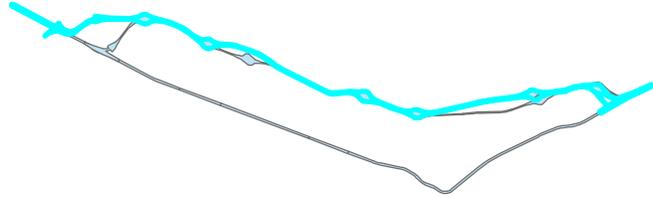
### Alternative D2

( Segments 2, 21, 30, 31, 36, and 41 )



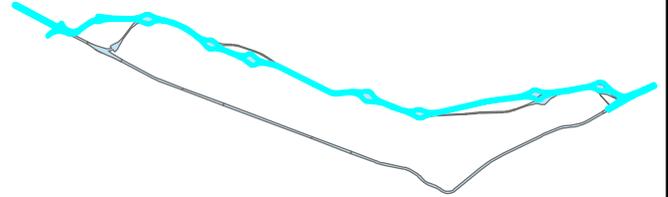
### Alternative A3

( Segments 18A, 21, 22A, 31, 34, and 41 )



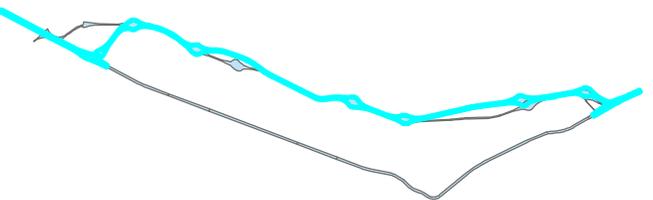
### Alternative B3

( Segments 18A, 21, 30, 31, 34, and 41 )



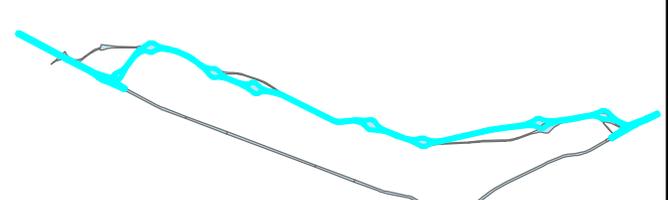
### Alternative C3

( Segments 2, 21, 22A, 31, 34, and 41 )



### Alternative D3

( Segments 2, 21, 30, 31, 34, and 41 )

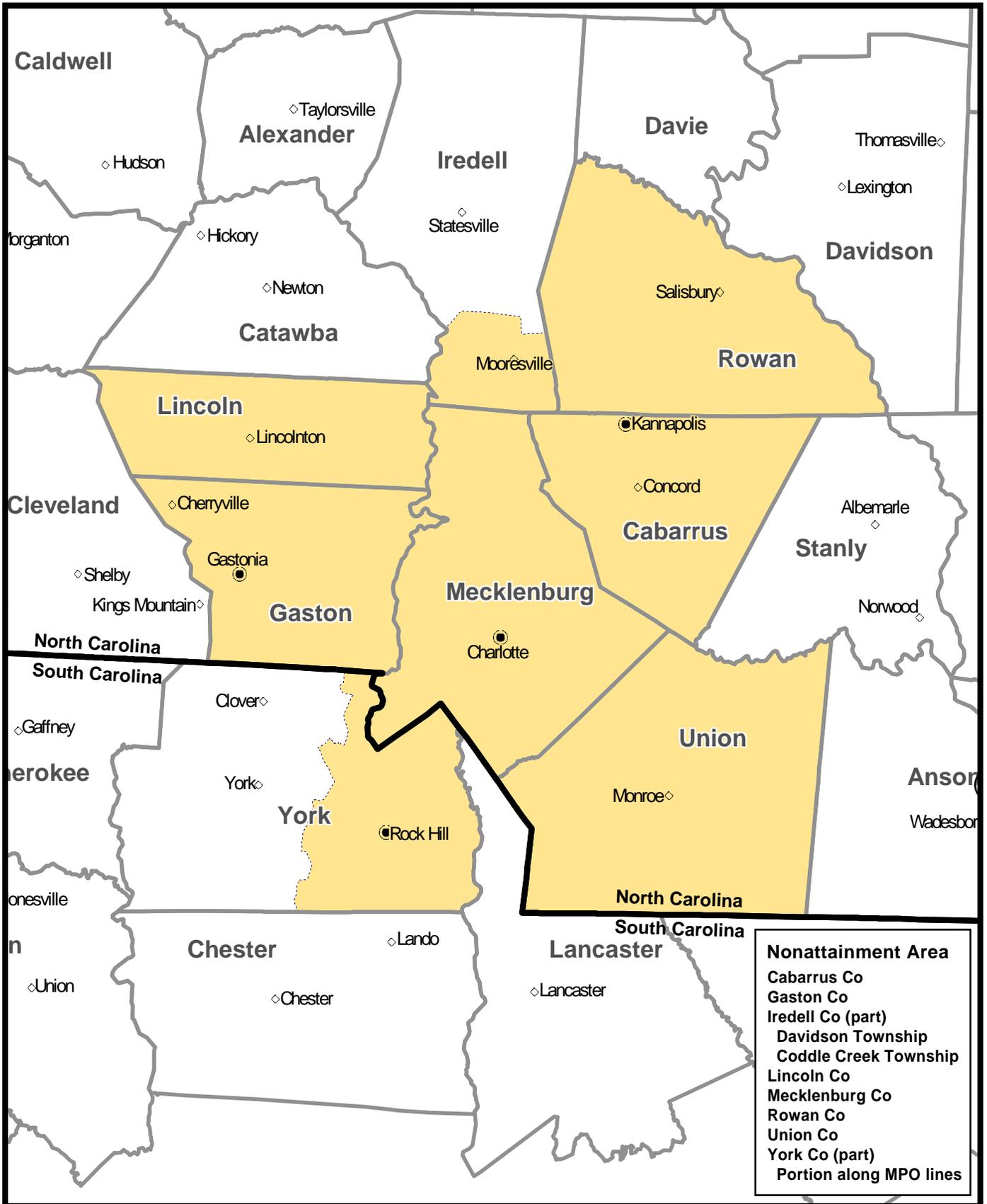


MONROE CONNECTOR / BYPASS

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

DETAILED  
STUDY ALTERNATIVES

FIGURE 2c



**Nonattainment Area**  
 Cabarrus Co  
 Gaston Co  
 Iredell Co (part)  
 Davidson Township  
 Coddle Creek Township  
 Lincoln Co  
 Mecklenburg Co  
 Rowan Co  
 Union Co  
 York Co (part)  
 Portion along MPO lines

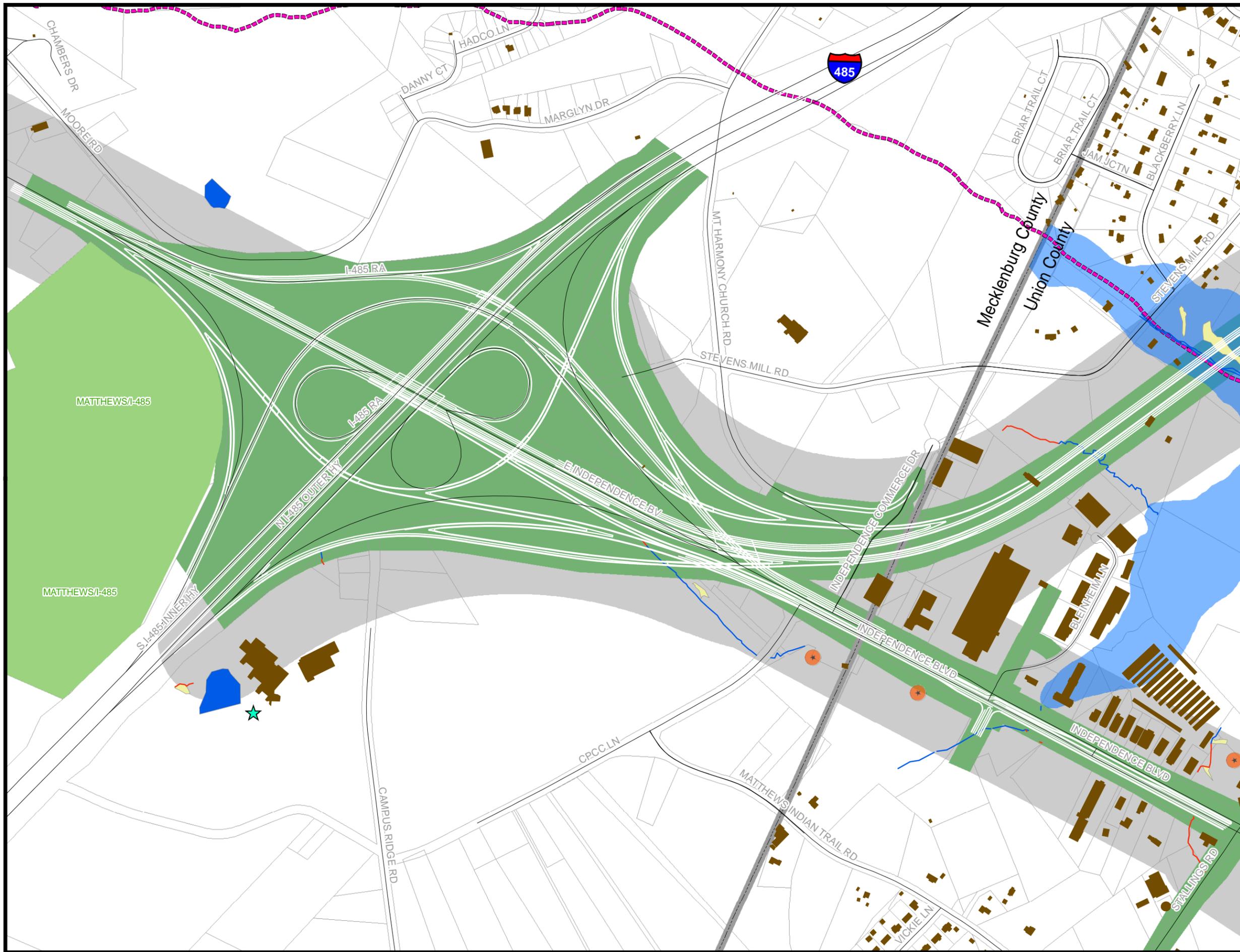
**NORTH CAROLINA**  
**Turnpike Authority**  
**MONROE CONNECTOR/BYPASS**  
 STIP PROJECT NO. R-3329/R-2559  
 Mecklenburg and Union Counties

**NOT TO SCALE**  
 Source: Counties GIS.  
 Map Printed On 10-09-08.



**METROLINA REGION**  
**8-HOUR OZONE**  
**NONATTAINMENT AREA**

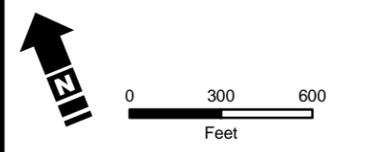
**Figure 3**



- Legend**
- Proposed Design
  - Right of Way
  - Corridor Study Area
  - Structures
  - Parcels
  - Existing Roads
  - Parks
  - 303D Streams
  - County Line
  - Surveyed Intermittent Stream
  - Surveyed Perennial Stream
  - Surveyed Wetlands
  - Surveyed Ponds
  - Floodway
  - 100 Year (AE)
  - 100 Year (A)
  - 500 Year
  - College
  - Hazmat
  - Gold Mines



Source: Mecklenburg County and Union Counties GIS.  
Map Printed On 10-09-08.

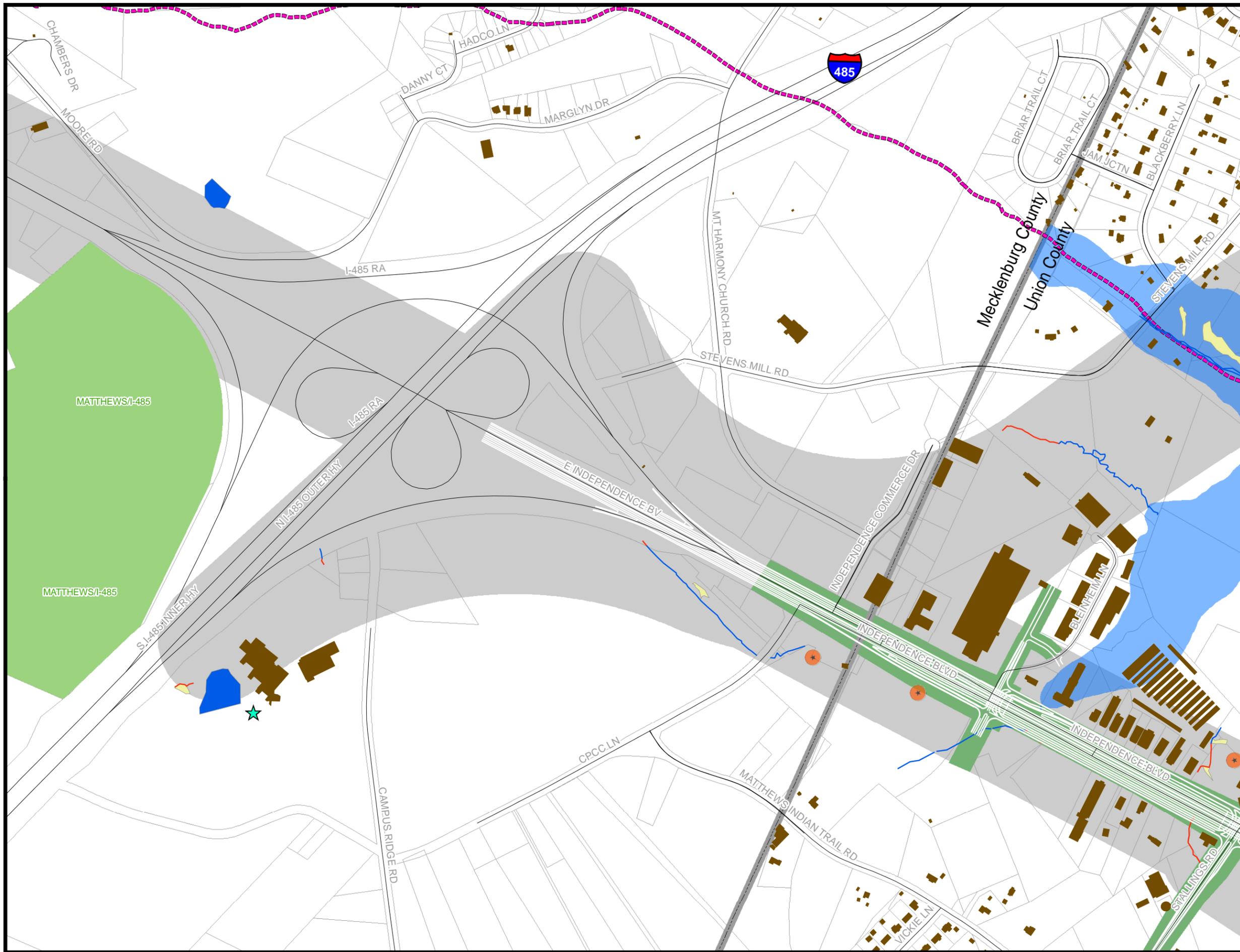


STIP PROJECT  
NO. R-3329/R-2559  
Mecklenburg County and Union County

**MONROE CONNECTOR/  
BYPASS**

**WESTERN TERMINUS  
FOR DSAs A, A1, A2,  
A3, B, B1, B2, AND B3**

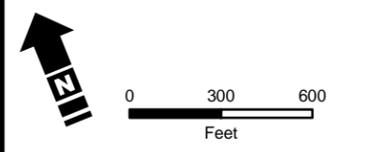
**Figure 4**



- Legend**
- Proposed Design
  - Right of Way
  - Corridor Study Area
  - Structures
  - Parcels
  - Existing Roads
  - Parks
  - 303D Streams
  - County Line
  - Surveyed Intermittent Stream
  - Surveyed Perennial Stream
  - Surveyed Wetlands
  - Surveyed Ponds
  - Floodway
  - 100 Year (AE)
  - 100 Year (A)
  - 500 Year
  - ★ College
  - Hazmat
  - Gold Mines



Source: Mecklenburg County and Union Counties GIS.  
Map Printed On 10-09-08.



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

**MONROE CONNECTOR/  
BYPASS**

**WESTERN TERMINUS  
FOR DSAs C, C1, C2,  
C3, D, D1, D2, AND D3**

**Figure 5**

## **APPENDIX A**

**Part 1 – Correspondence with Mecklenburg County  
Department of Air Quality**

**Part 2 - Mecklenburg County Air Pollution Control  
Ordinance - Selected Sections**

## **Appendix A- Part 1**

### **Correspondence with Mecklenburg County Department of Air Quality**

**From:** Garner, Sean [Spencer.Garner@mecklenburgcountync.gov]  
**Sent:** Wednesday, June 11, 2008 1:28 PM  
**To:** Gurak, Jill S  
**Subject:** RE: Gaston East-West Connector - STIP Project U-3321 - Air Quality Issues  
Jill,

Thanks for the summary. I have included information on open burning below. Sometimes this comes into play during land clearing.

I also wanted to be clear that MCAQ does not typically require CO microscale analysis beyond that which is required by FHWA or NCDENR. However, we are able to recommend that the analysis be added if there are concerns after review of the DEIS. In this particular case, I do not know if FHWA and/or NCDENR will require quantitative CO analysis. Let me know if you have any questions or need any additional information. Thanks.

S. Sean Garner, RS  
Air Quality Specialist  
Mecklenburg County Air Quality  
704-336-5419

### **1.5106 OPEN BURNING**

(a) Unless otherwise specified in this Regulation, no person shall ignite, cause to be ignited, permit to be ignited, allow, or maintain any open fire.

(b) Exception to Prohibition Against Open Fires:

(1) Fires used only for the non-commercial cooking of food for human consumption or for recreational purposes;

(2) Smokeless flares or safety flares for the combustion of waste gases;

(3) Fires for training purposes when certified by the Fire Official's office and approved by the Director;

(4) Small hand warming fires at construction sites, if the fire is small, uses clean wood, is non-smoking, does not create a nuisance and is confined to a container no larger than a 55 gallon drum; and

(5) Special Burning Permits: An open burning permit is not a right but may be issued under extenuating circumstances or for agricultural purposes in accordance with the following restrictions:

(i) permits shall be issued for the specified day or days only;

(ii) permits shall specify the location, the material to be burned, and the hour or hours of the day during which the burning will take place;

(iii) Permits will be issued only for periods during which it is anticipated that ground level wind velocity will be five to fifteen (5-15) miles per hour inclusive, and either no inversion conditions or at least a 3,000-foot ceiling to the lower level of inversion; calculations of such weather conditions will be based upon information provided by the U.S. Weather Bureau; and

(iv) Permits shall specify the type of material to be burned. Notwithstanding any exceptions or special written burning permits otherwise provided for in this Regulation, under no circumstances will the open burning of tires, synthetic material, household waste, industrial waste, wire coating, garbage, trash, construction waste, except clean wood for hand warming fires or land clearing waste be allowed.

(v) The Director may delegate the issuance, modification, revocation, denial and enforcement of Special Open Burning Permits and approval of training fires to the supervisory level he considers appropriate.

(c) Whenever an open fire is found upon public or private property upon which construction work is underway by a contractor or recently has been completed by a contractor without the debris therefrom having been removed, the fact of the open fire shall constitute prima-facie evidence that the fire was set by the contractor in charge of the construction on said property, unless the contractor shall have engaged a sub-contractor to remove the debris in which case the fact of the fire together with evidence that the sub-contractor was so engaged to remove the debris shall constitute prima-facie evidence that the fire was set by said sub-contractor.

(d) Whenever an open fire is found upon private property upon which construction work is not underway by a contractor and upon which construction work has not been recently completed by 151-11 MCAPCO 12/07

a contractor, the fact of the open fire shall constitute prima-facie evidence that the fire was set by the owner of the property, unless the private property be leased to another in which cases the facts of the open fire and lease shall constitute prima-facie evidence that the fire was set by the lessee.

(e) The Director may delegate the administration and enforcement of this Regulation to the County Fire Marshal as provided in MCAPCO Regulation 1.5105 - "Delegation of Authority" Paragraph (c).

\*\*\*\*\*

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notify the sender. Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of Mecklenburg County Government.

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**From:** Gurak, Jill S [mailto:JSGurak@pbsj.com]  
**Sent:** Friday, June 06, 2008 3:07 PM  
**To:** Garner, Sean  
**Subject:** FW: Gaston East-West Connector - STIP Project U-3321 - Air Quality Issues

Sean,

Thank you for returning my call today. As we discussed, I'm managing the preparation of the Draft Environmental Impact Statement for the Gaston East-West Connector, a candidate toll facility being studied by the NC Turnpike Authority. The proposed project is a new location toll facility from I-85 west of Gastonia, through southern Gaston County, to I-485 (near West Boulevard) in Mecklenburg County. More information on the project can be found at [www.ncturnpike.org/gaston](http://www.ncturnpike.org/gaston)

As part of the DEIS, we'll be preparing an air quality technical memorandum. We'll be addressing criteria pollutants, mobile source air toxics, and transportation conformity issues. At this time, we do not expect to need to conduct any quantitative microscale hotspot analyses, based on the projected traffic operations indicating levels of service of C or better at the interchange signalized intersections.

I was calling the Mecklenburg Dept of Air Quality to ask about any specific requirements your department may have regarding air quality studies. As we discussed, Mecklenburg County requires county permits for parking decks and airports, but not roadway-only projects. There is a dust nuisance ordinance for all construction activities. You indicated the Mecklenburg Air Quality Department would not require any additional air quality studies for the project beyond those which satisfy FHWA for the DEIS.

We will include a mention of the dust nuisance ordinance in the tech memo and DEIS. As we agreed, I will send you a pdf copy of the project's Air Quality Technical Memorandum when it is finalized to [sean.garner@mecklenburgcountync.gov](mailto:sean.garner@mecklenburgcountync.gov). A copy of the DEIS will be sent to LUESA (Mecklenburg County Land Use and Environmental Services Agency) for routing through the departments. The DEIS is expected to be complete in early 2009.

Thank you for returning my call so quickly. If you have any questions about the project, please don't hesitate to email or call me.

Sincerely,  
Jill

Jill Gurak, PE, AICP  
**PBS&J**  
1616 East Millbrook Rd, Suite 310  
Raleigh, NC 27609  
Phone: 919-876-6888  
Mobile: 919-609-0186

## **Appendix A- Part 2**

### **Mecklenburg County Air Pollution Control Ordinance - Selected Sections**

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**ARTICLE 1.0000**

**PERMITTING PROVISIONS FOR AIR POLLUTION SOURCES, RULES AND  
OPERATING REGULATIONS FOR ACID RAIN SOURCES, TITLE V AND TOXIC AIR  
POLLUTANTS**

**Section 1.5100 GENERAL PROVISIONS AND ADMINISTRATION**

**1.5101 DECLARATION OF POLICY**

This Ordinance is designed to conserve, protect, and improve the air resources of Mecklenburg County by providing for the establishment of the office and prescribing the duties of the Director of Mecklenburg Air Quality and empowering investigation and abatement by the Director of violations of this Ordinance; for the establishment and enforcement of rules and regulations; for permits for the installation, construction, addition to, alteration and use of process, fuel-burning, refuse-burning, and control equipment; for inspections and tests for process, fuel-burning, refuse-burning, and control equipment, and for the issuance of permits; establishing limitations upon the emissions of air contaminants, declaring emissions which do not meet such limitations to be unlawful, prohibiting certain acts causing air pollution, providing for fines and penalties for violations of the provisions of this Ordinance; and for just and adequate means by which the provisions of this Ordinance may be executed.

## 1.5102 DEFINITION OF TERMS

The following words and phrases when used in this Ordinance shall, for the purpose of this Ordinance, have the meanings respectively ascribed to them in this Regulation, unless a different meaning clearly is indicated. Provided further that to the extent that any definition in MCAPCO Regulation 1.5102 - "Definition of Terms" conflicts with any definition(s) included in MCAPCO Article 2.0000 - "Air Pollution Control Regulations and Procedures", such MCAPCO Article 2.0000 definition(s) shall control.

- (1) "**Administrator**" means the Director of Mecklenburg County Air Quality when it appears in any Code of Federal Regulation incorporated by reference in this Ordinance, unless:
  - (a) a specific Regulation in this Ordinance specifies otherwise, or
  - (b) the U.S. Environmental Protection Agency in its delegation or approval specifically states that a specific authority of the Administrator of the Environmental Protection Agency is not included in its delegation or approval.
- (2) "**Aerosol**" means a dispersion or suspension of small solid or liquid particles or any combination thereof in the air or other gaseous medium.
- (3) "**Air Contaminant**" means any smoke, soot, dust, fly ash, cinders, dirt, noxious or obnoxious acid, fumes, oxides, gases, vapors, odors, toxic or radioactive substance, waste particulate, solid, liquid, or gaseous matter or any other materials in the outdoor atmosphere.
- (4) "**Air Pollutant**" means an air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive substance or matter that is emitted into or otherwise enters the ambient air. Water vapor is not considered an air pollutant.
- (5) "**Air Pollution**" means the presence in the outdoor atmosphere of one or more air contaminants or combinations thereof in such quantities and of such duration that they are or may tend to be injurious to human or animal life, or to the property of others, or that interfere with the comfortable enjoyment of life or property or the conducting of business.
- (6) "**Allowable Emissions**" means the maximum emissions allowed by the applicable Regulations contained in MCAPCO Article 2.0000 - "Air Pollution Control Regulations and Procedures" or by permit conditions, if the permit limits emissions to a lesser amount.
- (7) "**Alteration**" means any modification which could change the emission characteristics.
- (8) "**Applicable Requirements**" means:
  - (A) any requirement listed in this Ordinance;
  - (B) any standard or other requirement provided for in the implementation plan approved or promulgated by EPA through rulemaking under Title I of the federal Clean Air Act that implements the relevant requirements of the federal Clean Air Act including any revisions to 40 CFR Part 52;
  - (C) any term or condition of a permit for a facility covered under this Ordinance;
  - (D) any standard or other requirement under Section 111 or 112 of the federal Clean Air Act, but not including the contents of any risk management plan required under Section 112 of the federal Clean Air Act;
  - (E) any standard or other requirement under Title IV of the federal Clean Air Act;
  - (F) any standard or other requirement governing solid waste incineration under Section 129 of the federal Clean Air Act;
  - (G) any standard or other requirement under Section 183(e), 183(f), or 328 of the federal Clean Air Act;

- (H) any standard or requirement under Title VI of the federal Clean Air Act unless a permit for such requirement is not required under this Section;
  - (I) any requirement under Section 504(b) or 114(a)(3) of the federal Clean Air Act; or
  - (J) any national ambient air quality standard or increment or visibility requirement under Part C of Title I of the federal Clean Air Act, but only as it would apply to temporary sources permitted pursuant to Section 504(e) of the federal Clean Air Act.
- (9) **“Applicant”** means any person who is applying for an air quality permit from the Department.
  - (10) **“Application Package”** means all elements or documents needed to make an application complete.
  - (11) **“Ashes”** means cinders, fly ash, or any other solid material resulting from combustion, and may include unburned combustibles.
  - (12) **“A.S.M.E.”** means the American Society of Mechanical Engineers.
  - (13) **“A.S.T.M.”** means the American Society for Testing Materials.
  - (14) **“Atmosphere”** means the air that envelops or surrounds the earth.
  - (15) **“Board”** means the Mecklenburg County Board of County Commissioners.
  - (16) **“Btu Hour Input”** means the gross calorific value of fuel fired per hour in fuel-burning equipment. (Gross calorific value shall be determined by standard procedures of A.S.T.M.)
  - (17) **“CFR”** means Code of Federal Regulations.
  - (18) **“Cinders”** means particles not ordinarily considered as fly ash or dust because of their greater size, consisting mainly of fused ash and/or burned matter.
  - (19) **“Combustible Material”** means any substance that, when ignited, will burn in the air.
  - (20) **“Combustible Refuse”** means any combustible waste material containing carbon in a free or combined state other than liquids or gases.
  - (21) **“Combustion Contaminants”** means particulate matter discharged into the atmosphere from the burning of any kind of material containing carbon in a free or combined state.
  - (22) **“Commission”** means the Mecklenburg County Air Quality Commission.
  - (23) **“Construction”** means change in the method of operation or any physical change (including on-site fabrication, erection, installation, replacement, demolition, or modification of a source) that results in a change in emissions or affects the compliance status. The following activities are not construction:
    - (a) clearing and grading;
    - (b) building access roads, driveways, and parking lots, except parking lots required to have a construction permit under 15A NCAC 2Q .0600;
    - (c) building and installing underground pipe work, including water, sewer, electric, and telecommunications utilities; or
    - (d) building ancillary structures, including fences and office buildings that are not a necessary component of an air contaminant source, equipment, or associated air cleaning device for which a permit is required under G.S. 143-215.108.
  - (24) **“Control Equipment”** means any equipment which has the function of controlling process, fuel-burning, or refuse-burning equipment and thus reduces the creation of, or the emission of, air contaminants to the atmosphere, or both.
  - (25) **“County”** means Mecklenburg County, North Carolina.
  - (26) **“Department”** means Mecklenburg County Air Quality which may also be identified using

the acronym (“MCAQ”).

- (27) **“Director”** means the Director of Mecklenburg County Air Quality or his duly authorized representatives.
- (28) **“Dust”** means minute solid particles released into the air by natural forces or by mechanical processes such as crushing, grinding, milling, drilling, demolishing, shoveling, conveying, covering, bagging, sweeping, etc.
- (29) **“Emission”** means the release into the outdoor atmosphere of air contaminants.
- (30) **“EPA”** means the United States Environmental Protection Agency or the administrator of the Environmental Protection Agency.
- (31) **“EPA Approves”** means full approval, interim approval, or partial approval by EPA.
- (32) **“Equivalent Unadulterated Fuels”** means used oils that have been refined such that the content of toxic additives or contaminants in the oils are no greater than those in unadulterated fossil fuels.
- (33) **“Facility”** means all of the pollutant emitting activities, except transportation facilities as defined under MCAPCO Regulation 2.0802 - “Definitions”, that are located on one or more contiguous or adjacent properties under common control.
- (34) **“Federally Enforceable”** or **“Federal Enforceable”** means enforceable by the EPA.
- (35) **“Fly Ash”** means particulate matter capable of being air-borne or gas-borne and consisting essentially of fused ash and/or unburned material.
- (36) **“Fuel”** means any form of combustible matter - solid, liquid, or gas, excluding combustible refuse.
- (37) **“Fuel Burning Operation”** means use of furnace, boiler, device, or mechanism used principally, but not exclusively, to burn any fuel for the purpose of indirect heating in which the material being heated is not contacted by and adds no substance to the products of combustion.
- (38) **“Fuel Combustion Equipment”** means any fuel burning source covered under MCAPCO Regulations 2.0503 - “Particulates from Fuel Burning Indirect Heat Exchangers”, 2.0504 - “Particulates from Wood Burning Indirect Heat Exchangers” or 40 CFR Part 60 Subparts D - “Fossil fuel-fired steam generators”, Da - “Electric utility steam generating units”, Db - “Industrial - commercial - institutional steam generating units”, or Dc - “Small industrial - commercial - institutional steam generating units”.
- (39) **“Furnace”** means an enclosed space provided for the ignition and/or combustion of fuel.
- (40) **“Green Wood”** means wood with a moisture content of 18 percent or more.
- (41) **“Hazardous Air Pollutant”** means any pollutant that has been listed pursuant to Section 112(b) of the federal Clean Air Act. Pollutants listed only in MCAPCO Regulation 2.1104 - “Toxic Air Pollutant Guidelines”, but not pursuant to Section 112(b), are not included in this definition.
- (42) **“Insignificant Activities”** means activities defined as insignificant activities because of category or as insignificant activities because of size or production rate under MCAPCO Regulation 1.5503 - “Definitions”.
- (43) **“Lesser Quantity Cutoff”** means:
  - (A) for a source subject to the requirements of Section 112(d) or 112(j) of the federal Clean Air Act, the level of emissions of hazardous air pollutants below which the following are not required:

- (i) maximum achievable control technology (MACT) or generally available control technology (GACT), including work practice standards, requirement under Section 112(d) of the federal Clean Air Act;
  - (ii) a MACT standard established under Section 112(j) of the federal Clean Air Act; or
  - (iii) substitute MACT or GACT adopted under Section 112(l) of the federal Clean Air Act.
- (B) for modification of a source subject to, or may be subject to, the requirements of Section 112(g) of the federal Clean Air Act, the level of emissions of hazardous air pollutants below which MACT is not required to be applied under Section 112(g) of the federal Clean Air Act; or
  - (C) for all other sources, potential emissions of each hazardous air pollutant below 10 tons per year and the aggregate potential emissions of all hazardous air pollutants below 25 tons per year.
- (44) **“Major Facility”** means a major source as defined under 40 CFR 70.2.
  - (45) **“Mass Emission Rate”** means the weight discharged per unit of time.
  - (46) **“Mist”** means a suspension of any finely-divided liquid in any gas or atmosphere.
  - (47) **“Modification”** means any physical change or change in operation that results in a change in emissions or affects the compliance status of the source or the facility.
  - (48) **“Modified Facility”** means the modification of an existing facility or source and:
    - (A) the permitted facility or source is being modified in such a manner to require the Department to reissue the permit, or
    - (B) a new source is being added that requires the Department to reissue the permit.
 A modified facility does not include a facility or source that requests to change name or ownership, construction or test dates, or reporting procedures.
  - (49) **“New Facility”** means a facility that is receiving a permit from the Department for construction and operation of an air pollution source and the facility is not currently permitted by the Department.
  - (50) **“Odor”** means that property of an air contaminant that affects the sense of smell.
  - (51) **“Open Fire”** means any combustion process from which the products of combustion are emitted directly into the outdoor atmosphere without passing through a stack.
  - (52) **“Owner or Operator”** means any person who owns, leases, operates, controls, or supervises a facility, source, or air pollution control equipment.
  - (53) **“Peak Shaving Generator”** means a generator that is located at a facility and is used only to serve that facility’s on-site electrical load during peak demand periods for the purpose of reducing the cost of electricity; it does not generate electricity for resale. A peak shaving generator also may be used for emergency backup.
  - (54) **“Permit”** means the legally binding written document, including any revisions thereto, issued pursuant to G.S. 143-215.108 to the owner or operator of a facility or source that emits one or more air pollutants and that allows that facility or source to operate in compliance with G.S. 143-215.108. This document specifies the requirements applicable to the facility or source and to the permittee.
  - (55) **“Permittee”** means the person who has received an air quality permit from the Department.
  - (56) **“Person”** means any individual natural person, firms, partnerships, associations, public or

private institutions, municipalities or political subdivisions, governmental agencies, or private or public corporations, or other entity recognized by law as the subject of rights and duties. The masculine, feminine, singular, or plural is included in any circumstances.

- (57) **“Plans and Specifications”** means the completed application and any other documents required to define the operating conditions of the air pollution source.
- (58) **“Portable Generator”** means a generator permanently mounted on a trailer or a frame with wheels.
- (59) **“Potential Emissions”** means the rate of emissions of any air pollutant that would occur at the facility’s maximum capacity to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a facility to emit an air pollutant shall be treated as a part of its design if the limitation is federally enforceable. Such physical or operational limitations include the air pollution control equipment, restriction on hours of operation or the type or amount of material combusted, stored or processed. Potential emissions include fugitive emissions as specified in the definition of major source in 40 CFR 70.2. Potential emissions do not include a facility’s secondary emissions such as those from motor vehicles associated with the facility and do not include emissions from insignificant activities because of category as defined under MCAPCO Regulation 1.5503 - “Definitions”. If MCAPCO Regulation 1.5211 - “Applicability” or a Rule or Regulation in 40 CFR Part 63 uses a different methodology to calculate potential emissions, that methodology shall be used for sources and pollutants covered under that Regulation.
- (60) **“Private Residence”** means containing fewer than three dwelling units.
- (61) **“Process Equipment”** means any equipment, device, or contrivance for changing any materials or for storage or handling of any materials, and all appurtenances thereto, including ducts, stacks, etc., the use of which may cause any discharge of an air contaminant into the outdoor atmosphere but not including that equipment specifically defined as fuel-burning equipment or refuse-burning equipment in this Ordinance.
- (62) **“Refuse”** means any garbage, rubbish, or trade waste.
- (63) **“Refuse-Burning Equipment”** means any equipment, device, or contrivance used for the destruction of garbage, rubbish, and/or other wastes by burning, and all appurtenances thereto.
- (64) **“Regulated Air Pollutant”** means:
  - (A) nitrogen oxides or any volatile organic compound as defined under 40 CFR 51.100;
  - (B) any pollutant for which there is an ambient air quality standard as defined under 40 CFR Part 50;
  - (C) any pollutant that is regulated under MCAPCO Regulation 2.0524 - “New Source Performance Standards” or MCAPCO Regulation 2.1110 - “National Emission Standards for Hazardous Air Pollutants”, or MCAPCO Regulation 2.1111 - “Maximum Achievable Control Technology” or 40 CFR Parts 60, 61, or 63;
  - (D) any pollutant subject to a standard promulgated under Section 112 of the federal Clean Air Act or other requirements established under Section 112 of the federal Clean Air Act, including Section 112(g) (but only for the facility subject to Section 112 (g)(2) of the federal Clean Air Act), Section 112 (j) or (r) of the federal Clean Air Act;
  - (E) any Class I or II substance listed under Section 602 of the federal Clean Air Act; or

- (F) any toxic air pollutant listed in MCAPCO Regulation 2.1104 - "Toxic Air Pollutant Guidelines".
- (65) **"Respondent"** means the person against whom a penalty has been assessed.
- (66) **"Saw Mill"** means a place or operation where logs are sawed into lumber consisting of one or more of these activities: debarking, sawing, and sawdust handling. Activities that are not considered part of a saw mill include chipping, sanding, planing, routing, lathing, and drilling.
- (67) **"SIP"** means the North Carolina State Implementation Plan for Air Quality and the Mecklenburg County portion thereof.
- (68) **"Solid Fuel"** means a fuel which is fired as a solid such as coal, lignite, and wood.
- (69) **"Soot"** means agglomerated particles consisting mainly of carbonaceous material.
- (70) **"Source"** means any stationary article, machine, process equipment, or other contrivance, or combination thereof, from which air pollutants emanate or are emitted, either directly or indirectly.
- (71) **"Stack"** means any chimney, flue, conduit, or opening arranged for the emission of solids, liquids, gases, or aerosols into the outdoor atmosphere.
- (72) **"Stack Height"** means the vertical distance measured in feet between the point of discharge from the stack or chimney into the outdoor atmosphere and the elevation of the land thereunder.
- (73) **"Standard Conditions"** means a gas temperature of 70 degrees Fahrenheit and a gas pressure of 29.92 inches of mercury.
- (74) **"Title IV Source"** means a source that is required to be permitted following the procedures under MCAPCO Section 1.5400 - "Acid Rain Procedures".
- (75) **"Title V Source"** means a source that is required to be permitted following the procedures under MCAPCO Section 1.5500 - "Title V Procedures".
- (76) **"Toxic Air Pollutants"** means any of the carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants listed in MCAPCO Regulation 2.1104 - "Toxic Air Pollutant Guidelines".
- (77) **"Trade Secret"** means business or technical information, which in accordance with N.C. G.S. 66-152 includes but is not limited to a formula, pattern, program, device, compilation of information, method, technique, or process that:
- (A) derives independent actual or potential commercial value from not being generally known or readily ascertainable through independent development or reverse engineering by persons who can obtain economic value from its disclosure or use; and
  - (B) is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.
- (78) **"Transportation Facility"** means a complex source as defined in G.S. 143-213(22) that is subject to the requirements of MCAPCO Section 2.0800 - "Transportation Facilities".
- (79) **"Unadulterated Fossil Fuel"** means fuel oils, coal, natural gas, or liquefied petroleum gas to which no toxic additives have been added that could result in the emissions of a toxic air pollutant listed in MCAPCO Regulation 2.1104 - "Toxic Air Pollutant Guidelines".
- (80) **"Vapor"** means the gaseous form of a substance which normally exists in the solid or liquid state.
- (81) **"Volatile or Volatile Matter"** means the gaseous constituents of solid fuels as determined

by procedures defined in current A.S.T.M. Methods.

**1.5103 ENFORCEMENT AGENCY**

The Director of Mecklenburg County Air Quality shall have primary responsibility for administration of these Regulations, and he shall appoint an adequate administrative and technical staff within the Department. The Director is authorized to use laboratory and other facilities and personnel of the Department to assist him in the administration of this Ordinance.

**1.5104 GENERAL DUTIES AND POWERS OF THE DIRECTOR, WITH THE APPROVAL OF THE BOARD**

The powers and duties of the Director include, but are not limited to, the following:

(a) Encourage the making of agreements and compacts among neighboring counties and states for the prevention and control of air pollution;

(b) Investigate and evaluate the air resources of the County so as to identify sources and problems unique to the County, determine the degree of need for planning and action for air pollution control, scientifically define air pollution problems unique to the County, and obtain scientific information for the design, operation, and evaluation of the effectiveness of an air pollution control program tailored to the needs of the County, including,

- (1) Emission inventories,
- (2) Source registration,
- (3) Receptor and effects inventories,
- (4) Meteorological surveys,
- (5) Air quality surveys,
- and
- (6) Odor surveys;

(c) Administer and enforce rules and Regulations adopted by the Board controlling air pollution including but not limited to, issuing permits pursuant to this Ordinance as necessary to protect the public health and environment;

(d) Require immediate discontinuance of discharges of air contaminants into the atmosphere;

(e) Maintain and operate laboratory facilities with capabilities appropriate for air pollution studies, research, analytical determination and essential instrumentation;

(f) Prepare and develop a comprehensive plan for prevention, abatement, and control of air pollution;

(g) Collect and disseminate appropriate information and conduct such educational and training programs as may appear appropriate;

(h) Encourage voluntary cooperation by persons or groups to achieve the purposes of this Ordinance;

(i) Advise, consult, and cooperate with all levels of official governmental representatives and agencies, with industrial and commercial enterprises, with educational institutions, with associations, and with other interested persons or groups;

(j) Investigate complaints and issue such orders as may be required to effectuate the purposes of this Ordinance and enforce them by all appropriate administrative and judicial proceedings;

(k) Make such recommendations to the Board as may be required or appropriate to keep this Ordinance abreast of modern technology and scientific developments;

(l) Make inspections of any air pollution source and conduct tests as deemed necessary by the Director; and

(m) Require the facility to conduct tests and gather information to document compliance with emission standards and effectuate the purposes of this Ordinance.

#### **1.5105 DELEGATION OF AUTHORITY**

(a) The Director may delegate the processing of permit applications, the issuance of permits, the modification of permits, and the renewal of permits to the supervisory level that he considers appropriate, provided this delegation shall not include the authority to deny a permit or permit renewal or to revoke, or suspend a permit. The Director shall appoint adequate administrative and technical staff within the Department to assure the efficient administration of this section.

(b) The Director may delegate the issuance, modification, revocation, denial and enforcement of Special Open Burning Permits and approvals of training fires to the supervisory level he considers appropriate.

(c) The Director may delegate the administration and enforcement of MCAPCO Regulation 1.5106 - "Open Burning" to the County Fire Marshal.

### **1.5106 OPEN BURNING**

(a) Unless otherwise specified in this Regulation, no person shall ignite, cause to be ignited, permit to be ignited, allow, or maintain any open fire.

(b) Exception to Prohibition Against Open Fires:

- (1) Fires used only for the non-commercial cooking of food for human consumption or for recreational purposes;
- (2) Smokeless flares or safety flares for the combustion of waste gases;
- (3) Fires for training purposes when certified by the Fire Official's office and approved by the Director;
- (4) Small hand warming fires at construction sites, if the fire is small, uses clean wood, is non-smoking, does not create a nuisance and is confined to a container no larger than a 55 gallon drum; and
- (5) Special Burning Permits: An open burning permit is not a right but may be issued under extenuating circumstances or for agricultural purposes in accordance with the following restrictions:
  - (i) permits shall be issued for the specified day or days only;
  - (ii) permits shall specify the location, the material to be burned, and the hour or hours of the day during which the burning will take place;
  - (iii) Permits will be issued only for periods during which it is anticipated that ground level wind velocity will be five to fifteen (5-15) miles per hour inclusive, and either no inversion conditions or at least a 3,000-foot ceiling to the lower level of inversion; calculations of such weather conditions will be based upon information provided by the U.S. Weather Bureau; and
  - (iv) Permits shall specify the type of material to be burned. Notwithstanding any exceptions or special written burning permits otherwise provided for in this Regulation, under no circumstances will the open burning of tires, synthetic material, household waste, industrial waste, wire coating, garbage, trash, construction waste, except clean wood for hand warming fires or land clearing waste be allowed.
  - (v) The Director may delegate the issuance, modification, revocation, denial and enforcement of Special Open Burning Permits and approval of training fires to the supervisory level he considers appropriate.

(c) Whenever an open fire is found upon public or private property upon which construction work is underway by a contractor or recently has been completed by a contractor without the debris therefrom having been removed, the fact of the open fire shall constitute prima-facie evidence that the fire was set by the contractor in charge of the construction on said property, unless the contractor shall have engaged a sub-contractor to remove the debris in which case the fact of the fire together with evidence that the sub-contractor was so engaged to remove the debris shall constitute prima-facie evidence that the fire was set by said sub-contractor.

(d) Whenever an open fire is found upon private property upon which construction work is not underway by a contractor and upon which construction work has not been recently completed by

a contractor, the fact of the open fire shall constitute prima-facie evidence that the fire was set by the owner of the property, unless the private property be leased to another in which cases the facts of the open fire and lease shall constitute prima-facie evidence that the fire was set by the lessee.

(e) The Director may delegate the administration and enforcement of this Regulation to the County Fire Marshal as provided in MCAPCO Regulation 1.5105 - "Delegation of Authority" Paragraph (c).

### **1.5107 CONTROL AND PROHIBITION OF VISIBLE EMISSIONS**

(a) Purpose and Scope: The intent of this Regulation is to promulgate rules pertaining to the prevention, abatement, and control of emissions generated as a result of fuel burning operations and other industrial processes where an emission reasonably can be expected to occur. This Regulation shall apply to all fuel burning installations and such other processes as may cause a visible emission incident to the conduct of their operations.

(b) Restrictions Applicable to All Installations: no person shall cause, suffer, allow, or permit emissions from any installation which are of a shade or density darker than that designated as 20% opacity for an aggregate of more than six (6) minutes in any one hour or more than twenty (20) minutes in any 24-hour period. Where the presence of combined water is the only reason for failure of an emission to meet the limitations of MCAPCO Regulation 1.5107 - "Control and Prohibition of Visible Emissions", those requirements shall not apply.

(c) Special Requirements for Certain Sources: Sources subject to MCAPCO Regulations 2.0508 - "Particulates from Pulp and Paper Mills", 2.0524 - "New Source Performance Standards", 2.1110 - "National Emission Standards for Hazardous Air Pollutants" or 2.1111 - "Maximum Achievable Control Technology", shall comply with the visible emissions standards specified in those Regulations. In no case shall any such source's visible emissions be allowed to exceed 20% opacity.

### **1.5108 DUST AND RELATED MATERIAL**

(a) No person shall discharge into the atmosphere dust in such quantities or of such toxic or corrosive nature that may be injurious to humans or animals or may cause damage to the property of others.

(b) Fugitive dust shall not be discharged from an industrial establishment in such a manner and in such quantity that the ambient air quality standards are exceeded at the property line.

(c) No owner or lessee of a storage lot, parking lot, automotive sales lot, access roadway, or any other place shall permit dust or other material readily scattered by wind to leave such property unless the owner or lessee shall have first taken reasonable precautions or otherwise have maintained such property in such a manner as to minimize air pollution.

(d) No person shall operate any vehicle in such a manner that particulate matter loaded thereon is discharged onto a public highway, street, road, or right-of-way, except public employees in the exercise of their duties, or contractors and their employees building, paving, or repairing the section of highway, street, road, or right-of-way in question.

### **1.5109 NUISANCE**

No person shall cause, suffer, allow, or permit the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

### **1.5110 CONTROL AND PROHIBITION OF ODOROUS EMISSIONS**

(a) Purpose. The purpose of this Regulation is to provide for the control and prohibition of objectionable odorous emissions.

(b) Definitions. For the purpose of this Regulation the following definitions shall apply:

- (1) Commercial purposes means activities that require a state or local business license to operate;
- (2) Temporary activities or operations means activities or operations that are less than 30 days in duration during the course of a calendar year and do not require an air quality permit.

(c) Applicability. With the exceptions in Paragraph (d) of this Regulation, this Regulation shall apply to all operations that may produce odorous emissions that can cause or contribute to objectionable odors beyond the facility's boundaries.

(d) Exemptions. The requirements of this Regulation do not apply to:

- (1) processes at kraft pulp mills identified in MCAPCO Regulation 2.0528 - "Total

Reduced Sulfur from Kraft Pulp Mills”, and covered under MCAPCO Regulation 2.0524 - New Source Performance Standards” or 2.0528 - “Total Reduced Sulfur from Kraft Pulp Mills”;

- (2) processes at facilities that produce feed-grade animal proteins or feed-grade animal fats and oils identified in and covered under Regulation 2.0539 - “Odor Control of Feed Ingredient Manufacturing Plants”;
- (3) motor vehicles and transportation facilities;
- (4) all on-farm animal and agricultural operations, including dry litter operations; (*state reg. exempts sources subject to NCAC 15A 2D.1804 - which was not adopted*);
- (5) municipal wastewater treatment plants and municipal wastewater handling systems;
- (6) restaurants and food preparation facilities that prepare and serve food on site;
- (7) single family dwellings not used for commercial purposes;
- (8) materials odorized for safety purposes;
- (9) painting operations that do not require a business license; or
- (10) all temporary activities or operations.

(e) Control Requirements. The owner or operator of a facility subject to this Regulation shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility’s boundary.

(f) Maximum feasible controls. If the Director determines that a source or facility subject to this Regulation is emitting an objectionable odor by the procedures described in Paragraph (g) of this Regulation, the Director shall require the owner or operator to implement maximum feasible controls for the control of odorous emissions. (Maximum feasible controls shall be determined according to the procedures in MCAPCO Regulation 1.5113 - “Determination of Maximum Feasible Controls for Odorous Emissions”.) The owner or operator shall:

- (1) within 180 days of receipt of written notification from the Director of the requirement to implement maximum feasible controls, complete the determination process outlined in MCAPCO Regulation 1.5113 - “Determination of Maximum Feasible Controls for Odorous Emissions” and submit the completed maximum feasible control determination process along with a permit application for maximum feasible controls and a compliance schedule to the Department; the compliance schedule shall contain the following increments of progress:
  - (A) a date by which contracts for the odorous emission control systems and equipment shall be awarded or orders shall be issued for purchase of component parts;
  - (B) a date by which on-site construction or installation of the odorous emission control systems and equipment shall begin;
  - (C) a date by which on-site construction or installation of the odorous emission control systems and equipment shall be completed, and
  - (D) a date by which final compliance shall be achieved.
- (2) within 18 months after receiving written notification from the Director of the requirement to implement maximum feasible controls, have installed and begun

operating maximum feasible controls.

The owner or operator shall certify to the Director within five days after the deadline for each increment of progress in this Paragraph whether the required increment of progress has been met.

(g) Determination of the existence of an objectionable odor. A source or facility is causing or contributing to an objectionable odor when:

- (1) A member of the Department staff determines by field investigation that an objectionable odor is present by taking into account nature, intensity, pervasiveness, duration, and source of the odor and other pertinent factors;
- (2) The source or facility emits known odor causing compounds such as ammonia, total volatile organics, hydrogen sulfide, or other sulfur compounds at levels that cause objectionable odors beyond the property line of that source or facility; or
- (3) The Department receives epidemiological studies associating health problems with odors from the source or facility or evidence of documented health problems associated with odors from the source or facility provided by the State Health Director.

*History Note: Statutory Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);  
Eff. April 1, 2001.*

#### **1.5111 GENERAL RECORDKEEPING, REPORTING AND MONITORING REQUIREMENTS**

(a) This Regulation applies to all regulated sources of air pollution located in Mecklenburg County and is in addition to those to which the provisions of MCAPCO Section 2.0900 - "Volatile Organic Compounds" are applicable.

(b) Notwithstanding Paragraph (a), Subparagraph (c)(5) of this Regulation is applicable to those sources to which the provisions of MCAPCO Section 2.0900 - "Volatile Organic Compounds" are applicable.

(c) The owner or operator of any air pollution emission source or control equipment shall maintain:

- (1) records detailing all activities relating to any compliance schedule entered into with Mecklenburg County Air Quality,
- (2) records detailing all malfunctions of air pollution control equipment,
- (3) records of all testing conducted to demonstrate compliance with emission limits derived through application of this Ordinance,
- (4) records of all monitoring conducted under Paragraph (h) of this Regulation.
- (5) For sources to which MCAPCO Regulations 2.0524 - "New Source Performance Standards", 2.1110 - "National Emission Standards for Hazardous Air Pollutants", 2.0530 - "Prevention of Significant Deterioration" or 2.0531 - "Sources in Non-Attainment Areas" are applicable, records that demonstrate that the principles and practices of pollution prevention to reduce or eliminate air pollutants produced or created at the source are actively and routinely considered and are being practiced at

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## SECTION 1.5600 TRANSPORTATION FACILITY PROCEDURES

### 1.5601 PURPOSE OF SECTION AND REQUIREMENT FOR A PERMIT

- (a) The purpose of this Section is to describe the procedures to be followed in applying for and issuing a permit for a transportation facility.
- (b) The owner or developer of a transportation facility subject to the requirements of MCAPCO Section 2.0800 - "Transportation Facilities" shall obtain a construction only permit following the procedures in this Section. An operation permit is not needed.
- (c) The owner or developer of a transportation facility required to have a permit under this Section shall not commence construction or modification of a transportation facility until he has applied for and received a construction permit.

### 1.5602 DEFINITIONS

For the purposes of this Section, the following definitions apply:

- (1) **"Construction"** means any activity following land clearing or grading that engages in a program of construction specifically designed for a transportation facility in preparation for the fabrication, erection, or installation of the building components associated with the transportation facility, e.g. curbing, footings, conduit, paving, etc.
- (2) **"Level of service"** means a qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.
- (3) **"Owner or developer"** means any person who owns, leases, develops, or controls a transportation facility.
- (4) **"Transportation facility"** means a complex source as defined at G.S. 143-213(22) and is subject to the requirements of MCAPCO Section 2.0800 - "Transportation Facilities".

### 1.5603 APPLICATIONS

- (a) A transportation facility permit application may be obtained from and shall be filed in writing with the Director.
- (b) Applicants shall file transportation facility permit applications at least 90 days before projected date of construction of a new transportation facility or modification of an existing transportation facility.
- (c) The permittee shall file requests for permit name or ownership changes as soon as the permittee is aware of the imminent name or ownership change.
- (d) Using Department forms, an original transportation facility permit application and a complete

copy shall be submitted, and both shall include plans and specifications giving all data and information as required by this Section and MCAPCO Section 2.0800 - "Transportation Facilities".

(e) A transportation facility permit application containing dispersion modeling analyses that demonstrate compliance with ambient air quality standards for carbon monoxide or traffic analyses showing a level of service of A, B, C, or D as defined in the Highway Capacity Manual, using planned roadway and intersection improvements shall include approval for the improvements from the appropriate state or city department of transportation. The Highway Capacity Manual is hereby incorporated by reference and shall include any later amendments and editions. This manual may be obtained from the Institute of Transportation Engineers, 1099 14<sup>th</sup> Street, NW, Suite 300 West, Washington, D.C. 20005-3438 at a cost of one hundred twenty dollars (\$120.00).

(f) Whenever the information provided on the permit application forms does not describe the transportation facility to the extent necessary to evaluate the application, the Director may request that the applicant provide any other information as allowed or required by this Section and MCAPCO Section 2.0800 - "Transportation Facilities" and necessary to evaluate the transportation facility. Before acting on any permit application, the Director may request any information from an applicant and conduct any inquiry or investigation that he considers necessary to determine compliance with applicable standards including traffic level of service.

(g) A non-refundable permit application fee shall accompany each transportation facility permit application. The permit application fee is described in MCAPCO Regulation 1.5231 - "Air Quality Fees".

*History Note: Filed as a Temporary Adoption Eff. March 8, 1994 for a period of 180 days or until the permanent rule becomes effective, whichever is sooner; Authority G.S. 143-215.3(a)(1); 143-215.108; 143-215.109; Eff. July 1, 1984; Amended Eff. February 1, 2005.*

#### **1.5604 PUBLIC PARTICIPATION**

(a) Before approving or disapproving a permit to construct or modify a transportation facility, the Director shall provide public notice for comments with an opportunity to request a public hearing on the draft permit.

(b) Public notice of action for applications processed and permits to be issued under MCAPCO Section 1.5600 - "Transportation Facility Procedures" shall be provided as follows:

- (1) the Director shall advertise proposed permit application approvals or disapprovals by placing these actions on the Commission's agenda. Public comment on the proposed action(s) will be received during the meeting and for 30 days thereafter;

**or**

- (2) at the applicant's request and expense, the Director may advertise the proposed permit application approvals or disapprovals in a major local newspaper of general circulation. Public comment on the proposed action(s) will be received for 30 days after the date the notice is published, including during any Commission meeting held during said 30 day period. The Department will provide the notice to the applicant, who will have a notice published in the legal section of the classified advertisements of a major local newspaper of general circulation. **The applicant shall provide certified proof of advertisement and pay a \$1,000 fee.**

All comments will be considered prior to final action.

- (c) The public notice shall identify:
  - (1) the affected facility;
  - (2) the name and address of the permittee;
  - (3) that comments and requests for a public hearing are to be sent to the Department;
  - (4) the address, and telephone number of the Department from whom interested persons may obtain additional information, including copies of the draft permit, the application, monitoring and compliance reports, all other relevant supporting materials, and all other materials available to Department that are relevant to the permit decision;
  - (5) a brief description of the proposed project;
  - (6) a brief description of the public comment procedures;
  - (7) the procedures to follow to request a public hearing unless a public hearing has already been scheduled;  
and
  - (8) the time and place of any hearing that has already been scheduled.

(d) If the Director finds that a public hearing is in the best interest of the public, the Director shall require a public hearing to be held on a draft permit. Notice of a public hearing shall be given at least 30 days before the public hearing.

(e) The information submitted by the permit applicant and the Department's analysis of that application shall be available for public inspection at the Department.

(f) Confidential material shall be handled in accordance with MCAPCO Regulation 1.5217 - "Confidential Information".

### **1.5605 FINAL ACTION ON PERMIT APPLICATIONS**

- (a) The Director may:
  - (1) issue a permit containing the conditions necessary to carry out the purposes of G.S. 143, Article 21B;
  - (2) rescind a permit upon request by the permittee; or
  - (3) deny a permit application when necessary to carry out the purposes of G.S. 143, Article 21B.

(b) The Director shall issue a permit for the construction or modification of a transportation facility subject to the Regulations in MCAPCO Section 2.0800 - "Transportation Facilities" if the permit applicant submits a complete application and demonstrates to the satisfaction of the Director that the ambient air quality standard for carbon monoxide shall not be exceeded.

(c) The Director shall issue a permit for a period of time necessary to complete construction, but such period shall not exceed five years.

(d) The Director shall not approve a permit for a transportation facility that:

- (1) interferes with the attainment or maintenance of the ambient air quality standard for carbon monoxide any applicable standard,
- (2) results in a contravention of applicable portions of the implementation plan control strategy, or
- (3) is demonstrated with dispersion modeling to exceed the ambient air quality standard for carbon monoxide .

*History Note: Filed as a Temporary Adoption Eff. March 8, 1994 for a period of 180 days or until the permanent rule becomes effective, whichever is sooner;  
Authority G.S. 143-215.3(a)(1); 143-215.108; 143-215.109;  
Eff. July 1, 1994;  
Amended Eff. February 1, 2005.*

#### **1.5606 TERMINATION, MODIFICATION AND REVOCATION OF PERMITS**

(a) The Director may terminate, modify, or revoke and reissue any permit issued under this Section if:

- (1) the information contained in the application or presented in support thereof is determined to be incorrect;
- (2) the conditions under which the permit was granted have changed;
- (3) violations of conditions contained in the permit have occurred;
- (4) the permittee refuses to allow the Director or his authorized representative upon presentation of credentials:
  - (A) to enter, at reasonable times and using reasonable safety practices, the permittee's premises where the transportation facility is located or where any records are required to be kept under terms and conditions of the permit;
  - (B) to have access, at reasonable times, to any copy or records required to be kept under terms and conditions of the permit;
  - (C) to inspect, at reasonable times and using reasonable safety practices, the transportation facility and any monitoring equipment or monitoring procedures required in the permit;or
  - (D) to sample, at reasonable times and using reasonable safety practices, emissions from the facility; or

(5) the Director finds that modification or revocation of a permit is necessary to carry out the purpose of G.S. Chapter 143, Article 21B.

(b) The construction or continuation of construction of a transportation facility after its permit has been revoked is a violation of this Section, G.S. 143-215.108, and G.S.143-215.109.

(c) The Director shall notify the permittee at least 60 days in advance of the date that the permit is to be terminated, modified, or revoked and reissued.

(d) Any person whose permit is terminated, modified, or revoked and reissued shall have the right to appeal the Director's decision in accordance with MCAPCO Regulation 1.5306 - "Hearings" which references Article 3 of NCGS 150B. The person shall have 30 days following receipt of the notice of the Director's decision on the termination, modification, or revocation and reissuance in which to appeal the Director's decision.

### **1.5607 APPLICATION PROCESSING SCHEDULE**

(a) The Department shall adhere to the following schedule in processing applications for transportation facility permits:

- (1) The Department shall review all permit applications within 30 days of receipt of the application to determine whether the application is complete or incomplete for processing purposes. The Department shall notify the applicant by letter:
  - (A) stating that the application as submitted is complete and specifying the completeness date;
  - (B) stating that the application is incomplete, requesting additional information and specifying the deadline date by which the requested information is to be received by the Department;or
  - (C) stating that the application is incomplete and requesting that the applicant rewrite and resubmit the application.

If the Department does not notify the applicant by letter dated within 30 days of receipt of the application that the application is incomplete, the application shall be deemed complete. A completeness determination shall not prevent the Director from requesting additional information at a later date when such information is considered necessary to properly evaluate the source, its air pollution abatement equipment, or the facility. If the applicant has not provided the requested additional information by the deadline specified in the letter requesting additional information, the Director may return the application to the applicant as incomplete. The applicant may request a time extension for submittal of the requested additional information.

- (2) The Director shall send the draft permit to public notice within 60 days after receipt of a complete application or 10 days after receipt of requested additional information, whichever is later.
- (3) The Department shall determine within 60 days of receipt of a complete application if any additional information is needed to conduct the technical review of the

- application. A technical completeness determination shall not prevent the Director from requesting additional information at a later date when such information is considered necessary to properly evaluate the source, its air pollution abatement equipment or the facility. The Department shall complete the technical review within 90 days of receipt of a complete application or 10 days after receipt of requested additional information, whichever is later.
- (4) If the draft permit is not required to go to public hearing, the Director shall take final action on the permit within 30 days after the close of the public comment period.
  - (5) If the draft permit is required to go to public hearing as a result of a request for public hearing under MCAPCO Regulation 1.5604 - "Public Participation" Paragraph (d), the Director shall:
    - (A) send the draft permit to public hearing within 45 days after approving the request for the public hearing,  
and
    - (B) take final action on the permit within 30 days after the close of the public hearing.

(b) The number of days between sending a letter requesting additional information and receiving that additional information shall not be counted in the schedules under Paragraph (a) of this Regulation.

(c) The Director may return applications containing insufficient information to complete the review at any time.

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## SECTION 2.0800 TRANSPORTATION FACILITIES

### 2.0801 PURPOSE AND SCOPE

(a) The purpose of this Section is to set forth requirements of the Director relating to construction or modification of a transportation facility which may result in an ambient air quality standard for carbon monoxide being exceeded.

(b) For purposes of this Section any transportation facility that was under construction or was the subject of a contract for construction prior to November 15, 1973, shall not be considered a new air pollution source.

(c) Approval to construct or modify a transportation facility shall not relieve any owner or developer of the transportation facility of the responsibility to comply with the state control strategy and all local and state regulations which are part of the Mecklenburg County portion of the North Carolina State Implementation Plan for Air Quality.

*History Note: Filed as a Temporary Amendment Eff. March 8, 1994 for a period of 180 days or until the permanent rule becomes effective, whichever is sooner;*  
*Authority G.S. 143-215.3(a)(1); 143-215.109;*  
*Eff. February 1, 1976;*  
*Amended Eff. February 1, 2005; July 1, 1994; July 1, 1984; December 1, 1976.*

### 2.0802 DEFINITIONS

For the purposes of this Section, the following definitions apply:

- (1) **“Construction”** means any activity following land clearing or grading that engages in a program of construction specifically designed for a transportation facility in preparation for the fabrication, erection, or installation of the building components which are a part of the transportation facility, e.g. curbing, footings, conduit, paving, etc.
- (2) **“Modify”** or **“modification”** means to alter or change the facility resulting in an increase in parking capacity as defined in MCAPCO Regulation 2.0805 - “Parking Facilities” or the number of aircraft operations from an airport as defined in MCAPCO Regulation 2.0804 - “Airport Facilities”.
- (3) **“Owner or developer”** means any person who owns, leases, develops, or controls a transportation facility.
- (4) **“Transportation facility”** means a complex source as defined in G.S. 143-213(22) and is subject to the requirements of this Section.

*History Note: Statutory Authority G.S. 143-215.3(a)(1); 143-215.109*  
*Eff. February 1, 1976;*  
*Amended Eff. July 1, 1994; July 1, 1984.*

## **2.0803 HIGHWAY PROJECTS (REPEALED)**

*History Note: Filed as a Temporary Amendment Eff. March 8, 1994 for a period of 180 days or until the permanent rule becomes effective, whichever is sooner;  
Authority G.S. 143-215.3(a)(1); 143-215.109;  
Eff. February 1, 1976;  
Amended Eff. July 1, 1994; July 1, 1984;  
Repealed Eff. February 1, 2005.*

## **2.0804 AIRPORT FACILITIES**

(a) This Regulation does not apply to military airfields.

(b) Before constructing or modifying any airport facility designed to have at least 100,000 annual aircraft operations, or at least 45 peak-hour aircraft operations (one operation equals one takeoff, or one landing), the owner or developer of the airport facility shall apply for and have received a permit as described in MCAPCO Section 1.5600 - "Transportation Facility Procedures" and shall comply with all terms and conditions therein.

*History Note: Statutory Authority G.S. 143-215.3(a)(1); 143-215.109;  
Eff. February 1, 1976;  
Amended Eff. July 1, 1996, July 1, 1994; July 1, 1984.*

## **2.0805 PARKING FACILITIES**

(a) The owner or developer of a transportation facility shall not construct or modify a parking area or associated buildings until he has applied for and received a permit under MCAPCO Section 1.5600 - "Transportation Facility Procedures" where the parking area is for:

- (1) construction of a new or expansion of an existing parking lot or combination of parking lots resulting in a parking capacity of at least 1500 spaces or a potential open parking area of at least 450,000 square feet (1500 spaces at 300 square feet per stall);
- (2) modification of an existing parking lot or combination of parking lots with a parking capacity of at least 1500 spaces that will be expanded by at least 500 spaces beyond the last permitted number of spaces;
- (3) construction of a new or expansion of an existing parking deck or garage resulting in a parking capacity of at least 750 spaces or a potential parking area of at least 225,000 square feet (750 spaces at 300 square feet per stall);
- (4) modification of an existing parking deck or garage with a parking capacity of at least 750 spaces that will be expanded by at least 250 spaces beyond the last permitted number of spaces;
- (5) construction of a new or expansion of an existing combination of parking lots, decks, and garages resulting in a parking capacity of at least 1000 spaces or a potential parking area of at least 300,000 square feet;  
or
- (6) modification of an existing combination of parking lots, decks, and garages with a parking capacity of at least 1000 spaces that will be expanded by at least 500 spaces beyond the last permitted number of spaces.

(b) New or modified parking lots, decks, or garages with a parking capacity of 500 or more spaces and existing or proposed parking facilities that:

- (1) are directly adjacent to each other and the combined parking capacities are greater than those defined in Paragraph (a) of this Regulation,  
and
- (2) use the same public roads or traffic network,

shall be considered one lot or deck. Transportation facilities shall be considered to be directly adjacent if they are within 100 meters of each other in a suburban or rural area or 50 meters of each other in an urban area and if there are no existing physical barriers, such as buildings or terrain.

(c) Temporary barriers shall not be used to reduce the capacity of an otherwise affected transportation facility to less than the amount which requires permitting. The design and plan shall clearly show the total parking capacity.

(d) Phased construction shall be evaluated and permitted for a period not to exceed five years from the date of application.

*History Note:* Statutory Authority G.S. 143-215.3(a)(1); 143-215.109;  
Eff. July 1, 1994. Amended Eff. July 1, 1996.

**2.0806 AMBIENT MONITORING AND MODELING ANALYSIS**

(a) The Director may require the owner or developer of a transportation facility subject to the requirements of this Section to conduct ambient air quality monitoring if dispersion modeling, traffic analysis, or other ambient air quality monitoring data indicates that there is a potential for the ambient air quality standard for carbon monoxide to be exceeded. If ambient air monitoring is required, the permit shall specify the duration of such monitoring.

(b) The Director may require the owner or developer of a transportation facility subject to the requirements of this Section to perform dispersion modeling analyses to predict the impact of proposed construction or modification of a transportation facility on ambient air quality, if ambient air quality monitoring, traffic analysis, or other dispersion modeling analysis indicates that there is a potential for the ambient air quality standard for carbon monoxide to be exceeded.

*History Note: Statutory Authority G.S. 143-215.3(a)(1); 143-215.66; 143-215.109;  
Eff. July 1, 1994.*

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## ARTICLE 2.0000 AIR POLLUTION CONTROL REGULATIONS AND PROCEDURES

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## SECTION 2.2000 TRANSPORTATION CONFORMITY

### 2.2001 PURPOSE, SCOPE AND APPLICABILITY

(a) The purpose of this Section is to assure the conformity of transportation plans, programs, and projects that are developed, funded, or approved by the United States Department of Transportation and by metropolitan planning organizations or other recipients of funds under Title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.), or State or Local only sources of funds, with all plans required of areas designated as nonattainment or maintenance under 40 CFR 81.334 and listed in Paragraph (b), (c), or (d) of this Regulation.

(b) This Section applies to the emissions of volatile organic compounds and nitrogen oxides in Mecklenburg County.

(c) This Section applies to the emissions of carbon monoxide in Mecklenburg County.

(d) This Section applies to the emissions of:

- (1) particulate matter in areas identified in 40 CFR 81.334 as nonattainment for fine particulate (PM<sub>2.5</sub>), or
- (2) volatile organic compounds or nitrogen oxides in areas identified in 40 CFR 81.334 as nonattainment for ozone.

(e) This Section applies to FHWA/FTA projects or regionally significant State or local projects. For FHWA/FTA projects or regionally significant State or local projects in the areas identified in Paragraphs (b), (c), or (d) of this Regulation and for the pollutants identified in Paragraphs (b), (c), or (d) of this Regulation, this Section applies to:

- (1) the adoption, acceptance, approval, or support of transportation plans and transportation plan amendments developed pursuant to 23 CFR Part 450 or 49 CFR Part 613 by a metropolitan planning organization or the United States Department of Transportation;
- (2) the adoption, acceptance, approval, or support of transportation improvement programs or amendments to transportation improvement programs pursuant to 23 CFR Part 450 or 49 CFR Part 613 by a metropolitan planning organization or the United States Department of Transportation; or
- (3) the approval, funding, or implementation of FHWA/FTA projects.

Conformity determinations are not required under this Section for individual projects that are not FHWA/FTA projects. However, 40 CFR 93.121 shall apply to these projects if they are regionally significant projects.

(f) This Section applies to maintenance areas for 20 years from the date the Environmental Protection Agency approves the area's request under Section 107(d) of the Clean Air Act for redesignation to attainment.

*History Note:* Statutory Authority G.S. 143-215.3(a)(1); 143-215.107(a)(10);  
Eff. April 1, 1999.  
Amended Eff. December 1, 2005.

## **2.2002 DEFINITIONS**

For the purposes of this Section, the definitions contained in 40 CFR 93.101 and the following definitions apply:

- (1) **“Consultation”** means that one party confers with another identified party, provides all information necessary to that party needed for meaningful input, and considers and responds to the views of that party in a timely, substantive written manner prior to any final decision.
- (2) **“Regionally significant project”** means a transportation project (other than an exempt project under 40 CFR 93.126) that is on a facility that serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls and sports complexes, or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area’s transportation network, including at a minimum all principal arterial highways and all fixed guide way transit facilities that offer an alternative to regional highway travel.
- (3) **“Regionally significant State or local project”** means any highway or transit project that is a regionally significant project and that is proposed to receive only funding assistance (receives no federal funding) or approval through the State or any local program.

*History Note:* Statutory Authority G.S. 143-215.3(a)(1); 143-215.107(a)(10);  
Eff. April 1, 1999.

## **2.2003 TRANSPORTATION CONFORMITY DETERMINATION**

(a) Conformity analyses, determinations, and redeterminations for transportation plans, transportation improvement programs, FHWA/FTA projects, and State or local regionally significant projects shall be made according to the requirements of 40 CFR 93.104 and shall comply with the applicable requirements of 40 CFR 93.119, 93.120, 93.124, 93.125, and 93.126. For the purposes of this Regulation, regionally significant State or local projects shall be subject to the same requirements under 40 CFR Part 93 as FHWA/FTA projects except that State Environmental Policy Act procedures and requirements shall be substituted for National Environmental Policy Act procedures and requirements. Regionally significant State or local projects subject to this Section for which the State Environmental Policy Act process and a conformity determination have been completed may proceed toward implementation without further conformity determination unless more than three years have elapsed since the most recent major step (State Environmental Policy Act process completion, start of final design, acquisition of a significant portion of the right-of-way, or approval of the plans, specifications, and estimates) occurred. All phases of these projects considered in the conformity determination are also

included if these phases were for the purpose of funding final design, right-of-way acquisition, construction, or any combination of these phases.

(b) Before making a conformity determination, the metropolitan planning organizations, local transportation departments, North Carolina Department of Transportation, United States Department of Transportation, the North Carolina Department of Environment and Natural Resources - Division of Air Quality (NCDENR-DAQ), local air pollution control agencies, and United States Environmental Protection Agency shall consult with each other on matters described in **NCAC Title 15A Chapter 2 Subchapter 2D .2005 - “Memorandum of Agreement”**. Consultation shall begin as early as possible in the development of the emissions analysis used to support a conformity determination. The agency that performs the emissions analysis shall make the analysis available to NCDENR-DAQ and at least 21 days shall be allowed for review and comment on the emissions analysis. The 21-day review period shall begin upon receipt of the analysis by the Director of NCDENR-DAQ. After review by NCDENR-DAQ, the approving agency shall seek public comments in accordance with its public participation policy. The agency making the conformity determination shall address all written comments received prior to close of the public comment period, and these comments and responses thereto shall be included in the final document. If NCDENR-DAQ disagrees with the resolution of its comments, the conflict may be escalated to the Governor within 14 days and shall be resolved in accordance with 40 CFR 93.105(d). The 14-day appeal period shall begin upon receipt by the Director of NCDENR-DAQ of the metropolitan planning organization’s resolution that determines conformity.

- (c) The agency that performs the conformity analysis shall notify the NCDENR-DAQ of:
- (1) any changes in planning or analysis assumptions (including land use and vehicle miles traveled (VMT) forecasts), and
  - (2) any revisions to transportation plans or transportation improvement plans that add, delete, or change projects that require a new emissions analysis (including design scope and dates that change the transportation network existing in a horizon year).

Comments made by the NCDENR-DAQ and responses thereto made by the agency shall become part of the final planning document.

(d) Transportation plans shall satisfy the requirements of 40 CFR 93.106. Transportation plans and transportation improvement programs shall satisfy the fiscal constraints specified in 40 CFR 93.108. Transportation plans, programs, and FHWA/FTA projects shall satisfy the applicable requirements of 40 CFR 93.109 through 93.118.

(e) Written commitments to implement control measures that are not included in the transportation plan and transportation improvement program (TIP) shall be obtained before a conformity determination and these commitments shall be fulfilled. Written commitments to implement mitigation measures shall be obtained before a positive conformity determination, and project sponsors shall comply with these commitments.

(f) A recipient of federal funds designated under Title 23 U.S.C. or the Federal Transit Act shall not adopt or approve a regionally significant highway or transit project, regardless of funding source, unless the requirements of 40 CFR Part 93 are fully complied with.

(g) The degree of specificity required in a transportation plan and the specific travel network assumed for air quality modeling shall not preclude the consideration of alternatives in the National Environmental Policy Act of 1969 process, in accordance with 40 CFR 93.107.

(h) When assisting or approving any action with air quality-related consequence, the Federal Highway Administration and the Federal Transit Administration of the Department of Transportation shall give priority to the implementation of those transportation portions of an applicable implementation plan prepared to attain and maintain the national ambient air quality standards as provided under 40 CFR 93.103. This priority shall be consistent with statutory requirements for allocation of funds among states or other jurisdictions.

*History Note:* Statutory Authority G.S. 143-215.3(a)(1); 143-215.107(a)(10);  
Eff. April 1, 1999.

#### **2.2004 DETERMINING TRANSPORTATION-RELATED EMISSIONS**

(a) The procedures in 40 CFR 93.122 shall be used to determine regional transportation-related emissions.

(b) The procedures in 40 CFR 93.123 shall be used to determine localized carbon monoxide concentrations (hot-spot analysis).

*History Note:* Statutory Authority G.S. 143-215.3(a)(1); 143-215.107(a)(10);  
Eff. April 1, 1999.

## **APPENDIX B**

### **2005 High Congestion Locations from the Charlotte Department of Transportation**

## 2005 High Congestion Locations

<b>2005 Count Signal</b>				<b>Volume-to-Capacity</b>		<b>Recommended Improvements</b>
<b>Rank</b>	<b>Date</b>	<b>ID</b>	<b>Intersection Name</b>	<b>AM</b>	<b>PM</b>	
1	10/9/2002	510	FAIRVIEW RD & PROVIDENCE RD & SARDIS RD	1.08	1.24	Additional thru lanes needed on all approaches
2	9/24/2000	457	CENTRAL AV & EASTWAY DR	1.01	1.23	Dual N+S LT on Eastway
3	8/22/2002	323	HARRIS BV & TRYON ST & (US 29 NORTH)	0.92	1.22	Future interchange (NCDOT)
4	7/20/2004	622	OLD PINEVILLE RD & WOODLAWN RD	0.60	1.22	SCIP
5	1/6/2004	493	RANDOLPH RD & SARDIS RD	1.04	1.18	Lengthen OB Dual LT & Lengthen RT from Sardis
6	9/17/2002	675	BILLY GRAHAM PWY & TRYON ST & WOODLAWN RD	1.15	0.93	3rd SBT Lane & NBRT proposed
7	8/26/2002	249	EASTWAY DR & FRONTENAC AV & SHAMROCK DR	0.85	1.14	Additional thru lanes needed on Eastway Dr
8	8/14/2002	227	I-85 SERVICE RD & SUGAR CREEK RD	0.92	1.13	Funded WB RT I-85 Service Rd (In Design)
9	9/25/2002	1518	INDEPENDENCE BV & VILLAGE LAKE DR	0.71	1.13	Proposed Independence Expressway (NCDOT)
10	10/15/2002	451	INDEPENDENCE BV & MARGARET WALLACE RD	0.99	1.12	Proposed Independence Expressway (NCDOT)
11	10/17/2002	506	PROVIDENCE RD & QUEENS RD	1.11	1.08	
12	1/11/2002	352	CHANCELLOR PARK DR & HARRIS BV EB RAMP &	0.90	1.09	Dual lefts SB from Harris Ramp
13	3/6/2002	730	BILLY GRAHAM PWY & MORRIS FIELD DR	0.70	1.08	Dual lefts on Morris Field
14	4/10/2003	947	BEATTIES FORD RD & MT. HOLLY-HUNTERSVILLE RD	1.07	1.02	Add SBRT lane & ped-friendly RT channels on SB&EB Approaches
15	2/15/2001	1562	CARMEL RD & COLONY RD	1.05	1.06	2nd IB Thru lane on Colony
16	8/6/2003	460	CENTRAL AV & SHARON AMITY RD	0.78	1.05	Remove NBRT lane & add dual LT lanes on Sharon Amity
17	7/10/2003	264	GRAHAM ST & I-85 SB RAMP & TRAILER ROAD	0.69	1.05	Dual lefts from I-85 Ramp
18	9/26/2002	446	INDEPENDENCE BV & SHARON AMITY RD	0.94	1.04	Funded Independence Expressway (NCDOT)
19	7/23/2003	729	BILLY GRAHAM PWY & WEST BV	0.91	1.04	Future Interchange, Possible EB Dual LT by developer

**2005 Count Signal**

<b>Rank</b>	<b>Date</b>	<b>ID</b>	<b>Intersection Name</b>	<b>Volume-to-Capacity</b>		<b>Recommended Improvements</b>
				<b>AM</b>	<b>PM</b>	
20	9/10/2002	1551	BALLANTYNE COMMONS PWY & ELM LN	1.04	0.71	Dual lefts &/or ped-friendly RT channels from Elm Lane
21	1/15/2003	348	BACK CREEK CHURCH RD & PAVILLION BV & UNIVERSITY	1.03	0.92	NCDOT/RR Proposed Dual LT from Back Creek
22	8/21/2002	235	MATHESON AV & THE PLAZA	0.86	1.03	OB RT Ln on Plaza & Round-a-bouts @ unsignalz Virginia Rd
23	5/11/2004	648	PARK RD & WOODLAWN RD	0.90	1.02	
24	12/2/2004	894	FREEDOM DR & LITTLE ROCK RD & MOORES CHAPEL RD	0.99	1.01	Funded Freedom Dr widening (City)
25	6/24/2003	448	IDLEWILD RD & INDEPENDENCE BV	0.97	1.01	Funded Independence Expressway (NCDOT)
26	7/16/2002	1507	PINEVILLE-MATTHEWS RD & REA RD	0.83	1.01	Dual lefts WB (NC Moving Ahead)
27	12/11/2003	1503	COLONY RD & FAIRVIEW RD	1.01	0.76	Proposed Dual SBLT Colony (City)
28	7/1/2003	746	HEBRON ST & SOUTH BV	0.68	1.01	
29	10/22/2002	509	PROVIDENCE RD & SHARON AMITY RD & SHARON LN	1.00	0.94	
30	10/16/2002	488	RANDOLPH RD & WENDOVER RD	0.90	1.00	
31	7/16/2002	328	HARRIS BV & MALLARD CREEK RD	0.84	1.00	
32	8/8/2002	333	HARRIS BV & MEDICAL PLAZA DR & IBM DR WEST	0.82	1.00	Sidestreet (Timing satisfies Main Street volumes)
33	12/15/2004	447	FARMINGDALE DR & GLENDORA DR & INDEPENDENCE BV	0.99	0.99	Future=Signal to be removed
34	9/5/2002	444	ALBEMARLE RD & SHARON AMITY RD	0.97	0.99	Albemarle Rd widening (NCDOT)
35	8/5/2004	848	LITTLE ROCK RD & WILKINSON BV	0.90	0.99	Future Interchange (NCDOT)
36	5/13/2004	529	FAIRVIEW RD & SHARON RD	0.89	0.99	Fairview Rd & Sharon Rd widening (City)
37	6/2/2004	1543	IDLEWILD RD & PINEY GROVE RD	0.99	0.66	Future Idlewild widening project
38	10/10/2002	781	DIXIE RD & WEST BV & (NC 160)	0.98	0.96	West Bv widening & relocation (City) compl.'07
39	10/15/2002	243	HARRIS BV & THE PLAZA	0.98	0.94	2nd IB Lane on The Plaza
40	8/3/2004	700	TYVOLA RD & YORKMONT RD	0.90	0.98	EB dual LT

<b>2005 Count Signal</b>				<b>Volume-to-Capacity</b>		<b>Recommended Improvements</b>
<b>Rank</b>	<b>Date</b>	<b>ID</b>	<b>Intersection Name</b>	<b>AM</b>	<b>PM</b>	
41	9/17/2003	676	NATIONS FORD RD & TRYON ST & YORKMONT RD	0.89	0.98	Dual LT from Yorkmont
42	6/4/2003	1569	BALLANTYNE COMMONS PWY & JOHNSTON RD & (US 521)	0.97	0.93	Dual N&S LT on Johnston
43	9/24/2002	1432	HARRIS BV & INDEPENDENCE BV	0.91	0.97	Funded WB RT Independence Bv (In design)
44	4/7/2004	516	CARMEL RD & FAIRVIEW RD	0.97	0.90	Additional storage for Fairview
45	8/19/2004	727	WEST BV & YORKMONT RD & ( OLD TERMINAL	0.97	0.90	West Bv widening & relocation (City) compl.'07
46	7/15/2003	625	SOUTH BV & TYVOLA RD	0.82	0.97	SCIP Dual LT on Tyvola
47	7/15/2004	544	BARCLAY DOWNS DR & FAIRVIEW RD & TELSTAR LN	0.82	0.97	Sidestreet (Timing satisfies Main Street volumes)
48	7/21/2004	507	COLVILLE RD & PROVIDENCE RD	0.80	0.97	Sidestreet (Timing satisfies Main Street volumes)
49	7/16/2003	621	SOUTH BV & WOODLAWN RD	0.73	0.97	Dual LT South & RT Woodlawn (In design)
50	4/1/2003	946	MT.HOLLY/HUNTERSVILLE RD. & VANCE RD	0.97	0.66	Developer build NBRT lane on Mt.Holly-Huntersville
51	1/31/2003	684	BEAM RD & TRYON ST & (NC 49)	0.63	0.97	Minor Roadway Project
52	10/8/2003	340	HARRIS BV & I-85 SB RAMP	0.61	0.97	SB Dual lefts
53	6/29/2004	1423	IDLEWILD RD & MARGARET WALLACE RD	0.96	0.96	Additional thru lane for EB Idlewild and/or NB Margaret Wallace
54	9/11/2002	786	BROWN GRIER RD & STEELE CREEK RD & (NC 160)	0.96	0.93	I-485 completed project
55	10/8/2002	654	FAIRVIEW RD & PARK RD & TYVOLA RD	0.93	0.96	
56	7/30/2003	474	MONROE RD & WENDOVER RD	0.92	0.96	
57	8/6/2002	508	PROVIDENCE RD & WENDOVER RD	0.96	0.91	
58	2/14/2003	1509	JOHNSTON RD & PINEVILLE-MATTHEWS RD & (NC 51)	0.89	0.96	
59	10/9/2002	741	OLD DOWD RD & WALLACE NEAL RD	0.96	0.89	Airport Project will relocate to West of 485
60	10/2/2002	775	STEELE CREEK RD & WESTINGHOUSE BV & (NC 160)	0.88	0.96	Funded LT's on NC 160 (In design)
61	9/11/2003	685	ARROWOOD RD & TRYON ST & ( NC 49 )	0.96	0.72	

**2005 Count Signal****Rank Date ID Intersection Name****Volume-to-Capacity****AM PM Recommended Improvements**

62	11/19/2004	677	TRYON ST & TYVOLA RD	0.95	0.87	Extend EBRT lane on Tyvola
63	7/24/2003	354	HARRIS BV & RESEARCH DR & IBM DR	0.69	0.95	Rebuild to remove split phasing
64	9/2/2003	321	HARRIS BV & SHARON AMITY RD	0.61	0.95	
65	6/24/2003	46	3RD ST & MCDOWELL ST	0.43	0.95	

## APPENDIX C

**Amendment 2 - Conformity Analysis and Determination Report for the Cabarrus-Rowan MPO, the Gaston Urban Area MPO, and the Mecklenburg-Union MPO 2030 Long Range Transportation Plans and the FY 2007-2013 State Transportation Improvement Programs and for Non-MPO Areas of Lincoln County, Iredell County, Gaston County, and Union County Areas**

- **Conformity Analysis and Determination Report – Main Text**
- **Appendix D – Sections Pertaining to Union and Mecklenburg Counties**

*FINAL*

## Amendment 2

**Conformity Analysis and Determination Report for  
the Cabarrus-Rowan MPO, the Gaston Urban Area  
MPO, and the Mecklenburg-Union MPO 2030 Long  
Range Transportation Plans and the FY 2007-2013  
State Transportation Improvement Programs and  
for Non-MPO Areas of Lincoln County, Iredell  
County, Gaston County, and Union County areas**

May 25, 2007

*June 29, 2007*  
*USDOT Conformity Finding*

Prepared by:

The North Carolina Department of Transportation as an agent of:

The Cabarrus-Rowan Metropolitan Planning Organization,  
The Gaston Urban Area Metropolitan Planning Organization,  
The Mecklenburg-Union Metropolitan Planning Organization,  
The Lake Norman Rural Planning Organization,  
The Rocky River Rural Planning Organization

In cooperation with:

The North Carolina Department of Environment and Natural Resources  
Division of Air Quality

*FINAL – 05/25/07*

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Additional copies of this report can be obtained from the following websites:  
[www.crmppo.org](http://www.crmppo.org), [www.gastonmpo.org](http://www.gastonmpo.org), and [www.mumpo.org](http://www.mumpo.org).

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## INTRODUCTION

This report constitutes Amendment 2 to the Conformity Determination Report dated June 8, 2005 prepared on behalf of:

- The Cabarrus-Rowan Metropolitan Planning Organization (CRMPO);
- The Gaston Urban Area Metropolitan Planning Organization (GUAMPO);
- The Mecklenburg-Union Metropolitan Planning Organization (MUMPO);
- The portion of the Lake Norman Rural Planning Organization (RPO) in Western Gaston County, Lincoln County, and Southern Iredell County; and
- The portion of the Rocky River Rural Planning Organization (RPO) in Eastern and Southern Union County.

Based on the results of the analysis described in this report, the 2030 Long-Range Transportation Plans (LRTPs) for CRMPO, GUAMPO, and MUMPO, and their latest, respective Transportation Improvement Programs (TIPs) conform to the purpose of the North Carolina State Implementation Plan (SIP) (or interim emissions tests, in areas where no State Implementation Plan is approved or found adequate by EPA). This transportation conformity determination is supported by the following findings:

- The Fiscal Year (FY) 2007-2013 TIP is a direct subset of the conforming 2030 LRTPs.
- Each LRTP has a 20-year planning horizon.
- The conformity determinations for the RPOs (donut areas<sup>1</sup>) were made by the North Carolina Department of Transportation (NCDOT). NCDOT concluded that the projects in the donut areas included in the FY 2007-2013 TIP conform to the purpose of the North Carolina SIP (or interim emissions tests, in areas where no State Implementation Plan is approved or found adequate by EPA).

The 2030 LRTPs were adopted:

- by the Cabarrus-Rowan MPO on May 18, 2005
- by the Gaston Urban Area MPO on May 24, 2005
- by the Mecklenburg-Union MPO on June 8, 2005

Periodically, as needs and conditions change, it becomes necessary to amend the LRTPs. The above-named MPOs, Lake Norman and Rocky River Rural Planning Organization are taking this opportunity to analyze the transportation conformity implications of the FY 2007-2013 TIP adopted by the North Carolina Board of Transportation on March 1, 2007. The changes in the FY 2007-2013 TIP significant to conformity are that seven projects in the region will be rescheduled

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<sup>1</sup> Donut areas are geographic areas outside a MPO, but inside the boundary of a nonattainment or maintenance area. Donut areas are not isolated rural nonattainment and maintenance areas.

from the 2010 horizon year to the 2020 horizon year and one project will be rescheduled from the 2030 horizon year to the 2020 horizon year. Four of these projects are regionally significant and/or federally funded. These changes warrant reevaluation and reaffirmation of the transportation conformity determination.

A copy of the 2030 LRTP for each MPO is available on-line at, [www.crmppo.org](http://www.crmppo.org), [www.gastonmpo.org](http://www.gastonmpo.org), and [www.mumpo.org](http://www.mumpo.org).

### **AMENDED PROJECTS**

As noted above, this amendment includes changes in the timing of projects included in the FY 2007-2013 TIP for the geographic area presented in Figure 1. Changes in the horizon years for this group of four regionally-significant projects resulted in having to do a new regional emissions analysis for this transportation conformity determination. As agreed by the interagency consultation partners, the regional emissions analysis work for this process began on March 16, 2007 and was completed on March 21, 2007. Details related to the interagency consultation associated with this conformity determination can be found in Appendix P.

Non-exempt projects that represent a change in timing of an existing LRTP project may be required to be part of travel demand model assumptions for the appropriate analysis year. All projects in this amendment will be implemented by 2020; therefore, they are included in the travel model assumptions for that horizon year. Table 1 provides a summary of the project horizon year changes. This amendment also provides an opportunity to incorporate the most current cost estimates as required in the fiscal constraint requirements for the LRTPs. No significant overall cost or fiscal capacity changes are associated with the changes of costs for some projects. This conformity analysis will focus on the project changes presented below:

#### Cabarrus-Rowan MPO Project

All projects in the 2007-2013 MTIP are a direct subset of the currently conforming LRTP (May 18, 2005).

#### Gaston Urban Area MPO Projects

TIP Project U-4915 in Bessemer City was rescheduled by the North Carolina Board of Transportation to occur after 2010. The project is now scheduled to be completed by 2020. The project is located off SR 1307 (Edgewood Road). The road will be widened to three lanes.

#### Mecklenburg-Union MPO Projects

TIP Project U-4024A (US 601 widening) in Monroe was rescheduled by the North Carolina Board of Transportation to occur beyond 2010. The project will be completed by 2020. The project involves widening of US 601 from existing US

74 to the proposed Monroe Bypass (R-2559). This project is regionally significant and federally funded.

TIP Project R-2559 (US 74 Monroe Bypass) in Union County was rescheduled by the North Carolina Board of Transportation to be built beyond 2010. The project will be completed by 2020. The project extends from west of US 601 north of Monroe to existing US 74 west of Marshville. This project is regionally significant and is federally funded.

TIP Project R-0211EC was rescheduled by the North Carolina Board of Transportation to occur beyond 2010. The project will be completed by 2020. The project involves the construction of a new interchange at the existing grade separation of I-485 and SR 3468 (Weddington Road) in Mecklenburg County. This project is regionally significant and federally funded.

TIP Project U-2507A was rescheduled by the North Carolina Board of Transportation to occur beyond 2010. The project will be completed by 2020. The project involves the widening and new location construction for SR 2467 (Mallard Creek Road) from SR 2480 (Sugar Creek Road) to SR 2665 (Harris Boulevard) in Mecklenburg County. This project is regionally significant and federally funded.

TIP Project U-2547 in Monroe was rescheduled by the North Carolina Board of Transportation to occur beyond 2010. The project will be completed by 2020. The project involves making capacity improvements to SR 2188 (Charles Street) from SR 2181 (Sunset Drive) to SR 2100 (Franklin Street). While this project is not regionally significant, it is federally funded.

TIP Project U-3467 was scheduled by the North Carolina Board of Transportation for construction prior to 2020. This project was previously scheduled to be completed by 2030. The project involves the extension of SR 1316 (Rea Road) from NC 16 to SR 1008 (Indian Trail-Waxhaw Road). While this project is not regionally significant, it is federally funded.

TIP Project U-2704 was rescheduled by the North Carolina Board of Transportation to occur beyond 2010. The project will be completed by 2020. The project involves interchange improvements at US 29/74 (Wilkinson Boulevard) and SR 5901 (Billy Graham Parkway). While this project is not regionally significant, it is federally funded.

In the event that the regional emissions analysis for the Mecklenburg Union Metropolitan Planning Organization (MUMPO) and the Gaston Urban Area Metropolitan Planning Organization (GUAMPO) 2030 long range transportation plan (LRTP) amendments cannot be completed in a timely fashion prior to June 30, 2007, a transportation conformity determination will be made only for those projects in the 07-13 State/Metropolitan Transportation Improvement Programs (TIPs) that are direct subsets of the currently conforming MUMPO and GUAMPO

2030 LRTPs.

Table 1. Project Amendment Summary

Plan ID/ County	Route	Description	Scope Change Y = yes N = no * = add to TIP	Original AQ Analysis Year	Revised AQ Analysis Year
U-4915/Gaston	NC-273	CONSTRUCT EXTENSION OF SOUTHRIDGE PARK DRIVE OFF SR 1307 (EDGEWOOD RD.).	N	2010	2020
U-4024A / Union	US 601	US 601, US 74 TO THE PROPOSED MONROE BYPASS (R-2559). WIDEN TO MULTI-LANES.	N	2010	2020
R-2559 / Union	US 74	MONROE BYPASS. FOUR LANES DIVIDED ON NEW LOCATION.	N	2010	2020
U-2547/ Union	SR 2188	SR 2188 (CHARLES STREET), SR 2181 (SUNSET DRIVE) TO SR 2100 (FRANKLIN STREET). WIDEN TO MULTI-LANES.	N	2010	2020
R-0211EC / Mecklenburg	I-485	I-485/SR 3468 (WEDDINGTON ROAD). CONSTRUCT INTERCHANGE.	N	2010	2020
U-2507A/ Mecklenburg	SR 2467	SR 2467 (MALLARD CREEK ROAD), SR 2480 (SUGAR CREEK ROAD) TO SR 2665 (HARRIS BOULEVARD). WIDEN TO MULTI-LANES, PART ON NEW LOCATION.	N	2010	2020
U-3467/ Union	SR 1316	SR 1316 (REA ROAD) EXTENSION, NC 16 TO SR 1008 (INDIAN TRAIL-WAXHAW ROAD). MULTI-LANES, PART ON NEW LOCATION.	N	2030	2020
U-2704/ Mecklenburg	US 29/74	US 29-74 (WILKINSON BOULEVARD) AND SR 5901 (BILLY GRAHAM PARKWAY). AREA IMPROVEMENTS.	N	2010	2020

### **AMENDED FISCAL CONSTRAINT DETERMINATION**

As part of the federal transportation planning requirements 23 CFR 450 and 500 for LRTPs, the costs of implementing transportation programs and projects included in LRTPs are compared with the funding expected to be available. These LRTPs' financial analyses were developed in response to the requirements for "financially constrained plans".

These LRTPs consider capital costs and operation and maintenance (O&M) costs associated with the preservation and continued operation of the existing transportation system, as well as the costs associated with the recommended expansion of the transportation networks included in the LRTPs. The LRTPs also describe revenues from all sources that will be available to pay for capital and O&M costs. Each LRTP describes in detail its own financing plan. The financial constraints for each LRTP were also summarized in Chapter 3 of the June 30, 2005 Conformity document.

Assumptions for revenues and expenditures are the same as shown in the original document because overall costs of projects did not change significantly. The only changes affect the air quality analysis years, as described in Table 1.

### **TRANSPORTATION CONFORMITY**

The conformity determination accomplishes the intent of the North Carolina State Implementation Plan (SIP) (or interim emissions tests, in areas where no SIP is approved or found adequate). This conformity determination is based on a regional emissions analysis that uses the transportation network approved by each of the above-named Metropolitan Planning Organizations (MPOs) for their 2030 LRTPs, donut area projects from the FY 2007-2013 for the Rural Planning Organizations (RPOs) and the emissions factors developed by the North Carolina Department of Environment and Natural Resources (DENR). Based on this analysis, the GUAMPO amended 2030 LRTP, the MUMPO amended 2030 LRTP, the CRMPO 2030 LRTP and their respective FY 2007-2013 Transportation Improvement Programs (TIPs) conform to the purpose of the North Carolina SIP (or interim emissions tests, in areas where no SIP is approved or found adequate). The FY 2007-2013 TIPs (i.e., project scope/description, project length, number of lanes) and horizon year (project completion) are direct subsets of the conforming 2030 Long-Range Transportation Plans (LRTPs). The LRTPs have a 20-year planning horizon. The conformity determination for the RPOs (donut areas) was made by the North Carolina Department of Transportation (NCDOT). RPO (donut area) projects conform to the purpose of the North Carolina SIP (or interim emissions tests, in areas where no SIP is approved or found adequate).

Mecklenburg County was originally declared to be in nonattainment for carbon monoxide (CO) on March 3, 1978. Mecklenburg County was declared to be in nonattainment for ozone on November 15, 1990. Following the Clean Air Act

Amendments of 1990, the USEPA designated Mecklenburg County as a moderate nonattainment area for ozone and “not-classified” for CO. Mecklenburg County was re-designated as a maintenance area for ozone on July 5, 1995 and for CO on September 18, 1995.

Gaston County was declared to be in nonattainment for ozone on November 15, 1990. Gaston County was re-designated as a maintenance area for ozone on July 5, 1995.

In 1997 the NAAQS for ozone was reviewed and revised to reflect improved scientific understanding of the health impacts of this pollutant. When the standard was revised in 1997, an eight-hour ozone standard was established. In April 2004, the USEPA declared the entire Metrolina area (as shown in Figure 1) as being in moderate nonattainment for eight-hour ozone. This area includes:

- The Cabarrus-Rowan Metropolitan Planning Organization (CRMPO);
- The Gaston Urban Area Metropolitan Planning Organization (GUAMPO);
- The Mecklenburg-Union Metropolitan Planning Organization (MUMPO);
- The portion of the Lake Norman Rural Planning Organization in western Gaston County, Lincoln County, and southern Iredell County;
- The portion of the Rocky River Rural Planning Organization in eastern and southern Union County; and
- The Rock Hill, Fort Mill Area Transportation Study (RFATS) an MPO comprising the urbanized (eastern) half of York County, SC.

Although a portion of York County, South Carolina was designated as part of the bi-state Charlotte 8-hour ozone nonattainment area, they are allowed to demonstrate transportation conformity independent of the North Carolina portion of this nonattainment area. As thus, the planning assumptions and methodologies used for the York County, South Carolina portion of this nonattainment area is reflected in a separate transportation conformity determination that is generated by the Rock Hill-Fort Mill Area Transit Study Metropolitan Planning Organization.

This conformity analysis applies the same travel model and planning assumptions, except the highway network amendments described in Table 1, as included in the original 2030 LRTPs. There were slight changes in some of the Mobile 6.2 emissions factors as a result of the shifting of projects. Those changes are documented in the amended Appendix E.

For Carbon Monoxide, vehicle miles of travel (VMT), the VMT normalization, emissions factors used to calculate the emissions budget, and the interpolation equations for 2002 are shown in amended Appendix H.

The transportation conformity emissions for NO<sub>x</sub> and VOC for 2002, 2010, 2020, and 2030 use vehicle miles of travel (VMT) and speeds from the MUMPO 2030

LRTP and the GUAMPO 2030 LRTP. Conformity emissions for Mecklenburg County include off-model emissions reductions for Incident Management on Interstates and Freeways. The techniques used for this 2007-2013 TIP conformity process are the following:

- VMT and speed will be done for 4 times of day (the 4 times of days are summed for the regional emissions analysis)
  - 6:30 am - 9:30 am
  - 9:30 am - 3:30 pm
  - 3:30 pm - 6:30 pm
  - 6:30 pm - 6:30 am
- Off model work (applied to all scenarios):
  - ITS enhanced
  - Signal System
  - Vanpool
- Updated vehicle starts from the new model were also added

**Incident Management** - Incident management reduces congestion by removing vehicles that have been involved in an accident or are simply just broken down. This is not a benefit that can be reflected through the travel demand model therefore, the effect must be determined through off-model calculations. Reductions in emissions for the Metrolina non-attainment area were calculated based on guidance provided in, *Off-Model Air Quality Analysis: A Compendium of Practice*, Federal Highway Administration, Southern Resource Center, 1999, page 18.

Emissions are reduced as a result of implementing incident detection and response along interstates and freeways in the Metrolina region. The projects analyzed are outlined in the *Metrolina Regional ITS Deployment Plan*, one of nine reports comprising the *Statewide Strategic ITS Deployment Plan*. The future year projects analyzed for Mecklenburg County are listed in Tables 6-7, 6-8, and 6-9 of MUMPO's *2030 Long Range Transportation Plan*. All freeway segments analyzed in Cabarrus and Rowan Counties currently have incident detection and response in place.

Regional interstate, freeway, and HOV emissions were calculated based on emission factors established by the North Carolina Department of the Environment and Natural Resources (NCDENR) and based on speeds and VMT provided by the Charlotte Department of Transportation. Daily reductions were calculated by applying the following equation to the AM peak period, midday, PM peak period, and night time periods analyzed in the model.

$$E_D = VMT_I * E_C / VMT_T * EFF$$

Where:

$VMT_I = \text{VMT of Freeway / Interstate}$

$VMT_T = \text{Regional Freeway / Interstate VMT}$

$E_C = \text{Regional Freeway / Interstate Emissions} * 0.049$

EFF = Project Effectiveness, 50% for Incident Detection and Response

**Vanpool Programs** - Vanpool programs reduce emissions by reducing the number of vehicle trips during the AM and PM peak periods. Although the Metrolina Regional Travel Demand Model captures the effect of carpooling, it does not reflect the benefit of the Charlotte Area Transit System's Vanpool Program. Reductions in emissions for the Metrolina non-attainment area were calculated based on guidance provided in, *Off-Model Air Quality Analysis: A Compendium of Practice*, Federal Highway Administration, Southern Resource Center, 1999, page 16.

The following equations were used to calculate the reduction in emissions due to vanpooling.

$\text{NOx Reductions(kg/day)} = \text{Net Reduction of Miles} * (\text{Emission Factor(g/mi)} / 1000)$

where:  $\text{Net Reduction of Miles} = (\text{Cars Removed} * \text{Avg. Commute per Vehicle}) -$   
 $(\text{\# of Vanpools} * \text{Avg. Commute per Vehicle})$   $\text{Cars Removed} = (\text{\# of Vanpools} * \text{Avg. \# of Riders}) / \text{Commute Vehicle Occupancy Rate}$

### **Intersection Improvements – Traffic Signal Computer Upgrade -**

Although the Metrolina Regional Travel Demand Model captures the effect of intersection controls on speed and capacity, it does not reflect the benefit of coordinated signal systems. As such, the effect must be determined through off-model calculations. Reductions in emissions for the Metrolina Non-Attainment Area were calculated based on guidance provided in, *Off-Model Air Quality Analysis: A Compendium of Practice*, Federal Highway Administration, Southern Resource Center, 1999, page 5.

The Charlotte Department of Transportation's Engineering and Operations Division, the City of Salisbury's Engineering Division, the City of Concord's Transportation Department, and NCDOT provided information regarding the number of signal systems, average time savings per signalized intersection, and the average number of signals per system. The average number of vehicles per peak period was calculated by computing the vehicle miles of travel on each roadway segment affected by the signal systems and then dividing by the total number of miles covered by the signal systems.

Emission factors were established by the North Carolina Department of the Environment and Natural Resources (NCDENR) based on speeds provided by the Charlotte Department of Transportation. Coordinated signal systems in the Metrolina region optimize travel time with different signal patterns for 24 hours and different patterns on weekends. While this reduces idling time for the full

day, we feel it is appropriate to use the more conservative approach of assuming air quality benefits only when congestion is heaviest in the AM and PM peak periods.

The following equation was used to calculate emission benefits:

$$\text{NOx Reductions (kg/day)} = \text{AM Peak Period Emission Rate (kg/veh hr)} * \text{Savings in Idle Time (hrs/AM peak period)} + \text{PM Peak Period Emission Rate (kg/veh hr)} * \text{Savings in Idle Time (hrs/PM peak period)}$$

$$\text{VOC Reductions (kg/day)} = \text{AM Peak Period Emission Rate (kg/veh hr)} * \text{Savings in Idle Time (hrs/AM peak period)} + \text{PM Peak Period Emission Rate (kg/veh hr)} * \text{Savings in Idle Time (hrs/PM peak period)}$$

$$\text{CO Reductions (kg/day)} = \text{AM Peak Period Emission Rate (kg/veh hr)} * \text{Savings in Idle Time (hrs/AM peak period)} + \text{PM Peak Period Emission Rate (kg/veh hr)} * \text{Savings in Idle Time (hrs/PM peak period)}$$

where:

$$\text{Savings in Idle Time (hrs/day)} = \text{Vehicles per Peak Period} * \text{Avg. \# of Signals per System} * \text{\# of Signal Systems} * \text{Avg. Time Savings per Signal per Dir./ 3600 (sec/hr)}$$

The VMT, the VMT normalization and emissions factors used to calculate the emissions budget, and the interpolation equations for 2002 are shown in amended Appendix G

Table 2 contains a summary of results from the Gaston County budget comparison, and Table 3 provides the same summary for Mecklenburg County.

In every horizon year for every pollutant, the emissions expected from the implementation of the LRTPs are less than the emissions budgets for Mecklenburg County and Gaston County adopted in the Maintenance Plan and established in the SIP. The other counties in the nonattainment area do not have emissions budgets at this time.

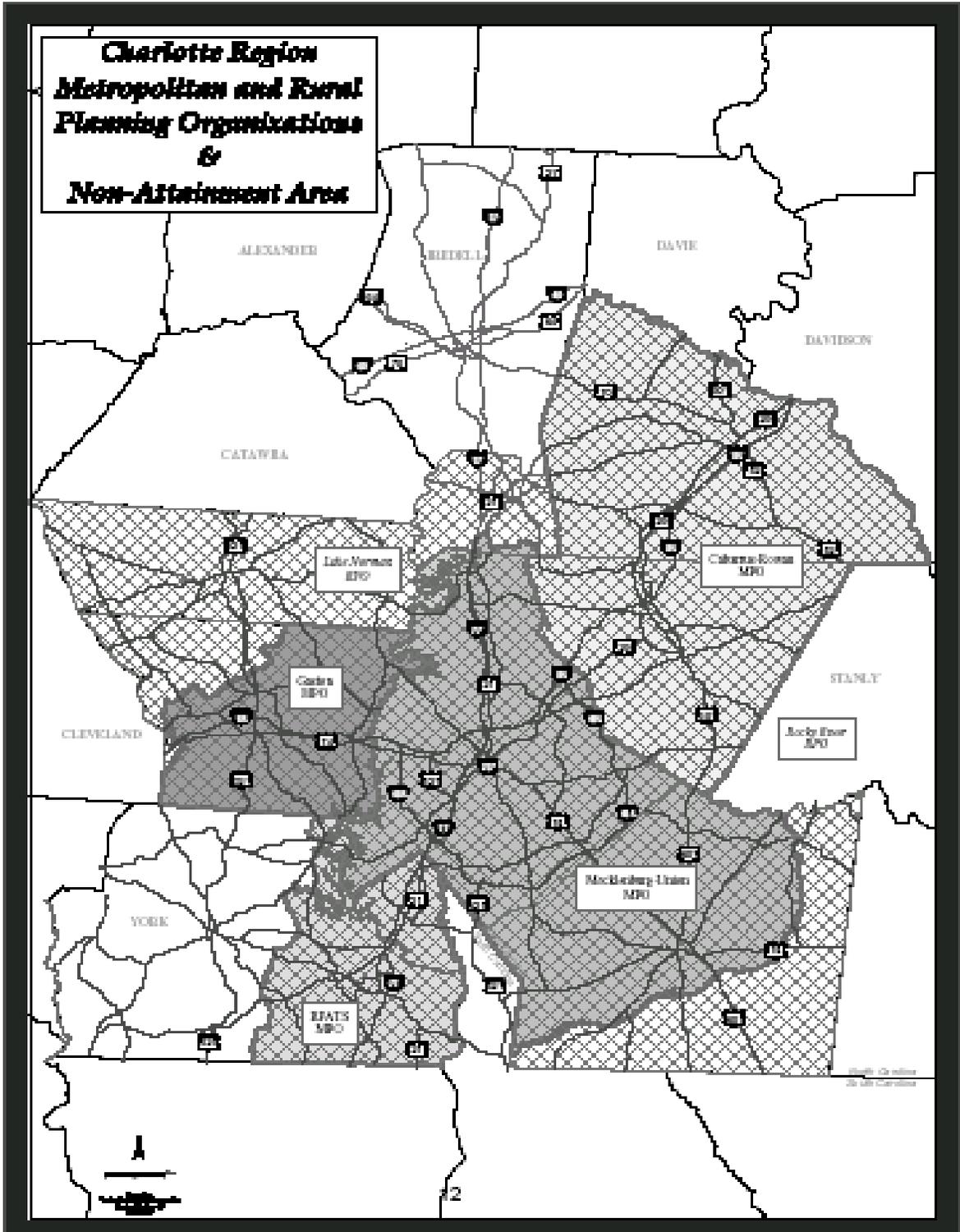
For the nonattainment area as a whole, prescribed interim tests were performed for NOx and VOC, in lieu of budget comparisons. Table 4 provides a summary of the interim test results.

**Table 2. Gaston County Emissions Comparison Summary - 1 Hour Ozone**

Gaston County Emissions Comparison Summary (tons/day) <sup>1</sup>				
Year	NO <sub>x</sub>		VOC	
	Confor- mity	SIP Budget	Confor- mity	SIP Budget
2010	5.8	8.7	3.8	5.7
2020	2.4	8.7	2.8	5.7
2030	1.7	8.7	2.3	5.7

<sup>1</sup>To obtain kilograms per day, multiply tons per day by 907.18.

Figure 1. MPO and Non-MPO areas Comprising the Metrolina Nonattainment Area



**Table 3. Mecklenburg County Emissions Comparison Summary - 1 Hour Ozone and CO**

Mecklenburg County Emissions Comparison Summary (tons/day) <sup>1</sup>						
Year	CO		NO <sub>x</sub>		VOC	
	Confor- mity	SIP Budget	Confor- mity	SIP Budget	Confor- mity	SIP Budget
2010	279.90	419.62	20.81	33.0	14.76	25.9
2020	327.59	470.18	8.30	33.0	9.59	25.9
2030	367.74	470.18	6.90	33.0	9.23	25.9

<sup>1</sup>To obtain kilograms per day, multiply tons per day by 907.18.

**Table 4. Regional Interim Emissions Test Comparison Summary**

Comparison: Metrolina Region Future Year Emissions Less Than Base Year Emissions and Build Emissions Less Than No-Build Emissions (kg/day)						
	NO <sub>x</sub>			VOC		
	Confor- mity	Build < Base year	Build < No- Build	Confor- mity	Build < Base year	Build < No- Build
Base year 2002	103,089			66,983		
Future year						
2010 Build	55,451	Yes	Yes	40,996	Yes	Yes
2010 No-Build	55,622			41,168		
2020 Build	23,666	Yes	Yes	25,760	Yes	Yes
2020 No-Build	23,711			27,187		
2030 Build	18,280	Yes	Yes	24,567	Yes	Yes
2030 No-Build	18,513			25,677		

Based on the results of the analysis and the interagency consultation meetings discussed in this Amendment 2, the 2030 CRMPO LRTP, the 2030 GUAMPO LRTP, and the 2030 MUMPO LRTP, together with the 2007-2013 STIP projects in the non-MPO donut areas, conform to the purpose of the North Carolina State Implementation Plan (or interim emissions tests in areas where no SIP has been approved or found adequate). In every analysis year for every pollutant, the emissions expected from the implementation of the long-range transportation plans are less than the emissions budget for each MPO as adopted in the Maintenance Plan and established in the SIP. In addition, in every analysis year for every pollutant, the 2030 CRMPO LRTP, the 2030 GUAMPO LRTP, and the 2030 MUMPO LRTP, together with the 2007-2013 STIP projects in the non-MPO areas pass all interim emissions tests for the eight hour ozone standard.

The North Carolina State Implementation Plan does not contain any transportation control measures (TCM's), therefore, nothing in this Amendment 2 can interfere with the timely implementation of TCMs.

**PUBLIC INVOLVEMENT**

The 2030 LRTPs for CRMPO, GUAMPO, and MUMPO, as well as the Transportation Conformity Report, were developed with significant attention to public involvement. Provisions for public comment on this Amendment 2 were provided through a 30-day public review and comment period. Advertisements are included in the amended Appendix K. Public comments are summarized in the amended Appendix M.

Appendices A, B, D and are not included in this report because their contents did not change from the conformity document dated June 8, 2005

# Appendix D, Part 3 – MUMPO

### **Financially Constrained 2010 Transit System, Mecklenburg County**

In the 2010 network the bus fleet will have expanded to 375 revenue vehicles. Paratransit service (103 vehicles) is below the scope of the travel demand models. This will allow expansion of existing routes, creation of new routes, and the improvement of operational characteristics on all routes. Construction on some of the rapid transit corridors will be underway and service is expected along the following corridors.

South Corridor: Light Rail Transit (LRT) service will be operating parallel to South Boulevard from Seventh Street in Uptown Charlotte to a large park-and-ride lot adjacent to I-485 near Pineville, NC.

Northeast corridor. LRT service will be extended from Seventh Street in Uptown Charlotte to the NoDa (North Davidson Street) area of North Charlotte.

North Corridor: Commuter Rail service will use the Norfolk-Southern “O” line from the Multimodal Station on West Trade Street in Uptown Charlotte to a station north of Mooresville, NC. Enhanced Bus Service will use the newly constructed HOV lanes on I-77 to connect north Charlotte, Huntersville, Cornelius, Davidson and Mooresville to Uptown Charlotte.

### **Financially Constrained 2020 Transit System, Mecklenburg County**

In the 2020 network the bus fleet will expand to 569 revenue vehicles. Construction of the rapid transit corridors will result in these additional services:

Southeast Corridor: Bus Rapid Transit (BRT) service is proposed to extend from Uptown Charlotte to the Central Piedmont Community Campus near I-485 in Matthews, NC.

West Corridor: Bus Rapid Transit service is proposed to extend from Uptown Charlotte to the Charlotte-Douglas International Airport along Wilkinson Boulevard. Enhanced bus service will be provided along Freedom Drive and Tyvola Road.

Northeast Corridor: LRT service will be extended from the NoDa area to the US-29/I-485 interchange area in northeast Mecklenburg (near UNC-Charlotte).

Streetcar: Streetcar service will begin in at Eastland Mall, serve Central Avenue, the Center City, Johnson C. Smith University, and the Beatties Ford Road corridor (ending at I-85). The streetcar will serve as the primary connecting link between the Charlotte Transportation Center (LRT and BRT) and the Multimodal Center (Commuter Rail and BRT) in Uptown Charlotte.

### **Financially Constrained 2030 Transit System, Mecklenburg County**

In the 2030 network the bus fleet will expand to 787 buses. Construction

of the rapid transit corridors will result in these additional services:

Northeast Corridor: Bus Rapid Transit (BRT) and Enhanced Express Bus will connect University City and University Research Park to the Northeast LRT and to Uptown.

West Corridor: Enhanced Bus Service will extend from the Airport to I-485. Commuter bus routes from Gaston Co. will use the BRT facility.

Center City circulation: Streetcar service in the Center City will be enhanced.

South Corridor: Expanded service from the Rock Hill area will be included.



**Figure D- 3. MUMPO 2010 Roadway Network map**

# 2010 Horizon Year Roadway Projects Mecklenburg-Union MPO

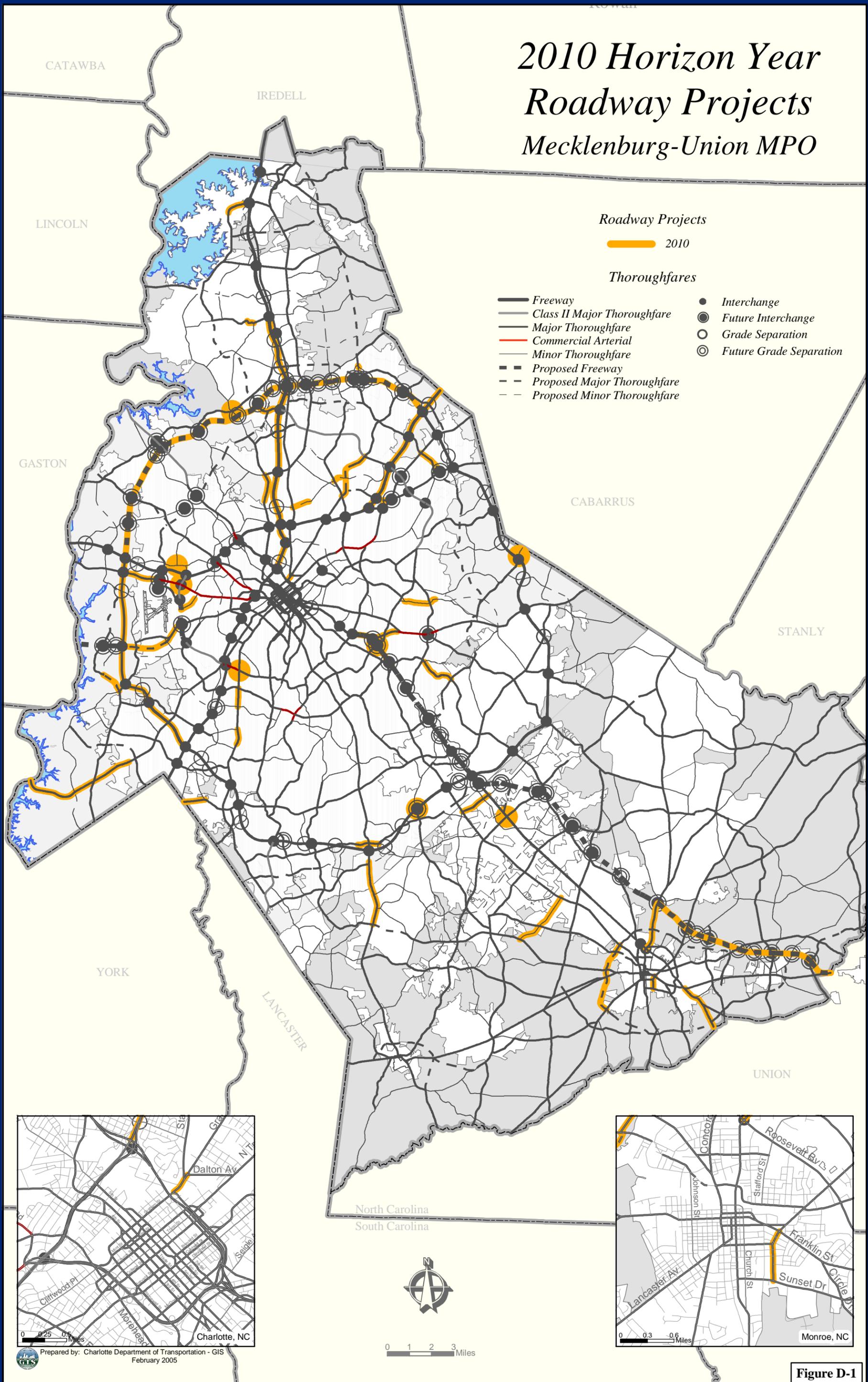


Figure D-1

**Table D- 8. MUMPO 2010 Financially Constrained Transportation Network**

2030M PO Rank	Index	NC TIP Number	Project	Project Limits	Type	Length (mi)	Sphere	System	Total Plan Cost	Functional Class	Regionally Significant	Funding Source	Exempt	Notes
19	7		Beatties Ford Rd.	Capps Hill Mine Rd. to Sunset Rd.	Widening (4) Median, Bike Lanes	1.23	Cl	Local	\$5,500,000	Minor Arterial	No	Cl	No	G
21	115		US 29/74 (Wilkinson Blvd.)	Little Rock Rd. to I-485	Widening (6)	1.69	Cl	State	\$3,000,000	Principal Arterial	Yes	Cl	No	B
96	292		Dixie River Rd./NC160 Connector	NC 160 to Dixie River Rd.	New Road (2), Median, Bike Lanes	1.01	Cl	Local	\$5,200,000	Local	No	Cl	No	G
129	47		Idlewild Rd.	Piney Grove Rd. to Drifter Dr.	Widening (4), Median, Bike Lanes	1.60	Cl	Local	\$5,500,000	Minor Arterial	No	Cl	No	G
182	55		Idlewild Rd.	Drifter Dr. to Margaret Wallace Rd.	Widening (4), Median, Bike Lanes	0.69	Cl	Local	\$4,000,000	Minor Arterial	No	Cl	No	G
---		B-2591	Highland Avenue	Replace Bridge No. 56 over Norfolk Southern Railroad		0.00	Cl	State	\$1,326,000	Local	No	NCTIP	Yes	H,J
---		B-3544	Fowler-Secrest Rd.	Replace Bridge No. 446 over Stewarts Creek		0.00	Un	State	\$510,000	Local	No	NCTIP	Yes	J
---		B-3677	SR 3135 (Lebanon Rd.)	Greasy Creek. Replace Bridge No. 36		0.00	MH	State	\$840,000	Collector	No	NCTIP	Yes	J
---		B-4200	SR 2120 (McCoy Rd.)	Replace Bridge No. 100 over Gar Creek		0.00	Hn	State	\$540,000	Minor Arterial	No	NCTIP	Yes	J
---		B-4201	SR 3168 (Sam Newell Rd.)	Replace Bridge No. 36 with culvert over Greasy Creek		0.00	Mt	State	\$375,000	Collector	No	NCTIP	Yes	J
---		B-4293	SR 1008 (Waxhaw-Indian Trail Rd.)	Replace Bridge No. 219 over Blythe Creek		0.00	Un	State	\$150,000	Local	No	NCTIP	Yes	J
---		B-4294	SR 1113 (Davis Rd.)	Replace Bridge No. 184 over Waxhaw Creek		0.00	Un	State	\$780,000	Local	No	NCTIP	Yes	J
---		B-4295	SR 1137 (Potter Rd.)	Replace Bridge No. 188 over Waxhaw Creek		0.00	Un	State	\$625,000	Local	No	NCTIP	Yes	J
---		B-4296	SR 1321 (Cuthbertson Rd.)	Replace Bridge No. 223 over West Fork of Twelve Mile Creek		0.00	Un	State	\$430,000	Local	No	NCTIP	Yes	J
---		B-4579	SR 2025 (Miranda Rd.)	Replace Bridge No. 134 over McIntyre Creek		0.00	Cl	State	\$305,000	Local	No	NCTIP	Yes	J

---	B-4580	SR 2804 (Reedy Creek Road)	Replace Bridge No. 177 over Reedy Creek	0.00	Cl	State	\$810,000	Local	No	NCTIP	Yes	J
---	B-4649	SR 1103 (Maggie Robinson Rd.)	Replace Bridge No. 377 over Waxhaw Creek	0.00	Un	State	\$100,000	Local	No	NCTIP	Yes	J
---	B-4650	SR 1315 (New Town Rd.)	Replace Bridge No. 221 over West Fork of Twelve Mile Ck.	0.00	Un	State	\$595,000	Local	No	NCTIP	Yes	J
---	B-4651	SR 1508 (Poplin Rd.)	Replace Bridge No. 251 over South Fork of Crooked Creek	0.00	Un	State	\$595,000	Local	No	NCTIP	Yes	J
---	B-4779	US 29 (N. Tryon St)	Replace Southbound Bridge No. 147 over Mallard Creek	0.00	Cl	State	\$3,300,000	Principal Arterial	Yes	NCTIP	No	J
---	B-4825	SR 1600 (Hopewell Church Rd.)	Replace Bridge No. 5 over Clear Creek	0.00	Un	State	\$550,000	Local	No	NCTIP	Yes	J
---	B-4826	SR 1649 (Sugar and Wine Rd.)	Replace Bridge No. 36 over Brandon Branch	0.00	Un	State	\$550,000	Local	No	NCTIP	Yes	J
---	E-3810	Greenway	Mallard Creek Greenway, Phase 4: UNCC to University Research Park with a spur to University Place from David Taylor Dr. to Mal. Ck. Ch. Rd.		Cl	Local	\$400,000		No	NCTIP	Yes	J,L
---	E-4128	Franklin Street (Monroe)	Streetscaping Improvements		Un	State	\$169,000		No	NCTIP	Yes	J,L
---	E-4404	Weddington Road Bicycle Improvements	Siskey YMCA to Beatty Park		Cl/Mt	State	\$250,000		No	NCTIP	Yes	J,L
---	E-4405	Bikeway	Southeast Davidson Bikeway		Dv	Local	\$600,000		No	NCTIP	Yes	J,L
---	E-4558	Stallings Rd./Old Monroe Rd.	Construct sidewalks		Un	State	\$201,000		No	NCTIP	Yes	J,L
---	E-4559	Davidson-Concord Rd. (Davidson)	Construct paved shoulders along Davidson-Concord Road to the intersection of Rocky River Greenway, Phase I.		Dv	State	\$262,000		No	NCTIP	Yes	J,L
---	E-4562	NC 51 (Matthews-Mint Hill Rd.) (Mint Hill)	Streetscaping Improvements		MH	State	\$429,000		No	NCTIP	Yes	J,L
---	E-4714	Bikeway	Irwin Creek Bikeway to Cedar Yard (near Bank of America Stadium)		Cl	Local	\$600,000		No	NCTIP	Yes	J,L

---		E-4715	Greenway	Little Sugar Creek Greenway; Cordelia Park to Baxter Street			Cl	Local	\$400,000		No	NCTIP	Yes	J,L
---		E-4793	Bikeway	Construct a pathway and bridge between Heather and Belrose lanes			Cl	Local	\$151,000		No	NCTIP	Yes	J,L
---		E-4794	Pedestrian Improvements/Bike Lanes	Pedestrian Improvements and Bike Lane			Dv	Local	\$231,000		No	NCTIP	Yes	J,L
---		E-4796	Stevens Mill Rd. (Stallings)	Construct sidewalks			Un	State	\$149,000		No	NCTIP	Yes	J,L
---		E-4797	Downtown Monroe	Streetscaping Improvements			Un	State	\$35,000		No	NCTIP	Yes	J,L
---		E-4798	US 74 (Wingate)	Streetscaping Improvements			Un	State	\$173,000		No	NCTIP	Yes	J,L
---	42/35	I-3311 A	I-77 HOV Lanes	NB, I-85 to I-485 and SB, I-277 (Brookshire Frwy.) to I-485	2+, Buffer separated	8.50	Cl	State	\$0	Interstate	Yes	NCTIP	No	C
---	202	I-3311A	I-77	I-85 to I-485	Widening (6), Freeway	6.39	Cl	State	\$88,017,000	Interstate	Yes	NCTIP	No	
---	305	I-3311D	I-77	I-485 to Gilead Rd.	Widening (1) NB Lane	3.03	Cl/Hn	State	\$6,000,000	Interstate	Yes	NCTIP	No	
---	203	I-3803A	I-85	US-29/NC-49 Connector to Cabarrus County Line	Widening (6), Freeway	6.46	Cl	State	\$68,000,000	Interstate	Yes	NCTIP	No	H
---		P-2908	Amtrak	Train operations between Charlotte & Rocky Mount			various	State	\$39,657,000		No	NCTIP	Yes	
---		P-2918	Amtrak	Train operations between Charlotte & Raleigh			various	State	\$57,940,000		No	NCTIP	Yes	
---		P-3800	High Speed Rail	Track & Station ROW and Acquisition			Cl	State	\$43,000,000		Yes	NCTIP	No	
---	204	R-211EC	I-485 & Weddington Rd.		Interchange	0.00	Cl/Mt	State	\$10,700,000	Interstate/Minor Arterial	Yes	NCTIP	No	
---	280	R-2123	I-485& I-85	I-85/I-485 Interchange	Interchange	0.00	Cl	State	\$46,200,000	Freeway/Expressway	Yes	NCTIP	No	F
---	205	R-2248A	I-485	Arrowood Rd to I-85 South	New Freeway (6)	8.05	Cl	State	\$148,181,485	Freeway/Expressway	Yes	NCTIP	No	
---	316	R-2248BB/C	I-485	I-85 to Oakdale Road	New Freeway (6)	6.80	Cl	State	\$121,336,000	Freeway/Expressway	Yes	NCTIP	No	
---	207	R-2248D	I-485	Oakdale Road to NC-115 (Old Statesville Rd.)	New Freeway (6)	6.00	Cl	State	\$131,857,000	Freeway/Expressway	Yes	NCTIP	No	
---	242	R-2248E	I-485	NC 115 to I-85 North	New Freeway (8)	5.40	Cl/Hn	State	\$104,100,000	Freeway/Expressway	Yes	NCTIP	No	
---	135	R-2248F	I-485	I-77 to Arrowood Rd.	Widening (6) Freeway	1.04	Cl	State	\$13,900,000	Freeway/Expressway	Yes	NCTIP	No	
---	314	R-2555A	W. Catawba Ave.	Torrence Chapel Rd. to Jetton Road	Widen (5)	0.90	Cr	State	\$4,650,000	Principal Arterial	Yes	NCTIP	No	

---	312	R-2559	Monroe Bypass	US-74 in Marshville to US-601 (Concord Hwy.)	New Freeway (4)	13.60	Un	State	\$123,919,000	Principal Arterial	Yes	NCTIP	No	
---	306	R-2616	US 601 (Pageland Hwy.)	US-74 (Roosevelt Blvd.) to South Carolina Line	Widening (4), Median	12.40	Un	State	\$39,000,000	Principal Arterial	Yes	NCTIP	No	D
---	252	R-4050	Airport Rd.	GoldMine Rd to Old Charlotte Rd	Widening (4), Median	1.60	Un	State	\$1,010,000	Local	No	NCTIP	No	H
---	212	U-203	Airport Entrance Rd.	I-85 to Charlotte-Douglas International Airport	New Expressway (4) (Interchange w/ US-29/74)	1.10	Cl	State	\$36,326,000	Minor Arterial	Yes	NCTIP	No	
---	213	U-209F	US 74 Expressway	Eastway Dr. to NC 27 (Albemarle Rd.)	Freeway (6+ HOV or Express Bus Lanes)	3.90	Cl	State	\$150,257,000	Freeway/Expressway	Yes	NCTIP	No	
---	126	U-209 BA	US 74 & Sharon Amity Rd.		Interchange	0.00	Cl	State	\$61,600,000	Principal Arterial	Yes	NCTIP	No	F
---	124	U-209 BB	US 74 Expressway	Sharon Amity Rd. to Conference Dr.	Freeway (6+ HOV or Express Bus Lanes)	1.16	Cl	State	\$47,000,000	Principal Arterial	Yes	NCTIP	No	F
---	214	U-2100	South Blvd. & Woodlawn Rd.		Intersection Improvements	0.00	Cl	State	\$3,088,000	Principal Arterial	Yes	NCTIP	Yes	M
---	217	U-2507A	Mallard Creek Rd.	Sugar Creek Rd. to Harris Blvd.	Widen & Relocation (4), Median, Bike Lanes	2.39	Cl	State	\$18,661,000	Minor Arterial	Yes	NCTIP	No	
---	218	U-2508C	Mallard Creek Church Rd.	US 29 to NC 49 (University City Blvd.)	Widen & Relocation (4), Median	2.27	Cl	State	\$14,889,000	Minor Arterial	Yes	NCTIP	No	H
---	220	U-2510A	NC 16 (Providence Rd.)	I-485 to Rea Rd. (in Weddington)	Widening (4), Median, Bike Lanes	3.22	Cl/Un	State	\$16,364,000	Minor Arterial	Yes	NCTIP	No	
---	236	U-2512A	NC 49 (Tryon St. / York Rd.)	Moss Rd. to South Carolina State Line	Widening (4), Median, Wide Outside Lane	5.21	Cl	State	\$20,100,000	Principal Arterial	Yes	NCTIP	No	H
---	309	U-2547	Charles St.	Sunset Dr. to Franklin St.	Widening (4)	0.59	Un	State	\$1,175,000	Collector	No	NCTIP	No	
---	221	U-2704	US 29/74 Wilkinson/B. Graham Pkwy.	NW Quadrant	Ramp & connection to Service Road	0.80	Cl	State	\$6,050,000	Local	No	NCTIP	No	
---	225	U-3411	NC 160 (West Blvd. Extension)	NC 160 to I-485	New Road (4), Median, Bike Lanes	0.48	Cl	State	\$2,200,000	Principal Arterial	Yes	NCTIP	No	
---	310	U-3412	Martin Luther King Jr. Blvd.	NC 200 (Lancaster Hwy.) to Charlotte Ave.	New Road (2)	3.41	Un	State	\$12,500,000	Minor Arterial	Yes	NCTIP	No	
---	228	U-3447	NC 51 (Rock Hill-Pineville Rd.)	Downs Cir. to South Carolina State Line	Widening (4), Median, Wide Outside Lane	1.04	Pn	State	\$3,550,000	Minor Arterial	Yes	NCTIP	No	

---	229	U-3603	NC 27 (Albemarle Rd.)	Pierson Dr to West of Reddman Rd	Add Third Eastbound Lane	0.90	Cl	State	\$1,950,000	Principal Arterial	Yes	NCTIP	No	
---	232	U-3825	Stallings Rd.	Old Charlotte Rd. to US-74 (Independence Blvd.)	Widening (4)	1.47	Un	State	\$3,800,000	Minor Arterial	No	NCTIP	No	
---	311	U-4024	US 601	US 74 (Roosevelt Blvd.) to Monroe Bypass	Widening (4), Median	1.94	Un	State	\$8,920,000	Principal Arterial	Yes	NCTIP	No	
---	307	U-4401	Reedy Creek Rd.	North of Harrisburg Rd.	Relocation (2)	0.28	Cl	State	\$2,950,000	Collector	No	NCTIP	Yes	J
---	308	W-4004	South Blvd.	N of Sharon Lakes Rd. to S of Arrowood Rd.	Widen to add Center for 2-way Left Turns	0.84	Cl	State	\$912,000	Principal Arterial	Yes	NCTIP	Yes	
---		Z-3810C	Granite Street	at NSRR Crossing	Crossing 716 057G, Safety Improvements		Cl	Local	\$82,000	Local	No	NCTIP	Yes	
---			Intersection Safety/Capacity Projects	various	NCDOT, Charlotte DOT and other local towns have hazard elimination and congestion mitigation programs which fund small intersection improvements as identified.			Local/State			No	various	No	K
---			Minor Roadway Improvements	various	NCDOT, Charlotte DOT and other local towns have industrial access, connectivity and other programs which fund small add-a-lane improvements to the local street network..			Local/State			No	various	No	K
---			Hazard Elimination/Safety Program	various	NCDOT, Charlotte DOT and other local towns have safety programs which fund improvements			Local/State			No	various	No	K

					to the local street network.									
---			Bridge Maintenance/Replacement Program	various	NCDOT, Charlotte DOT and other local towns have bridge programs which fund inspections, maintenance and replacements as identified.			Local/State			No	various	No	K
---	313		Ballantyne Commons Pkwy.	NC 16 (Providence Rd.) to Annalexa Ln.	Widening (4), Median, Bike Lanes	0.55	Cl	State	\$2,500,000	Minor Arterial	No	Public/Private	No	A
---	13		Cindy Ln. Extension	Statesville Rd. to Nevin Rd.	New Road (2), Median, Bike Lanes	0.76	Cl	Local	\$5,800,000	Local	No	04 Bond	No	
---	74	R-2420C*	City Blvd.	US 29 (N. Tryon St.) to I-85	New Road (4), (Completes US 29 Interchange)	1.55	Cl	Local	\$25,500,000	Principal Arterial	Yes	98 Bond	No	B
---	71		NC 27 (Freedom Dr.)	Edgewood Rd. to Fred D. Alexander Blvd.	Widening (4), Median	2.60	Cl	State	\$20,250,000	Principal Arterial	Yes	98 Bond	No	B
---	440		Harris Blvd. (formerly Reames Rd.)	I-77 to Reames Rd.	Widening (6), Median, Bike Lanes	0.56	Cl	State	\$5,000,000	Collector	Yes	Public/Private	No	
---	127		Harris Blvd. (formerly Vance Rd.)	Reames Rd. to I-485	Widening (4), Median, Wide Outside Lane	0.63	Cl	State	\$5,000,000	Collector	Yes	Public/Private	No	E
---	31		Hickory Grove Rd.	Shamrock Dr. to Highland Ave.	Widening (Simple 4 Lanes), Bike Lanes	1.45	Cl	Local	\$8,850,000	Local	No	02 Bond	No	
---	317		Lawyers Road Ext.	NC 24-27 (Albemarle Rd.) to NC 24 (Harris Blvd.)	New Road (2), Bike Lanes	0.16	Cl	Local	\$1,500,000	Local	No	98 Bond	No	
---	319		Little Rock Rd. Relocation	Flintrock Rd. to NC 27 (Freedom Dr.)	New Road (4), Median	0.60	Cl	Local	\$0	Minor Arterial	No	98 Bond	No	P
---	171		McKee Rd.	NC 16 (Providence Rd.) to Tilley Morris Rd.	Widening (3), Bike Lanes	0.46	Cl	Local	\$2,700,000	Minor Arterial	No	Public/Private	No	B
---	44		Morris Field Dr.	Billy Graham Pkwy. to NS Railroad Bridge	Widening (4), Bike Lanes	0.80	Cl	Local	\$6,450,000	Local	No	City	No	

---	67	U-3411*	NC 160 (West Blvd. Relocation)	Billy Graham Pkwy. to Steele Creek Rd.	New Road (4), Median, Bike Lanes	2.10	Cl	State	\$4,000,000	Minor Arterial	Yes	City/State	No	B
---	82		Nevin Rd.	Sugar Creek Rd. to Mallard Creek Rd.	New Road (2), Bike Lanes	0.32	Cl	Local	\$2,500,000	Local	No	04 Bond	No	
---	183		Prosperity Ridge Rd.	Prosperity Ch.Rd. to East of Prosperity Commons	New Road (2), Bike Lanes	0.28	Cl	Local	\$1,200,000	Collector	No	Private	No	A
---	119		South Blvd.	Tyvola Rd. to Archdale Dr.	Median	0.84	Cl	State	\$3,300,000	Principal Arterial	Yes	98 Bond	Yes	
---	430		Toddville Rd. @ Tuckaseegee Rd.		Add Right Turn Lane	0.00	Cl	Local	\$125,000	Collector	No	City	Yes	J
---	9		US 29/74 Wilkinson/B. Graham Pkwy.	NE Quadrant	Ramp & connection to Service Road	0.40	Cl	State	\$5,500,000	Local	No	98 Bond	No	B
---	116		US-29/NC-49 (Graham St.)	I-277 (Brookshire Frwy.) to Dalton Ave.	Widening (6)	0.30	Cl	State	\$3,000,000	Principal Arterial	Yes	98 Bond	No	

\* = Smaller piece of a larger previously ranked project

A = Project constructed exclusively by developers or partially in conjunction with a municipality

B = Project on State System, Funded by City of Charlotte

C = Cost included in Project ID # 202 (I-77--I-85 to I-485)

D = 0.9 mi. of project is within MUMPO area

E = Project built as part of NCDOT Project #R-2248D

F = Project completely funded by 2010, but not open to traffic until after 2010 (2020 Horizon Year)

G = Anticipated Charlotte Bond Project

H = Under Construction

J = Below scope of Model

K = Funding sources vary

L = Jurisdiction must provide minimum 20% match of total project cost

M = Costs shared by City of Charlotte & NCDOT

N = Project Cost not included in 2020 Horizon Year Expenditures

P = Cost included in Project ID # 297 (NC 27 (Freedom Drive- Edgewood Rd. to Little Rock Rd.))

**SPHERES**

Cl = Charlotte

Cr= Cornelius

Dv = Davidson

Hn = Huntersville

IC = Iredell County

MH = Mint Hill

Mt = Matthews

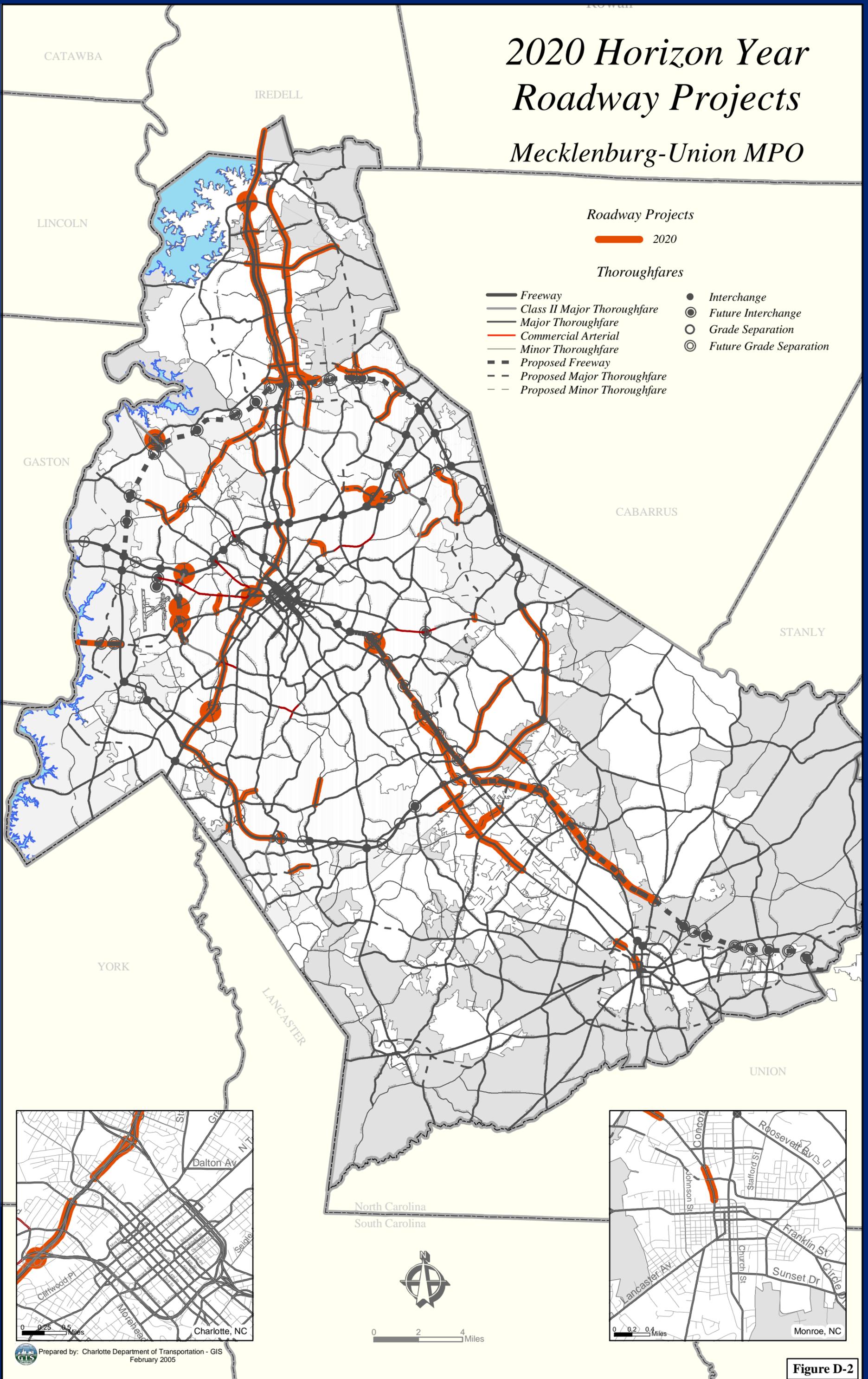
Pn = Pineville

UC = Union County



**Figure D- 4. MUMPO 2020 Roadway Network Map**

# 2020 Horizon Year Roadway Projects Mecklenburg-Union MPO



**Table D-9. MUMPO 2020 Financially Constrained Transportation Network**

MPO Rank	Index	Project	Project Limits	Type	Length (mi)	Sphere	System	Total Plan Cost	Functional Class	Regionally Significant	Funding Source	Exempt	Notes
1	126	US 74 / Sharon Amity Rd.	Interchange	New Interchange	0.00	Cl	State	\$61,600,000	Principal Arterial	Yes	NCTIP	No	F, N
2	124	US 74 Expressway (Independence Blvd.)	Sharon Amity Rd. to Conference Dr.	Expressway (6 Lanes +HOV or Busway)	1.16	Cl	State	\$47,000,000	Principal Arterial	Yes	NCTIP	No	F, N
3	433	NC 27 (Freedom Dr. / Mt. Holly Rd.)	Fred D. Alexander Blvd. to Lee Dr.	New Road (4) Median, Bike Lanes	1.38	Cl	State	\$30,000,000	Principal Arterial	Yes	State	No	
4	125	US 74 Expressway (Independence Blvd.)	Conference Dr. to Village Lake Dr.	Expressway (6 Lanes +HOV or Busway)	1.38	Cl	State	\$29,500,000	Principal Arterial	Yes	State	No	
5	157	US 74 Expressway (Independence Blvd.)	Village Lake Dr. to Krefeld Dr.	Expressway (6 Lanes +HOV or Busway)	0.47	Cl	State	\$9,800,000	Principal Arterial	Yes	State	No	
6	158	US 74 Expressway (Independence Blvd.)	Krefeld Dr. to Hayden Way	Expressway (6+HOV or BW)	1.21	Cl	State	\$22,300,000	Principal Arterial	Yes	State	No	
7	271	US 74 Monroe Connector	I-485 to US 601	New Freeway (4)	11.50	Un	State	\$150,000,000	Principal Arterial	Yes	Toll	No	
8	302	I-77 HOV Project	W. Fifth St. to Brookshire Frwy. (I-277)	Southbound HOV Lane	0.57	Cl	State	\$6,500,000	Interstate	Yes	State	No	
9	8	Billy Graham Pkwy./ NC 160 (West Blvd.)	Interchange	New Interchange	0.00	Cl	State	\$10,700,000	Freeway/Expressway	Yes	State	No	
10	159	US 74 Expressway (Independence Blvd.)	Hayden Way to NC 51	Expressway (6 Lanes +HOV or Busway)	1.50	Cl & Mt	State	\$19,900,000	Principal Arterial	Yes	State	No	
11	160	US 74 Expressway (Independence Blvd.)	NC 51 to I-485	Expressway (6 Lanes +HOV or Busway)	1.41	Mt	State	\$19,200,000	Principal Arterial	Yes	State	No	
12	136	I-77 / Catawba Ave.	Interchange	Convert to Urban Diamond	0.00	Cr	State	\$27,000,000	Interstate	Yes	State	No	
13	79	NC 51 (Matthews-Mint Hill Rd.)	Matthews Township Pkwy to Lawyers Rd.	Widening (4), Median, Bike Lanes	3.93	Mt & MH	State	\$24,200,000	Principal Arterial	Yes	State	No	
14	707	I-77 HOV Project	W. Fifth St. to I-85	Northbound HOV Lane	3.95	Cl	State	\$22,500,000	Interstate	Yes	State	No	

15	74	City Blvd. Ext.	N. Tryon St. (US 29) to I-85	New Road (4) Median, Bike Lanes	1.04	Cl	State	\$10,000,000	<b>Principal Arterial</b>	<b>Yes</b>	State	<b>No</b>	
16	36	I-77 HOV Project	I-277 (Belk Frwy.) to W. Fourth St.	HOV Lanes	1.30	Cl	State	\$128,100,000	<b>Interstate</b>	<b>Yes</b>	State	<b>No</b>	
17	145	Clanton Rd. Ext.	West Blvd. to Wilkinson Blvd.	New Road (2), Median, Bike Lanes	0.94	Cl	Local	\$7,200,000	<b>Local</b>	<b>No</b>	Cl	<b>No</b>	
18	226	Independence Pointe Pkwy.	Matthews-Mint Hill Rd. to Campus Ridge Rd.	New Road (2), Bike Lanes (4-lane bridge)	0.98	Mt	State	\$9,700,000	<b>Local</b>	<b>No</b>	State	<b>No</b>	
20	117	Billy Graham Pkwy./Morris Field Dr.	Grade Separation	New Grade Separation	2.04	Cl	State	\$2,000,000	<b>Freeway/Expressway</b>	<b>Yes</b>	State	<b>No</b>	
22	57	NC 115 (Old Statesville Rd.)	Harris Blvd. to I-485	Widening (4) Median, Bike Lanes	2.56	Cl	State	\$15,900,000	<b>Principal Arterial</b>	<b>Yes</b>	State	<b>No</b>	
23	49	Krefeld Dr. Extension	Curtis Ct. to Sardis Rd N.	New Road (2), Median, Bike Lanes	0.74	Cl	Local	\$3,100,000	<b>Local</b>	<b>No</b>	Cl	<b>No</b>	
24	130	I-77 Widening (North)	I-485 to NC 73	Widening (6) & HOV	5.76	Hn	State	\$54,000,000	<b>Interstate</b>	<b>Yes</b>	State	<b>No</b>	
25	22	Fred D. Alexander Blvd.	NC 16 (Brookshire Blvd.) to NC 27 (Freedom Dr.)	New Road (4) Median, Bike Lanes	1.88	Cl	Local	\$14,600,000	<b>Collector</b>	<b>No</b>	Cl	<b>No</b>	
26	96	Community House Rd. Ext.	Endhaven Ln. to south of I-485	New Road (4), Median, Bike Lanes	0.24	Cl	State	\$8,300,000	<b>Local</b>	<b>No</b>	State	<b>No</b>	
27	448	Idlewild Rd.	Meck./Union Co. Line to Stevens Mill Rd.	Widening (4), Median, Bike Lanes	0.81	Un	State	\$5,000,000	<b>Collector</b>	<b>No</b>	State	<b>No</b>	
28	240	John St./Old Monroe Rd	I-485 to Indian Trail Rd.	Widening (4), Median, Bike Lanes	2.76	Mt & Un	State	\$16,900,000	<b>Minor Arterial</b>	<b>No</b>	State	<b>No</b>	
29	27	NC 24 (Harris Blvd.)	US 29 to NC 49	Widening (6), (include sidewalk)	0.78	Cl	State	\$1,000,000	<b>Freeway/Expressway</b>	<b>Yes</b>	State	<b>No</b>	
30	181	Old Monroe Rd.	Indian Trail Rd. to Wesley Chapel-Stouts Rd.	Widening (4), Median, Bike Lanes	2.56	Un	State	\$15,000,000	<b>Collector</b>	<b>No</b>	State	<b>No</b>	
31	259	NC 73 West	Northcross Dr. to US 21	Revise Interchange, Widening (6)	0.53	Hn	State	\$32,500,000	<b>Principal Arterial</b>	<b>Yes</b>	State	<b>No</b>	
32	235	NC 115 (Old Statesville Rd.)	McCord Rd. to Bailey Rd.	Widening (4) Median, Bike Lanes	2.20	Cr & Hn	State	\$13,400,000	<b>Principal Arterial</b>	<b>Yes</b>	State	<b>No</b>	
33	134	Independence Pointe Pkwy.	Windsor Square Dr. to NC 51	New Road (2)	1.00	Mt	Local	\$8,200,000	<b>Local</b>	<b>No</b>	Mt	<b>No</b>	
34	103	Statesville Rd.	Starita Rd. to Keith Dr.	Widening (4), Median, Bike Lanes	1.92	Cl	State	\$17,800,000	<b>Minor Arterial</b>	<b>No</b>	Cl	<b>No</b>	B
35	143	Mallard Creek Rd.	Prosperity Church Rd. to I-485	Widening (4) Median, Bike Lanes	1.82	Cl	State	\$12,700,000	<b>Collector</b>	<b>No</b>	State	<b>No</b>	

36	48	Independence Pointe Pkwy.	Crownpoint Executive Drive to Sam Newell Rd.	New Road (2), Median, Bike Lanes	0.88	Mt	Local	\$4,300,000	Local	No	Mt	No
37	37	I-77 Widening (North)	NC 73 to Langtree Rd.	Widening (6) & HOV	4.95	Cr, Dv, Hn & IC	State	\$77,000,000	Interstate	Yes	State	No
38	111	US 21 (Statesville Rd..)	Sunset Rd. to Harris Blvd.	Widening (4), Median, Bike Lanes	2.58	Cl	State	\$16,300,000	Minor Arterial	No	State	No
39	146	Park Rd.	Johnston Rd. to NC 51	Widen(4), Median, Bike Lanes	0.87	Pn	State	\$6,100,000	Collector	No	State	No
40	216	I-77 Widening (South)	Woodlawn Rd. to Nations Ford Rd.	Widening (10) & HOV	2.32	Cl	State	\$59,500,000	Interstate	Yes	State	No
41	80	NC 73 East	US 21 to NC 115	Widening (4), Median	1.21	Hn	State	\$5,700,000	Principal Arterial	Yes	State	No
42	75	City Blvd.	Neal Rd. to Mallard Creek Rd Extension	New Road (4) Median, Bike Lanes	0.73	Cl	State	\$6,800,000	Local	No	State	No
43	262	Alexanderana Rd.	NC 115 to Eastfield Rd.	New Road (4), Median, Bike Lane	0.91	Cl & Hn	State	\$4,700,000	Collector	No	Urban Loop	No
44	196	Alexanderana Rd.	Mt. Holly-Huntersville Rd. to NC 115	Widen (4), Median, Bike Lane	1.70	Cl & Hn	State	\$11,000,000	Collector	No	State	No
45	34	I-277 (Belk Frwy.)	Interchange (WB Bridge over I-77)	Add 3rd WB lane	0.28	Cl	State	\$2,600,000	Interstate	Yes	State	No
46	172	McKee Rd. Extension	John St. to Campus Ridge Rd.	New Road (4) Bike Lanes	1.00	Mt	State	\$1,800,000	Local	No	State	No
47	45	I-85 / Billy Graham Pkwy.	Interchange	Convert to Urban Diamond	0.00	Cl	State	\$27,000,000	Interstate	Yes	State	No
48	237	NC 73 East	NC 115 to Davidson-Concord Rd.	Widening (4), Median	2.67	Cr & Hn	State	\$13,500,000	Principal Arterial	Yes	State	No
49	39	I-77 Widening (South)	Nations Ford Rd. to I-485	Widening (8) & HOV	1.70	Cl	State	\$33,900,000	Interstate	Yes	State	No
50	110	US 21 (Statesville Rd..)	Harris Blvd. to Gilead Rd.	Widening (4) Median, wosl	4.48	Cl & Hn	State	\$23,600,000	Minor Arterial	No	State	No
51	109	US 21 (Statesville Rd..)	Gilead Rd. to Catawba Ave.	Widening (4) Median, wosl	5.26	Cr & Hn	State	\$33,000,000	Minor Arterial	No	State	No
52	72	NC 49 (S. Tryon St.)	I-77 to Yorkmont Rd.	Widening (6), Wide Outside Lane	0.32	Cl	State	\$3,000,000	Principal Arterial	Yes	State	No
53	176	Mt. Holly-Huntersville Rd.	Mt. Holly-Huntersville Rd./NC 16 (Brkshre. Blvd.)	Interchange	0.25	Cl	State	\$3,700,000	Minor Arterial/Frwy.-Expwy.	Yes	State	No
54	167	I-485	I-77 to Johnston Rd. (US 521)	Widening (6) (includes Johnston	6.37	Cl	State	\$38,000,000	Interstate	Yes	Urban Loop	No

				Rd. Flyover)									
55	165	Hambright Rd.	Mt. Holly-Huntersville Rd. to NC 115	Widening (4), Median, Bike Lanes	1.17	Hn	State	\$7,200,000	Minor Arterial	No	State	No	
56	442	Fred D. Alexander Blvd.	Sunset Rd. to Vance Rd.	New Road (4) Median, Bike Lanes	2.90	Cl	Local	\$17,500,000	Collector	No	Cl	No	
57	245	Charlotte Ave.	Church St. to Concord Ave.	Widening (4), Median, Bike Lanes	0.38	Un	State	\$9,100,000	Minor Arterial	No	State	No	
58	173	McKee Rd. Extension	Pleasant Plains Rd. to John St.	New (4), Median, Bike Lanes	0.76	Mt	State	\$6,300,000	Local	No	State	No	
59	161	Beatties Ford Rd.	Sunset Rd. to Lakeview Rd.	Widening (4) Median, Bike Lanes	1.51	Cl	Local	\$7,600,000	Minor Arterial	No	Cl	No	
60	38	I-77 Widening (South)	I-277 (Belk Fwy.) to Woodlawn Road	Widening (10) & HOV	3.43	Cl	State	\$102,900,000	Interstate	Yes	State	No	
63	708	I-77 Widening (South)	Nations Ford Rd. Interchange	Upgrade Interchange	0.00	Cl	State	\$8,100,000	Interstate	Yes	State	No	
64	289	Chestnut Lane/US 74 Connector	Old Monroe Rd. to US 74	New Road (4), Median	1.89	Un	State	\$12,800,000	Local	No	State	No	
65	140	Carolina Place Pkwy. Extension	Sam Meeks Rd. to Dorman Rd.	New Road (3) in 4 Ln ROW	0.23	Pn	State	\$1,700,000	Local	No	State	No	
67	455	NC 115 (Old Statesville Rd.)	I-485 to Verhoeff Dr.	Widening (4) Median, Bike Lanes	2.25	Cl & Hn	State	\$11,100,000	Principal Arterial	Yes	State	No	
70	149	Church St. Extension	Main St. to McCord Rd.	New Road (2) (34'FF)	1.20	Hn	Local	\$6,500,000	Local	No	Hn	No	
71	295	Charlotte Ave.	Seymour St. to Dickerson Blvd.	Widening (4), Median, Bike Lanes	0.47	Un	State	\$2,700,000	Minor Arterial	No	State	No	
74	15	Eastern Circumferential	NC 49 to Rocky River Rd.	New Road (4) Median, Bike Lanes	2.79	Cl	Local	\$17,800,000	Collector	No	Cl	No	
81	131	Garden Pkwy.	I-485 to Gaston County Line	New Freeway (4), w/ Bike Path	1.89	Cl	State	\$55,100,000	Freeway/Expressway	Yes	Urban Loop	No	
83	150	Church St. Extension	Verhoeff Drive Ext. to Main St.	Improvement (34'FF)	5.18	Hn	Local	\$17,100,000	Local	No	Hn	No	
84	148	Church St. Extension	McCord Rd. to Mayes Rd.	New Road (2) (34'FF)	1.30	Hn	Local	\$6,800,000	Local	No	Hn	No	
91	23	Fred D. Alexander Blvd.	NC 16 (Brookshire Blvd.) to Sunset Rd.	New Road (4) Median, Bike Lanes	2.35	Cl	Local	\$26,500,000	Collector	No	Cl	No	
98	133	Zion Ave. Extension/Improvement	Mayes Rd. to Catawba Ave.	Widening (2)/New Road (2) (34' cross-section)	2.13	Cr	Local	\$6,200,000	Local	No	Cr	No	
99	192	Zion Ave. Extension/Improvement	Catawba Ave. to South Main St. (Davidson)	Widening (2)/New Road (2) (34' cross-section)	0.84	Cr & Dv	Local	\$2,300,000	Local	No	Cr & Dv	No	

104	147	Church St. Extension	Eastfield Rd. to Verhoeff Drive Ext.	New Road (2) (34' cross-section)	2.59	Hn	Local	\$12,900,000	Local	No	Hn	No
113	17	Eastern Circumferential	Albemarle Rd. to Pence Rd.	New Road (4), Median, Bike Lanes	0.29	Cl	Local	\$2,200,000	Collector	No	Cl	No
114	183	Prosperity Ridge Rd. (eastern leg)	south of Panthersville Dr. to Prosperity Church Rd.	New (2), (48'LL), Bike Lanes	1.39	Cl	Local	\$8,500,000	Local	No	Cl	No
115	187	Ridge Rd. Extension	Eastfield Rd. to Prosperity Church Rd.	New (4), Median, Bike Lanes	0.95	Cl	Local	\$7,300,000	Local	No	Cl	No
119	239	Westmoreland Rd.	US 21 to Washam-Potts Rd.	Widening (4), Median, Bike Lanes	0.24	Cr	Local	\$1,500,000	Local	No	Cr	No
122	186	Ridge Rd.	Prosperity Church Rd. to Beard Rd.	Widening (4) Median, Bike Lanes	2.36	Cl	Local	\$14,000,000	Collector	No	Cl	No
123	93	Rea Rd.	Colony Rd. to NC 51 (Pineville-Matthews Rd.)	Widening (4), Median, Bike Lanes	1.22	Cl	Local	\$13,000,000	Collector	No	Cl	No
124	184	Prosperity Ridge Rd. (northern leg)	Prosperity Church Rd. to Eastfield Rd.	Widening (4), Median, Bike Lanes	1.52	Cl	Local	\$4,600,000	Collector	No	Cl	No
134	137	Bryant Farms Rd	Community House Rd. to Elm Ln.	Widening (4), Median, Bike Lanes	0.89	Cl	Local	\$7,600,000	Minor Arterial	No	Cl	No
138	296	Grier Rd.	W.T. Harris Blvd. to Rocky River Rd.	Widen (4), Median, Bike Lanes	0.95	Cl	Local	\$4,800,000	Collector	No	Cl	No
146	41	Thirty Sixth St.	Atando Ave. to N. Tryon St.	New Road (2), Median, Bike Lanes	0.90	Cl	Local	\$2,600,000	Local	No	Cl	No
209	170	I-485	US 74 to Albemarle Road	Widening (6)	9.40	Mt & MH	State	\$53,000,000	Interstate/Frwy.-Expwy.	Yes	Urban Loop	No

\* = Smaller piece of a larger previously ranked project

A = Project constructed exclusively by developers or partially in conjunction with a municipality

B = Project on State System, Funded by City of Charlotte

**SPHERES**

Cr= Cornelius

Cl = Charlotte

Mt = Matthews

MH = Mint Hill

**C = Cost included in Project ID #  
202 (I-77--I-85 to I-485)**

**D = 0.9 mi. of project is within  
MUMPO area**

**E = Project built as part of NCDOT  
Project #R-2248D**

**F = Project completely funded by 2010, but not open to traffic  
until after 2010 (2020 Horizon Year)**

Dv = Davidson

Hn = Huntersville

County

Pn = Pineville

UC = Union

IC = Iredell County

**G = Anticipated Charlotte Bond Project**

**H = Under Construction**

**J = Below scope of Model**

**K = Funding sources vary**

**L = Jurisdiction must provide minimum 20% match of total project  
cost**

**M = Costs shared by City of Charlotte & NCDOT**

**N = Project Cost not included in 2020 Horizon Year Expenditures**

**P = Cost included in Project ID # 297 (NC 27 (Freedom Drive- Edgewood Rd. to Little Rock Rd.))**

**Figure D- 5. MUMPO 2030 Roadway Network Map**

# 2030 Horizon Year Roadway Projects Mecklenburg-Union MPO

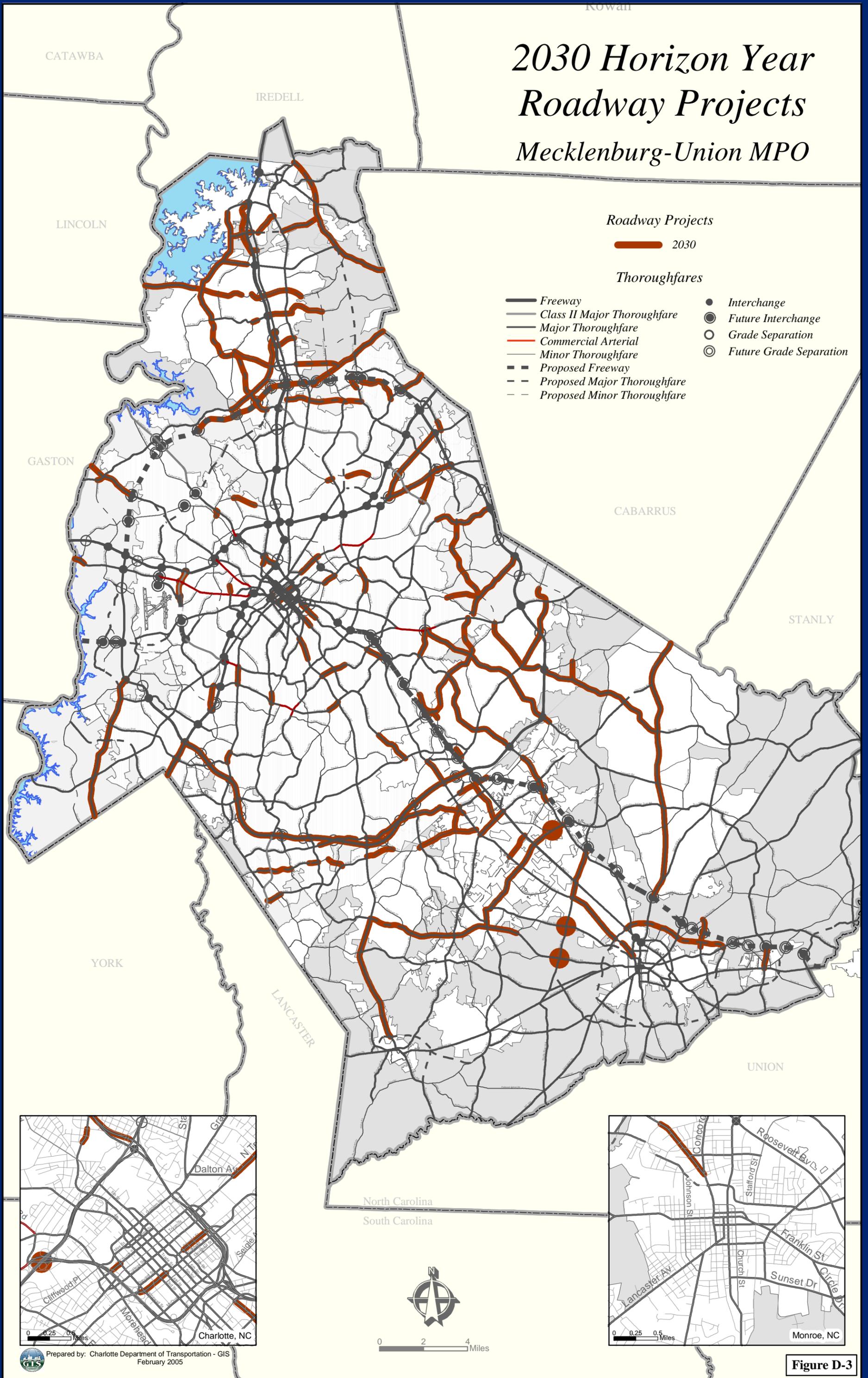


Figure D-3

**Table D- 10. MUMPO 2030 Financially Constrained Transportation Network**

MPO Rank	Index	Project	Project Limits	Type	Length (mi)	Sphere	System	Total Plan Cost	Functional Class	Regionally Significant	Funding Source	Exempt	Notes
61	195	Rocky River Rd. (Monroe)	Old Charlotte Hwy. to US 74	Widening (4), Median	1.14	Un	State	\$7,600,000	Collector	No	State	No	
62	257	NC 73 West	Catawba River to Vance Rd. Ext.	Widening (4-6), Median	2.14	Hn	State	\$13,400,000	Principal Arterial	Yes	State	No	
66	112	US 29 (N. Tryon St.)	NC 49 (University City Blvd.) to I-485	Widening (6), Median, C&G, Bike Lanes	3.66	Cl	State	\$27,900,000	Principal Arterial	Yes	State	No	
68	127	Harris Blvd.	Reames Rd. to I-485	Widening (6) 150ROW, Med., Bike Lanes	0.63	Cl	State	\$4,500,000	Collector	No	State	No	
69	162	Gilead Rd.	McCoy Rd. to Boren St.	Widening (4), Median, Bike Lanes	0.21	Hn	State	\$1,200,000	Principal Arterial	Yes	State	No	
72	118	Billy Graham Pkwy.	Josh Birmingham Pkwy. to I-85	Widening (6)	1.18	Cl	State	\$16,700,000	Freeway/Expressway	Yes	State	No	
73	66	NC 160 (Steele Creek Rd.)	I-485 to NC 49 (York Rd.)	Widening (4) Median, Bike Lanes	1.20	Cl	State	\$18,900,000	Minor Arterial	No	State	No	
75	209	W. Catawba Avenue	Jetton Rd. to NC 73	Widening (4), Median, Bike Lanes	2.37	Cr & Hn	State	\$5,500,000	Principal Arterial	Yes	State	No	
76	304	US 29-74 (Wilkinson Blvd.)	NC 7(Gaston County) to Moore's Chapel Rd.	Replace Catawba River Bridge (6)	0.38	Cl	State	\$26,200,000	Principal Arterial	Yes	State	No	
77	248	Rocky River Rd. (Monroe)	US 74 to Monroe Bypass Connector	Widen (4), Median	1.42	Un	State	\$8,200,000	Collector	No	State	No	
78	270	Rocky River Rd.	Grier Rd. to Eastern Circumferential	Widen (4), Median, Bike Lanes	1.04	Cl	State	\$5,600,000	Collector	No	State	No	
79	171	McKee Rd.	NC 16 to Tilley Morris Rd.	Widening (4), Median, Bike Lanes	0.46	Cl	State	\$2,000,000	Minor Arterial	No	State	No	
80	166	Hambright Rd. Extension	NC 115 to Eastfield Rd.	New Road (4), Median, Bike Lanes	1.93	Hn	State	\$11,800,000	Local	No	State	No	
82	14	Davidson Eastside Connector	Davidson-Concord Rd. to NC 115	New Road (2), Bike Lanes	2.17	Dv	State	\$20,800,000	Local	No	State	No	
85	294	Charlotte Ave.	Dickerson Blvd. to Rocky River Rd.	Widening (4), Median, Bike Lanes	2.84	Un	State	\$15,800,000	Minor Arterial	No	State	No	
86	6	Ballantyne Commons Pkwy.	Annalexa Ln. to Williams Pond Ln.	Widening (4), Median, Bike Lanes	2.37	Cl	State	\$12,400,000	Minor Arterial	No	State	No	
87	128	Vance Rd. Extension	Mt. Holly-Huntersville Rd. to Hambright Rd.	New Road (4), Median, Bike Lanes	2.65	Hn	State	\$15,600,000	Local	No	State	No	

88	73	NC 49 (University City Blvd.)	US 29 (Tryon St.) to I-485	Widening (6), Median, Bike Lanes	3.18	Cl	State	\$20,400,000	Principal Arterial	Yes	State	No	
89	51	Lawyers Rd.	Albemarle Rd. to McAlpine Creek	Widening (4), Median, Bike Lanes	1.29	Cl	State	\$8,400,000	Principal Arterial	Yes	State	No	
90	453	Hucks Rd. Extension	Sugar Creek Rd to Old Statesville Rd (NC 115)	Widening (4), New Road (4) Median, Bike Lanes	1.61	Cl	State	\$11,800,000	Local	No	State	No	
92	81	NC 84 Relocation	NC 16 to NC 84	New road (2) on 4 ln ROW, Wide Outside Lanes	2.34	Un	State	\$10,800,000	Collector	No	State	No	
93	199	Bailey Rd. Extension	Northcross Dr. to US 21	New Road (2), Bike Lanes	0.20	Cr	State	\$2,700,000	Local	No	State	No	
94	5	Bailey Rd.	NC 115 to Davidson-Concord Rd.	Widening (2), New Road (2), Bike Lanes	0.64	Cr & Dv	State	\$2,000,000	Local	No	State	No	
95	253	Northcross Dr.	Bailey Rd. Ext. to Westmoreland Rd.	New Road (2), Widening, Median, Bike Lanes	0.68	Cr & Hn	State	\$4,900,000	Local	No	State	No	
97	129	Vance Rd. Extension	Gilead Rd. to NC 73	New Road (4), Median, Bike Lanes	1.56	Hn	State	\$8,200,000	Local	No	State	No	
100	249	Westmoreland Rd.	W. Catawba Avenue to US 21	Widening (4), Median, Bike Lanes	1.03	Cr	State	\$9,100,000	Local	No	State	No	
101	64	NC 16 (Providence Rd.)	Rea Rd. Ext. to Cuthbertson Rd.	Widening (4), Median, Bike Lanes	4.06	Un	State	\$23,200,000	Minor Arterial	Yes	State	No	
102	89	NC 16 (Providence Rd.)	Cuthbertson Rd. to Waxhaw Bypass	Widening (4), Median, Bike Lanes	2.56	Un	State	\$16,000,000	Minor Arterial	Yes	State	No	
103	50	Lawyers Rd.	I-485 to Stevens Mill Rd.	Widening (4), Median, Bike Lanes	0.39	MH & Un	State	\$2,200,000	Collector	No	State	No	
105	285	Pleasant Plains Rd.	McKee Rd. to Old Monroe Rd.	Widening (2), Median, Bike Lanes	1.33	Cl, Mt & Un	State	\$1,300,000	Local	No	State	No	
106	272	Monroe Northern Loop	Dickerson Blvd. to US 601 North	New Road (4), Median, Bike Lanes	1.04	Un	State	\$5,600,000	Local	No	State	No	
107	445	Lawyers Rd.	NC 51 to I-485	Widening (4), Median, Bike Lanes	2.53	MH	State	\$14,500,000	Minor Arterial	No	State	No	
108	155	Lawyers Rd.	McAlpine Creek to NC 51	Widening (4), Median, Bike Lanes	3.21	MH	State	\$18,800,000	Principal Arterial	Yes	State	No	
109	86	John St.	Trade St. to I-485	Widening (4), Bike Lanes	1.92	Mt	State	\$11,900,000	Minor Arterial	No	State	No	
110	40	I-77 Widening (South)	I-485 to South Carolina Line	Widening (8) & HOV	1.77	Cl	State	\$18,000,000	Interstate	Yes	State	No	
111	439	Harris Blvd.	I-485 to Mt Holly-Huntersville Rd.	Widening (4) Median, Bike Lanes	0.46	Cl	State	\$2,600,000	Collector	No	State	No	
112	163	Gilead Rd.	US 21 to NC 115	Widening (4), Bike Lanes	0.67	Hn	State	\$4,400,000	Minor Arterial	No	State	No	
116	164	Hambright Rd.	McCoy Rd. to Mt. Holly-Huntersville	Widening (2), Median, Bike Lanes	1.79	Hn	State	\$1,900,000	Minor Arterial	No	State	Yes	

			Rd.										
117	189	Vance Rd. Extension	Hambright Rd. to Gilead Rd.	New Road (4), Median, Bike Lanes	1.93	Hn	State	\$11,800,000	Local	No	State	No	
118	255	NC 73 East	Davidson-Concord Rd. to Cabarrus County Line	Widening (4), Median	2.33	Dv & Hn	State	\$12,100,000	Principal Arterial	Yes	State	No	
120	269	Rocky River Rd.	Eastern Circumferential to I-485	Widen (4), Median, Bike Lanes	1.52	Cl	State	\$8,100,000	Collector	No	State	No	
121	18	Eastern Circumferential	Pence Rd. to Rocky River Rd.	Widening (4), New Road (4) Median, Bike Lanes	3.97	Cl	State	\$22,400,000	Collector	No	State	No	
125	90	NC 84	Waxhaw-Indian Trail Rd. to Airport Rd.	Widening (4), Median, Bike Lanes	2.65	Un	State	\$15,100,000	Collector	No	State	No	
126	450	NC 160 (Steele Creek Rd.)	NC 49 (York Road) to South Carolina Line	Widening (4) Median, Bike Lanes	1.94	Cl	State	\$12,200,000	Minor Arterial	No	State	No	
127	175	Mt. Holly-Huntersville Rd.	Hambright Rd. to Alexanderana Rd.	Widening (4) Median, Wide Outside Lanes	2.77	Hn	State	\$14,200,000	Minor Arterial	No	State	No	
128	174	McKee Rd.	Tilley Morris Rd. to Pleasant Plains Rd.	Widening (4), Median, Bike Lanes	3.35	Cl & Mt	State	\$17,300,000	Minor Arterial/Local	No	State	No	
130	447	Idlewild Rd.	NC 51 to Stallings Rd.	Widening (4), Median, Bike Lanes	1.74	Mt & MH	State	\$12,200,000	Minor Arterial	No	State	No	
131	46	Idlewild Rd.	Margaret Wallace Rd. to NC 51	Widening (4), Median, Bike Lanes	3.22	Mt & MH	State	\$19,100,000	Minor Arterial	No	State	No	
132	233	Eastfield Rd.	Alexanderana Rd. to Prosperity Village Rd.	Widening (4), Median, Bike Lanes	2.31	Cl & Hn	State	\$6,900,000	Collector	No	State	No	
133	19	Eastern Circumferential	Lawyers Rd. to Idlewild Rd.	Widening (4)/New (4), Median, Bike Lanes	1.47	MH	State	\$8,200,000	Collector	No	State	No	
135	104	Stumptown Rd.	Hugh Torance Pkwy. to NC 115	Widening (2) (30' cross-section) Bike Lanes	2.21	Hn	State	\$5,900,000	Local	No	State	Yes	
136	258	NC 73 West	Vance Rd. Ext. to Northcross Dr.	Widening (4-6) Median	3.10	Hn	State	\$21,200,000	Principal Arterial	Yes	State	No	
137	273	Monroe Northern Loop	601 North to Southern Loop	New Road (4), Median, Bike Lanes	4.59	Un	State	\$27,300,000	Local	No	State	No	
139	293	Charlotte Ave.	Concord Ave. to Seymour St.	Widening (4), Median, Bike Lanes	0.75	Un	State	\$4,200,000	Minor Arterial	No	State	No	
140	284	Potter Rd.	Old Monroe Rd. to Chestnut Ln.	Widening (2), Median, Bike Lanes	1.14	Un	State	\$1,400,000	Local	No	State	Yes	
141	281	McKee Rd. Extension	Campus Ridge Rd. to Stevens Mill Rd.	New Road (4), Median, Bike Lanes	0.75	Un	State	\$5,300,000	Local	No	State	No	

142	444	Eastern Circumferential	Idlewild Rd. to US 74	Widening (4)/New (4), Median, Bike Lanes	2.39	Cl & Mt	State	\$15,700,000	Collector	No	State	No	
143	139	Bryant Farms Rd.	Elm Ln. to Rea Rd.	New Road (4), Median, Bike Lanes	0.45	Cl	Local	\$2,900,000	Local	No	Cl	No	
144	452	Beatties Ford Rd.	French St. to Dixon St.	Widening (4)	0.17	Cl	Local	\$900,000	Minor Arterial	No	Cl	No	
145	91	Auten Rd. Extension	Chesapeake Dr. to McAllister Dr.	New Road (2), Median, Bike Lanes	1.04	Cl	Local	\$5,300,000	Local	No	Cl	No	
147	408	Stumptown Rd. Ext.	NC 115 to Ramah Church Rd.	New (2) Median, Bike Lanes	0.74	Hn	State	\$3,800,000	Local	No	State	No	
148	156	NC 84	NC 84 Relocation to Waxhaw-Indian Trail Rd.	Widening (4), Median, Bike Lanes	1.99	Un	State	\$12,100,000	Collector	No	State	No	
149	1	NC 24-27 (Albemarle/Harris)	Convert to Interchange	New Interchange	0.00	Cl	State	\$30,000,000	Principal Arterial/Major Art.	Yes	State	No	
150	276	Wesley Chapel-Stouts Rd/ Potter Rd.	Old Charlotte Hwy. to NC 84	Widening (4), Median, Bike Lanes	3.41	Un	State	\$13,700,000	Collector	No	State	No	
151	191	Wesley Chapel-Stouts Rd.	US 74 to Old Charlotte Hwy.	Widening (4), Median, Bike Lanes	1.20	Un	State	\$18,900,000	Collector	No	State	No	
152	123	US 601 (Concord Hwy.)	Ridge Rd. to Lawyers Rd.	Widening (4), Median, Bike Lanes	1.14	Un	State	\$6,100,000	Principal Arterial	Yes	State	No	
153	98	<b>Sardis Ch. Rd./U'ville-Indian Trail Rd.</b>	Secrest Shortcut Rd. to US 74	Widening (4), Median, Bike Lanes	1.59	Un	State	\$9,600,000	Collector	No	State	No	
154	52	Odell School Rd.	I-485 to Cabarrus County Line	Widening (6) Conc. Med., Bike Lanes	1.13	Cl	State	\$8,400,000	Local	No	State	No	
155	76	NC 51 (Blair Rd.)	NC 218 to NC 24/27 (Albemarle Rd.)	Widening (4), Median, Bike Lanes	3.24	MH	State	\$20,300,000	Principal Arterial	Yes	State	No	
156	154	NC 27 (Mt. Holly Rd.)	I-485 to Belmeade Dr.	Widening (4) Median, Bike Lanes	1.90	Cl	State	\$12,400,000	Principal Arterial	Yes	State	No	
157	151	NC 218 (Fairview Rd.)	Brief Rd. to US 601	Widening (4), Median, Wide Outside Lanes	6.21	MH & Un	State	\$4,400,000	Minor Arterial	No	State	No	
158	56	Nations Ford Rd.	Tyvola Rd. to I-77	Widening (4), Bike Lanes	1.12	Cl	Local	\$6,900,000	Collector	No	Cl	No	
159	231	Indian Trail Rd.	US 74 to Old Monroe Rd.	Widening (3), Bike Lanes	1.50	Un	State	\$5,900,000	Minor Arterial	No	State	No	
160	222	Idlewild Rd./Secrest Short Cut Rd.	Stevens Mill Rd. to Faith Church Rd.	Widening (4), Median, Bike Lanes	2.82	Un	State	\$17,400,000	Collector	No	State	No	
161	286	Chestnut Ln.	Matthews-Weddington Rd. to Old Monroe Rd.	New Road (4), Widening (4), Bike Lanes	2.67	Un	State	\$14,500,000	Local	No	State	No	
162	138	Bryant Farms Rd.	Johnston Rd. to Community House	New Road (4), Median, Bike Lanes	0.97	Cl	Local	\$8,600,000	Local	No	Cl	No	

			Rd.										
163	10	Brevard St.	Eleventh St. to Seventh St.	Widening (3)	0.58	Cl	Local	\$1,800,000	Minor Arterial	No	Cl	No	
164	99	Johnston-Oehler Rd.	Prosperity Ridge Rd. to Mallard Creek Rd.	Widening (2), Median, Bike Lanes	1.93	Cl	Local	\$2,300,000	Local	No	Cl	Yes	
165	268	Secrest Ave. Extension	Secrest Ave. to Olive Branch Rd.	New Road (5), Median, Bike Lanes	1.14	Un	State	\$15,100,000	Local	No	State	No	
166	277	Rocky River Rd. (Monroe)	at Goldmine Rd. and at Weddington Rd. (NC 84)	Intersection Improvements	0.00	Un	State	\$1,000,000	Collector	No	State	No	
167	291	Pence Rd. Relocation	Pence Rd. to Harrisburg Rd.	New Road (2), Median, Bike Lanes	2.27	Cl	Local	\$9,600,000	Local	No	Cl	No	
168	265	Huntersville-Concord Rd.	NC 115 to Trails End Ext.	Widening (2), Median, Bike Lanes	1.65	Hn	State	\$2,600,000	Collector	No	State	Yes	
169	16	Eastern Circumferential	Lawyers Rd. to NC 24/27	New Road (4), Median, Bike Lanes	1.86	Cl & MH	State	\$10,800,000	Collector	No	State	No	
170	298	Caldwell St.	John Belk Frwy. (I-277) to E. 4th St.	Widening (4)	0.85	Cl	Local	\$19,000,000	Interstate/Local	Yes	Cl	No	
171	261	Verhoeff Drive West	US 21 to Mt. Holly-Huntersville Rd.	New Road (2), Bike Lanes	0.19	Hn	State	\$2,900,000	Local	No	State	No	
172	260	Verhoeff Drive East	US 21 to NC 115	Widening (2)/New Road (2) (34' x-section), Bike Lanes	0.66	Hn	Local	\$1,600,000	Local	No	Hn	Yes	
173	114	US 29/NC 49 (N. Tryon St.)	US 29/NC 49 (Dalton Ave.) to 32nd St.	Widening (5)	1.09	Cl	State	\$2,100,000	Principal Arterial	Yes	State	No	
174	180	Nevin Road Ext.	Black Walnut Ln. to IBM Dr.	New Road (2), Median, Bike Lanes	1.14	Cl	Local	\$7,200,000	Local	No	Cl	No	
175	83	Nevin Rd.	Sugar Creek Rd. to Gibbon Rd.	Improvement 30' cross-section), Bike Lanes	0.25	Cl	Local	\$300,000	Local	No	Cl	Yes	J
176	188	US 601 (Concord Hwy.)	Lawyers Rd. to Cabarrus County Line	Widening (4), Median, Bike Lanes	6.73	Un	State	\$38,900,000	Principal Arterial	Yes	State	No	
177	282	Pavilion Blvd. Ext.	Salome Church Rd. to N. Tryon St.	New Road (2), Median, Bike Lanes	0.17	Cl	Local	\$1,700,000	Local	No	Cl	No	
178	85	Old Concord Rd.	Harris Blvd. to NC 49 (Univ. City Blvd.)	Widening (4), Bike Lanes	1.28	Cl	Local	\$6,700,000	Collector	No	Cl	No	
179	290	North Main St. (Wingate)	US 74 to Monroe Bypass	Widening (4), Parking, wide sidewalks	1.42	Un	State	\$12,600,000	Collector	No	State	No	
180	303	NC 27 (Mount Holly North Loop)	Mt. Holly-Huntersville Rd. to Catawba River	New Road (4) Median, Bike Lanes	1.00	Cl	State	\$15,000,000	Principal Arterial	Yes	State	No	
181	68	NC 218 (Fairview Rd.)	NC 51 to Jefferson Colony Dr.	Widening (4), Median, Bike Lanes	1.09	MH	State	\$4,800,000	Minor Arterial	No	State	No	

183	168	I-485	NC 16 (Providence Rd) to US 74	Widening (6)	5.00	Cl & Mt	State	\$29,000,000	Interstate	Yes	State	No	
184	29	Harrisburg Rd.	Eastern Circumferential to I-485	Widening (4) Median, Bike Lanes	2.72	Cl	Local	\$14,900,000	Collector/Minor Arterial	No	Cl	No	
185	234	Eastfield Rd.	Prosperity Village Rd. to Cabarrus County Line	Widening (4), Median, Bike Lanes	1.68	Cl & Hn	State	\$15,000,000	Local	No	State	No	
186	95	Blair Rd. Ext.	Albemarle Rd. to Rocky River Church Rd.	New Road (3), Bike Lanes	0.79	Cl	Local	\$3,900,000	Local	No	State	No	
187	61	NC 16 (Brookshire Frwy.)	I-77 to Beatties Ford Rd. NB Ramps	Add westbound auxiliary lane	0.59	Cl	State	\$1,300,000	Freeway/Expressway	Yes	State	No	
188	193	Wilgrove-Mint Hill Rd.	NC 51 to Albemarle Rd. (NC 24-27)	Widening (2), Median, Bike Lanes	2.41	MH	State	\$2,500,000	Collector	No	State	Yes	
189	106	The Plaza	Parkwood Ave. to Matheson Ave.	Median	0.60	Cl	Local	\$1,600,000	Minor Arterial	No	Cl	Yes	
190	121	South Blvd.	Woodlawn Rd. to Tyvola Rd.	Median	1.44	Cl	Local	\$12,100,000	Principal Arterial	No	Cl	Yes	
191	101	Sharon Amity Rd.	Providence Rd. to Water Oak Rd.	Median	1.16	Cl	Local	\$3,000,000	Principal Arterial	No	Cl	Yes	
192	256	Northcross Dr.	Westmoreland Rd. to W. Catawba Ave.	New Road (3), Bike Lanes	1.35	Cr	Local	\$8,500,000	Local	No	Cr	No	
193	177	Mt. Holly-Huntersville Rd.	US 21 to Hambright Rd.	Widening (2) Median, Bike Lanes	1.62	Hn	State	\$11,600,000	Minor Arterial	No	State	Yes	
194	283	Matthews-Indian Trail Rd.	Campus Ridge Rd. to Indian Trail Rd.	Widening (4), w/ side. & Bike Lanes	2.65	Un	State	\$13,100,000	Local	No	State	No	
195	264	Hugh Torance Pkwy. Ext.	Wynfield Creek Pkwy. to Beatties Ford Rd.	New Road (2), Bike Lanes	2.32	Hn	Local	\$10,600,000	Local	No	Hn	No	
196	33	Hucks Rd. Extension	Prosperity Church Rd. to Sugar Creek Rd.	New Road (4) Median, Bike Lanes	0.81	Cl	Local	\$6,000,000	Local	No	Cl	No	
197	446	Arlington Church Rd.	Brief Rd. to NC 218	New Road (2), Median, Bike Lanes	0.82	MH	State	\$4,300,000	Local	No	State	No	
198	454	Hucks Rd. Extension	Old Statesville Rd. (NC 115) to US 21	New Road (4), Widening (4), Median, Bike Lanes	1.04	Cl	Local	\$5,700,000	Local	No	Cl	No	
199	141	Faith Church Rd. Extension	US 74 to Monroe Rd.	New Road (2),(24', 4' paved shoulders)	1.20	Un	State	\$4,900,000	Local	No	State	No	
200	2	Arequipa Dr. / Northeast Pkwy.	Margaret Wallace Rd. to Sam Newell Rd.	New Road (2),Median, Bike Lanes	1.30	Cl & Mt	Local	\$7,500,000	Local	No	Cl/Mt	No	
201	144	Ardrey Kell Rd. Extension	NC 16 (Providence Rd) to Tilley Morris	New Road (2), Median, Bike Lanes	1.27	Cl	Local	\$3,300,000	Local	No	Cl	No	

			Rd.										
202	97	Sardis Rd.	Sardis Rd. North to NC 51	Widening (4), Median, Bike Lanes	1.67	Cl & Mt	Local	\$9,700,000	Minor Arterial	No	Cl/Mt	No	
203	20	Eastway Dr.	Kilborne Dr. to Sugar Creek Rd.	Widening (6) Conc. Median, Bike Lanes	1.08	Cl	State	\$10,600,000	Principal Arterial	Yes	Cl	No	G
204	12	Church St.	Stonewall St. to I-277 WB Ramp	Widening (4)	0.15	Cl	Local	\$1,100,000	Minor Arterial	No	Cl	No	
205	65	NC 16 (Providence Rd.)	Queens Rd. to Briar Creek	Median	0.99	Cl	State	\$1,100,000	Principal Arterial	Yes	Cl	No	
206	54	Monroe Rd.	Sharon Amity Rd. to Rama Rd.	Median	0.70	Cl	Local	\$1,400,000	Minor Arterial	No	Cl	Yes	
207	32	Hovis Rd.	Rozzelles Ferry Rd. to NC 16	Improved 2 Lanes	0.24	Cl	Local	\$300,000	Local	No	Cl	Yes	J
208	94	Remount Rd.	Greenland Ave. to Camp Green St.	New Road (2), Bike Lanes	0.28	Cl	Local	\$1,300,000	Local	No	Cl	No	
210	315	I-485	I-77 to NC 16 (Providence Rd.)	Widening (6/8)	4.33	Cl	State	\$67,000,000	Interstate	Yes	State	No	
211	21	Fairview Rd.	Carmel Rd. to NC 16 (Providence Rd.)	Widening (6), Median, Bike Lanes	0.55	Cl	Local	\$4,000,000	Minor Arterial	No	Cl	No	
212	120	South Blvd.	Sharon Rd. West to Westinghouse Blvd.	Median, Bike Lanes	0.48	Cl	Local	\$1,200,000	Principal Arterial	No	Cl	Yes	
213	182	Prosperity Church Rd. (western leg)	I-485 to Prosperity Ridge Rd.	Widening (2)/New Road (2) (40' x-section), Bike Lanes	0.64	Cl	Local	\$3,600,000	Local	No	Cl	No	
214	28	Harris Blvd.	Albemarle Rd. to Idlewild Rd.	Median	1.20	Cl	Local	\$2,400,000	Minor Arterial	No	Cl	No	
215	84	Northeast Pkwy. Extension	NC 51 to Matthews-Mint Hill Rd.	New Road (2), Bike Lanes	0.66	Mt	Local	\$2,500,000	Local	No	Mt	No	
216	26	Bryant Farms Rd.	Flat Branch to Ardrey Kell Rd.	New Road (2) Median, Bike Lanes	1.11	Cl	Local	\$4,800,000	Local	No	Cl	No	
217	254	Washam-Potts Rd.	Westmoreland Rd. to NC 115	Widening (4), Bike Lanes	1.09	Cr	Local	\$5,000,000	Local	No	Cr	No	
218	87	Park Rd.	Selwyn Ave. to Fairview Rd.	Widening (5), add northbound lane	0.45	Cl	Local	\$1,300,000	Minor Arterial	No	Cl	No	
219	70	Ardrey Kell Rd.	US 521 (Lancaster Highway) to Marvin Rd.	Widening (2), on 4-lane ROW, w/ 4' paved shoulders	0.71	Cl	Local	\$1,800,000	Local	No	Cl	Yes	
220	92	Randolph Rd.	Colonial Ave. to Laurel Ave.	Widen to standard 10' lanes (currently 4 - 8' lanes)	0.39	Cl	Local	\$1,500,000	Minor Arterial	No	Cl	Yes	
221	100	Seventh St.	Independence Blvd. to Laurel Ave.	Widening (4) 10' lanes	0.87	Cl	Local	\$4,600,000	Minor Arterial	No	Cl	No	

\* = Smaller piece of a larger previously ranked project

A = Project constructed exclusively by developers or partially in conjunction with a municipality

B = Project on State System, Funded by City of Charlotte

C = Cost included in Project ID # 202 (I-77--I-85 to I-485)

D = 0.9 mi. of project is within MUMPO area

E = Project built as part of NCDOT Project #R-2248D

F = Project completely funded by 2010, but not open to traffic until after 2010 (2020 Horizon Year)

G = Anticipated Charlotte Bond Project

H = Under Construction

J = Below scope of Model

K = Funding sources vary

L = Jurisdiction must provide minimum 20% match of total project cost

M = Costs shared by City of Charlotte & NCDOT

N = Project Cost not included in 2020 Horizon Year Expenditures

P = Cost included in Project ID # 297 (NC 27 (Freedom Drive- Edgewood Rd. to Little Rock Rd.))

### SPHERES

Cl = Charlotte

MH = Mint Hill

Cr= Cornelius

Mt = Matthews

Dv = Davidson

Pn = Pineville

Hn = Huntersville

UC = Union County

IC = Iredell County

**Figure D- 6. MUMPO Transit Network Map**

# CATS System Plan

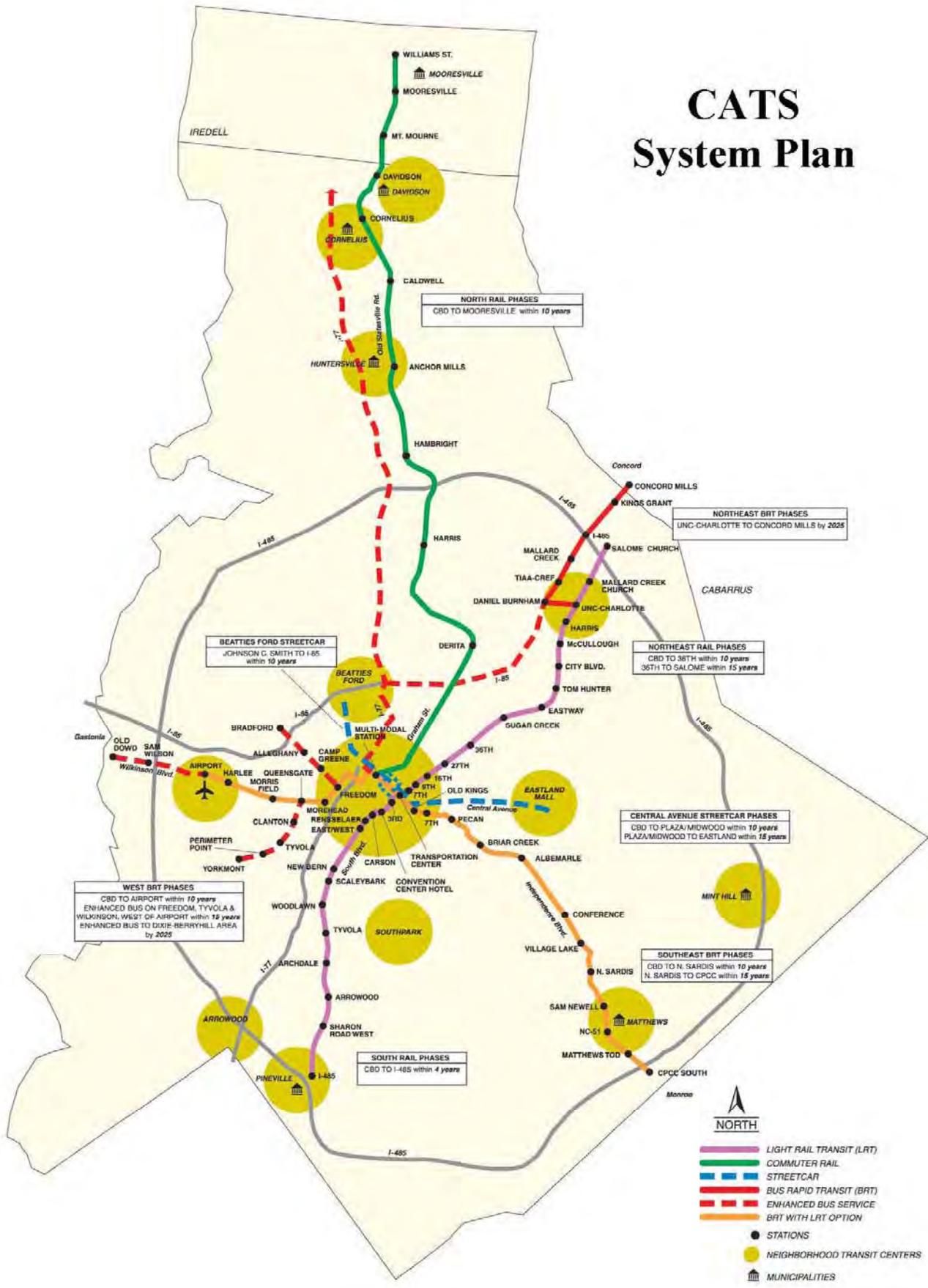


Figure D-4



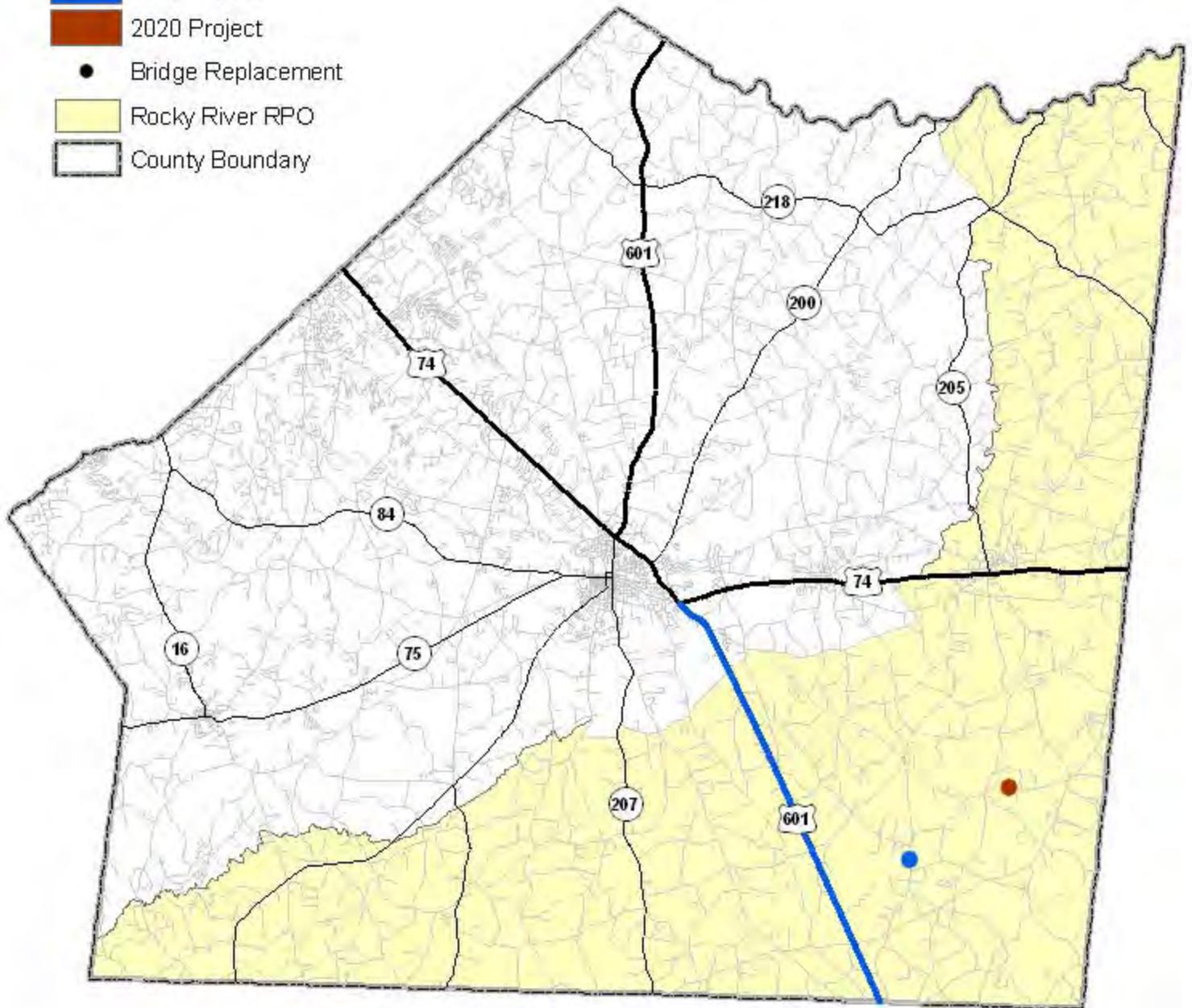
**Appendix D, Part 4 – Non-MPO Areas:  
Gaston, Iredell (P), Lincoln and Union  
Counties**

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**Figure D- 8. Transportation Improvement Program for the Rural Portion of Union County**

# Transportation Improvement Program for the Rural Portion of Union County

-  2010 Project
-  2020 Project
-  Bridge Replacement
-  Rocky River RPO
-  County Boundary



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**Table D- 14. Union County Non-MPO Area 2010 Fiscally Constrained Roadway Network**

Route	ID No.	Description	Length (Miles)	Total Est. Cost (\$1000)	Prior Yrs. Cost (\$1000)	Work Type	Funding Source	Cost Est. (\$1000)	Schedule (Fiscal Years)	Exempt?	Regionally Significant?	Federal Functional Classification
US 601	R-2616	Wideing to multi-lanes between US 74 in Monroe to SC state line	12.1	49447	10447	Planning			In progress	No	Yes	Principal Arterial
						Construction	NHS	39000	FFY 05			
						<b>Part complete</b>						
US 52, US 74, NC 49	R-4413	Upgrade substandard guardrail, end treatments and bridge anchor units	N/A	340	0	Design			FFY 05	Yes	No	Various
						Construction	NHS	340	FFY 07			
SR 1113	B-4292	Replace bridge #184 over Waxhaw Creek	N/A	780	150	R/W	NFA	55	FFY 05	Yes	No	Local
						Construction	NFA	575	FFY 06			
SR 1937	B-4652	Replace bridge #118 over Lanes Creek	N/A	700	150	R/W	NFA	50	FFY 06	Yes	No	Local
						Construction	NFA	500	FFY 07			

**Table D- 22. Union County Non-MPO Area 2010 Fiscally Constrained Transit Network**

Route	ID No.	Description	Length (Miles)	Total Est. Cost (\$1000)	Prior Yrs. Cost (\$1000)	Work Type	Funding Source	Cost Est. (\$1000)	Schedule (Fiscal Years)	Exempt?	Regionally Significant?	Federal Functional Classification
N/A	TJ-4889	Provide operating assistance to counties and community transportation systems to meet work first and employment needs	N/A	14	0	Operations	OAWF	14	FFY 05	Yes	No	N/A
N/A	TL-4889	Provide operating assistance for additional transportation services to the elderly & disabled	N/A	61	0	Operations	EDTAP	61	FFY 05	Yes	No	N/A

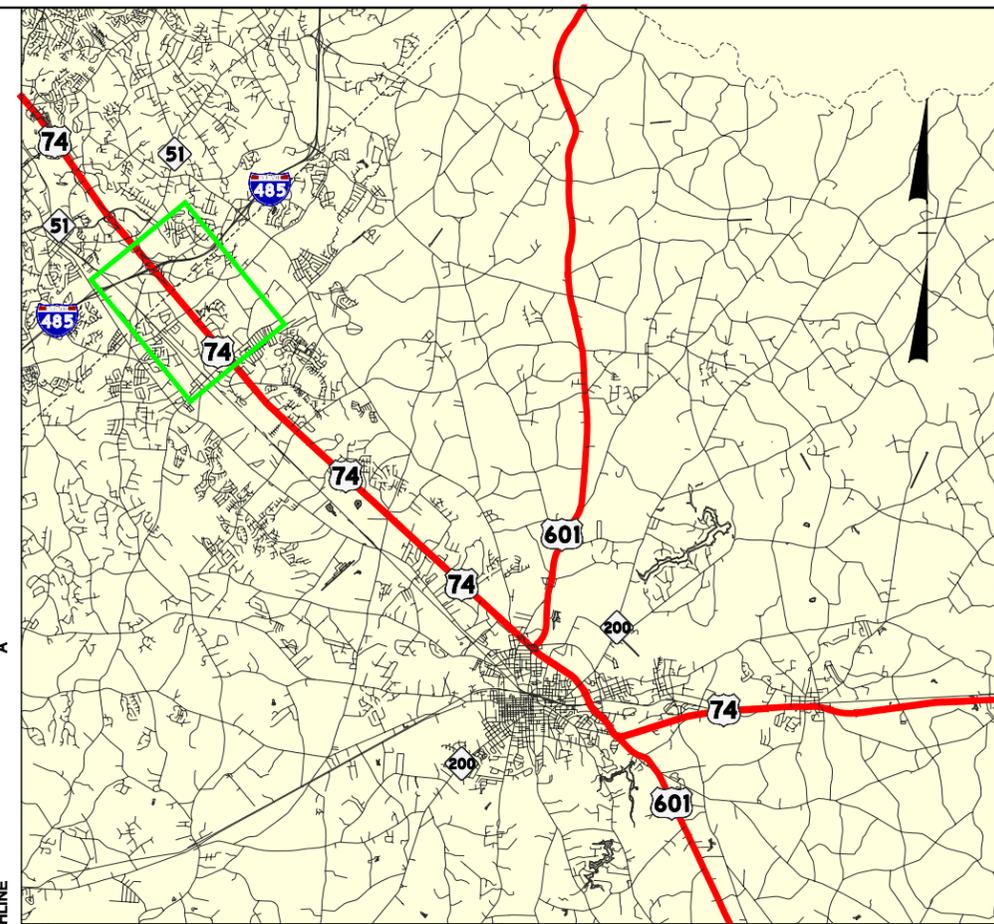
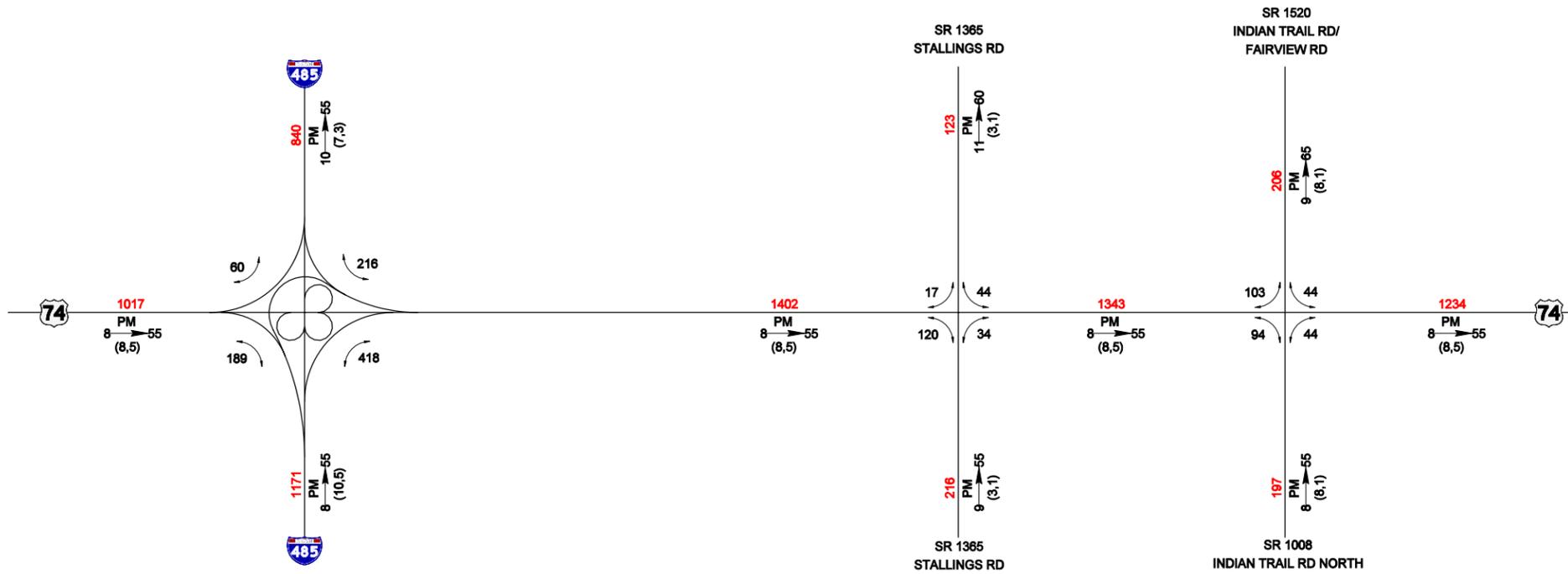
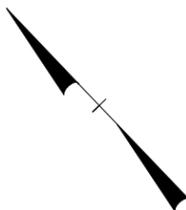
**Table D- 23. Lincoln County Non-MPO Area 2030 Fiscally Constrained Roadway Network**

Route	ID No.	Description	Length (Miles)	Total Est. Cost (\$1000)	Prior Yrs. Cost (\$1000)	Work Type	Funding Source	Cost Est. (\$1000)	Schedule (Fiscal Years)	Exempt?	Regionally Significant?	Federal Functional Classification
NC 73	R-2705	US 321 to SR1356. Widen to multi-lanes. Extend two lanes on new location.	4.0	26750		Planning				No	Yes	Principal Arterial
						R/W	STP	3350	PY			
						Construction	STP	23400	PY			

## **APPENDIX D**

### **2035 Traffic Projections Monroe Connector/Bypass**

- 1. No-Build Scenario**
- 2. Build Toll Scenario Alternate 1A (DSAs A, A1, A2, A3, B, B1, B2, B3)**
- 3. Build Toll Scenario Alternate 3A (DSAs C, C1, C2, C3, D, D1, D2, D3)**



# 2035 NO BUILD SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559      LOCATION: US 74 in Mecklenburg and Union Counties

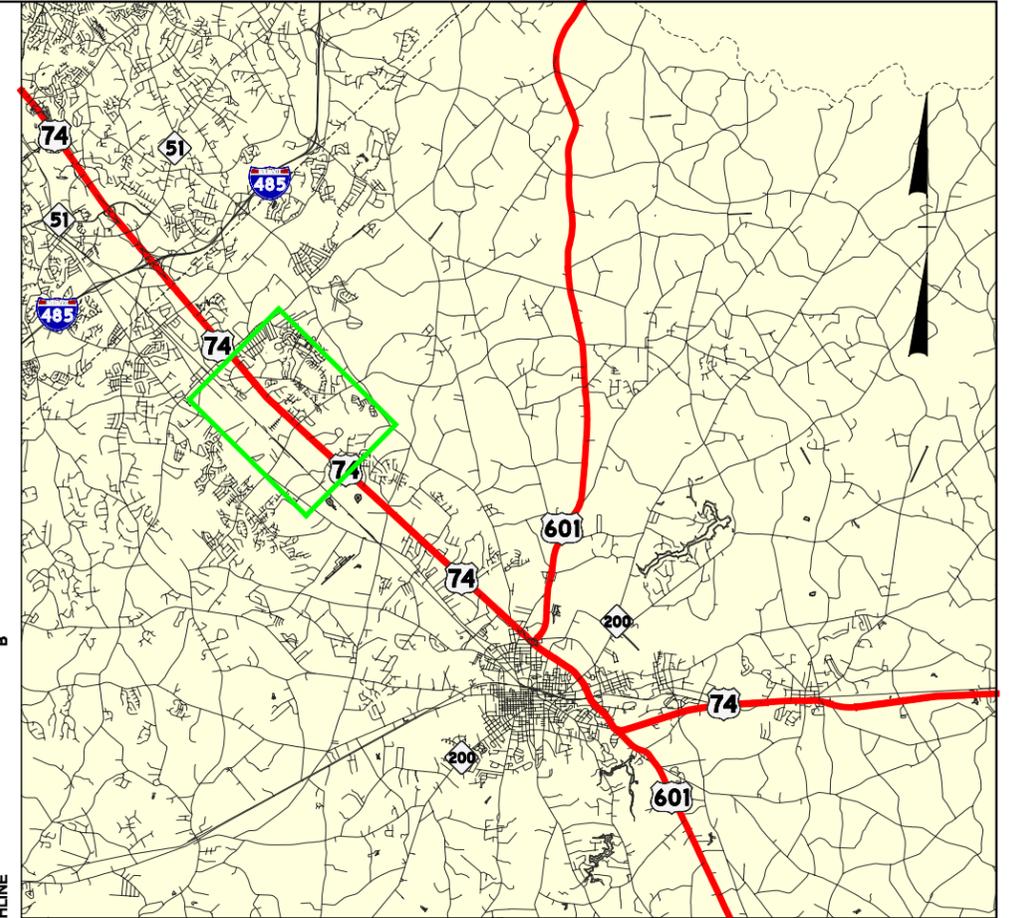
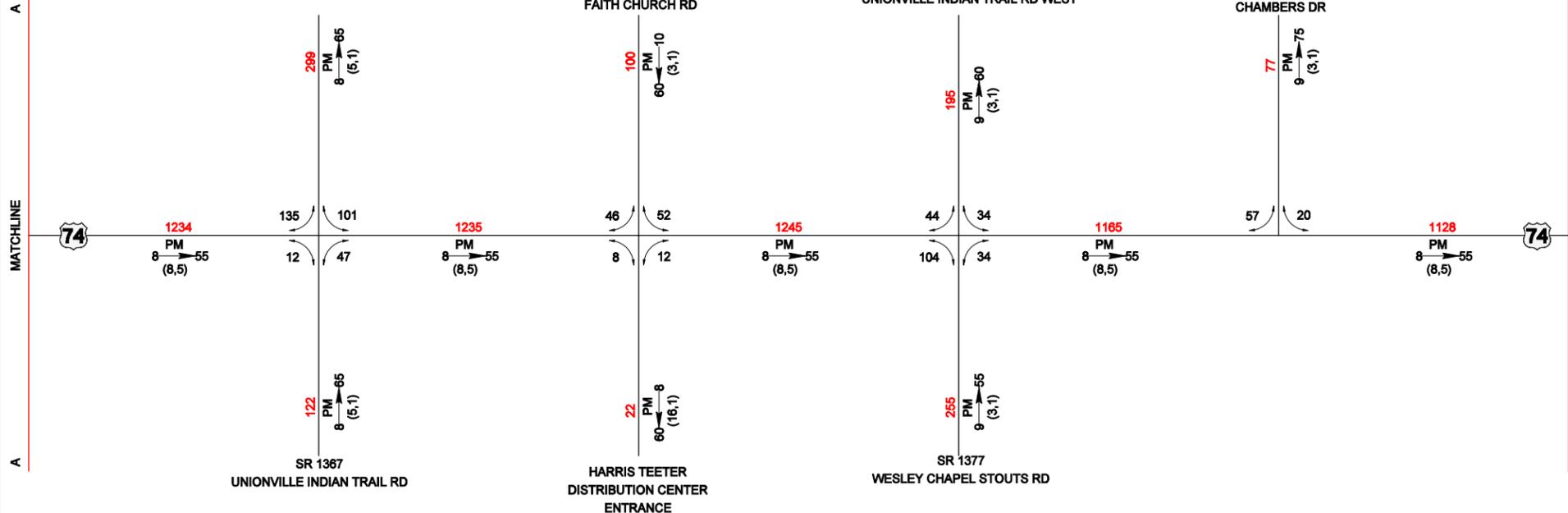
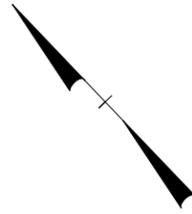
PROJECT: Monroe Connector/Bypass      SHEET NUMBER: 1

DIVISION: 10      DATE: April 2008      PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 NO BUILD SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559      LOCATION: US 74 in Mecklenburg and Union Counties

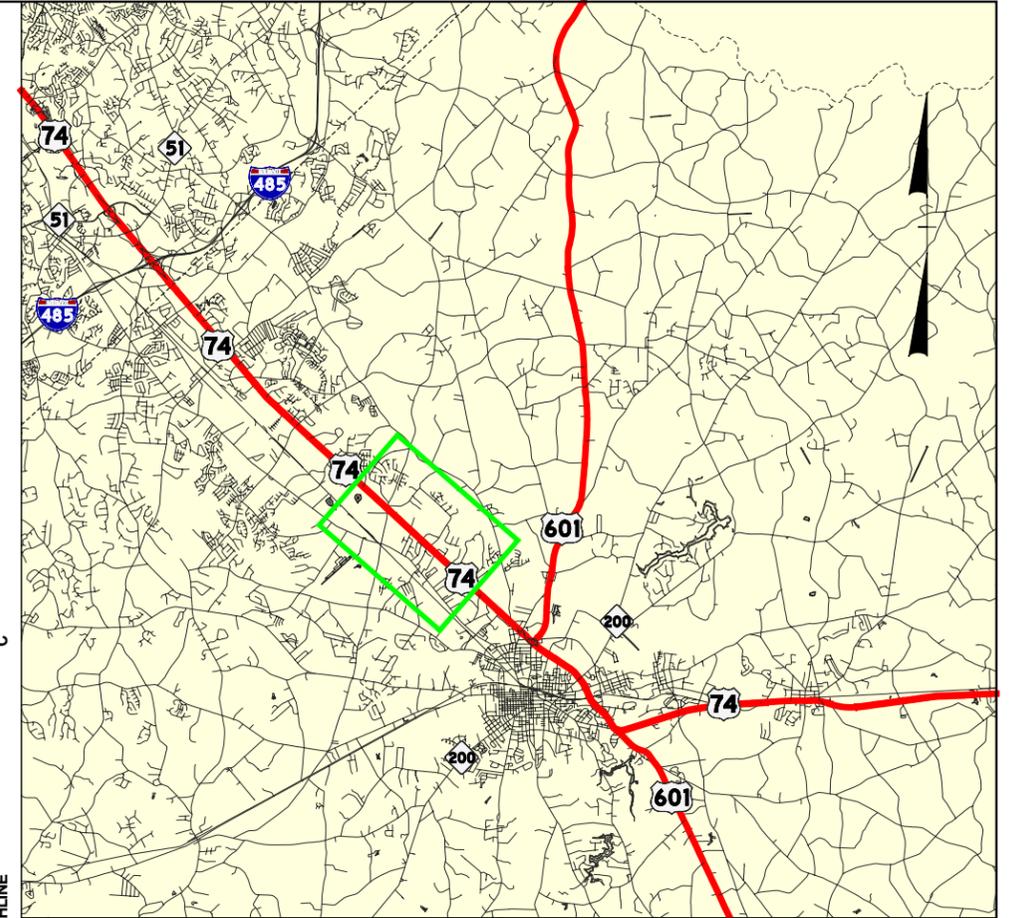
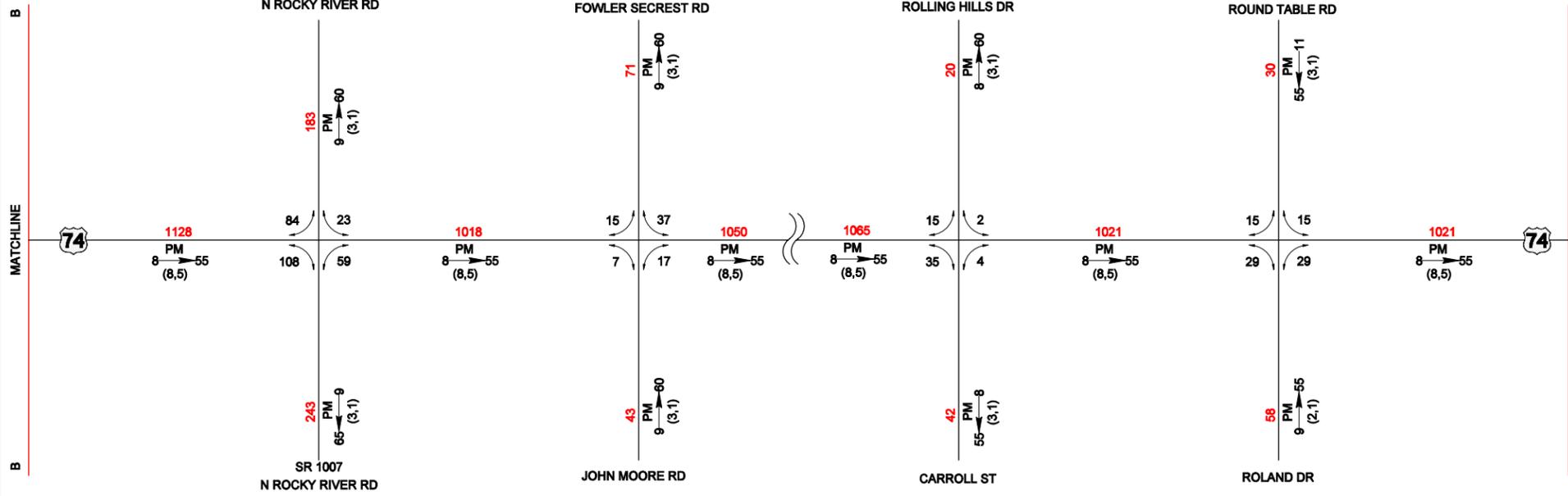
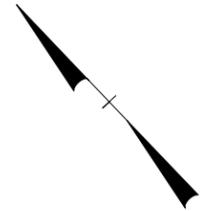
PROJECT: Monroe Connector/Bypass      SHEET NUMBER: 2

DIVISION: 10      DATE: April 2008      PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D      DHV Design Hourly Volume (%) =  $K_{30}$
- (d, t)      PM Peak Period      ### No. of Vehicles Per Day (VPD) in 100s
- D Peak Hour Directional Split (%)      1- Less than 50 VPD
- $\rightarrow$  Indicates Direction of D      ### Turning volume (VPD)
- (d, t) Duals, TTST (%)





# 2035 NO BUILD SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559      LOCATION: US 74 in Mecklenburg and Union Counties

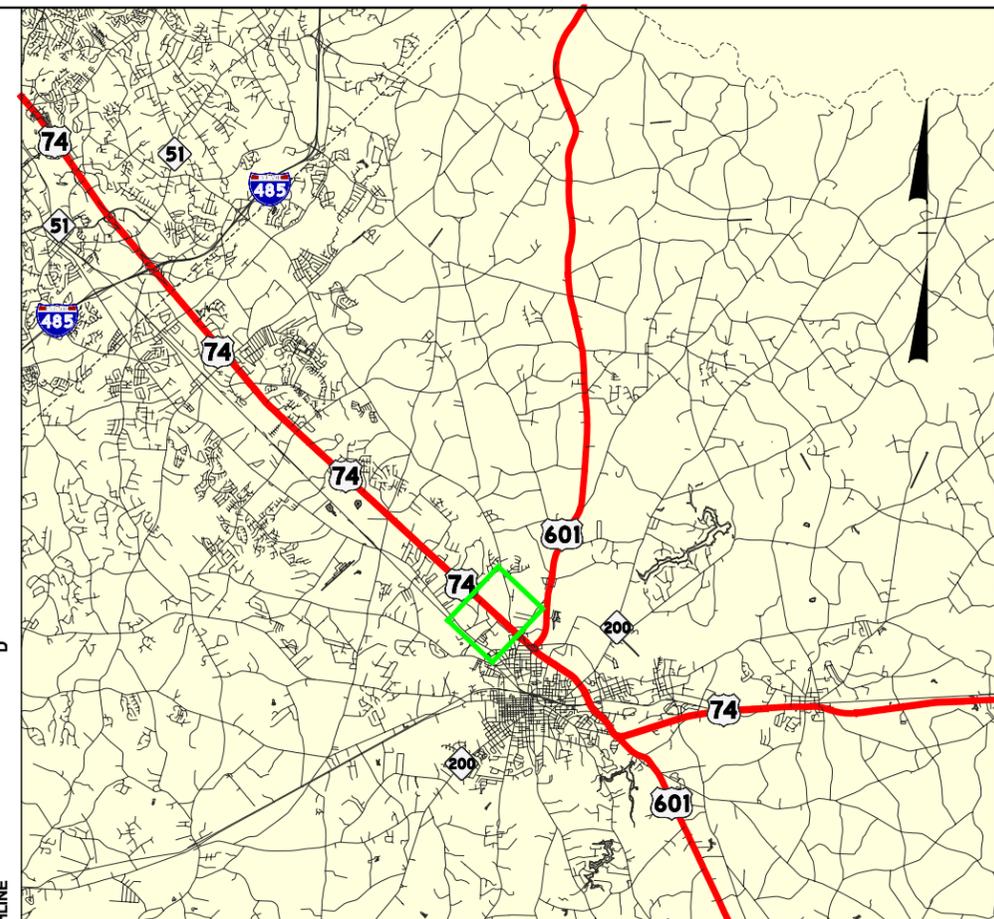
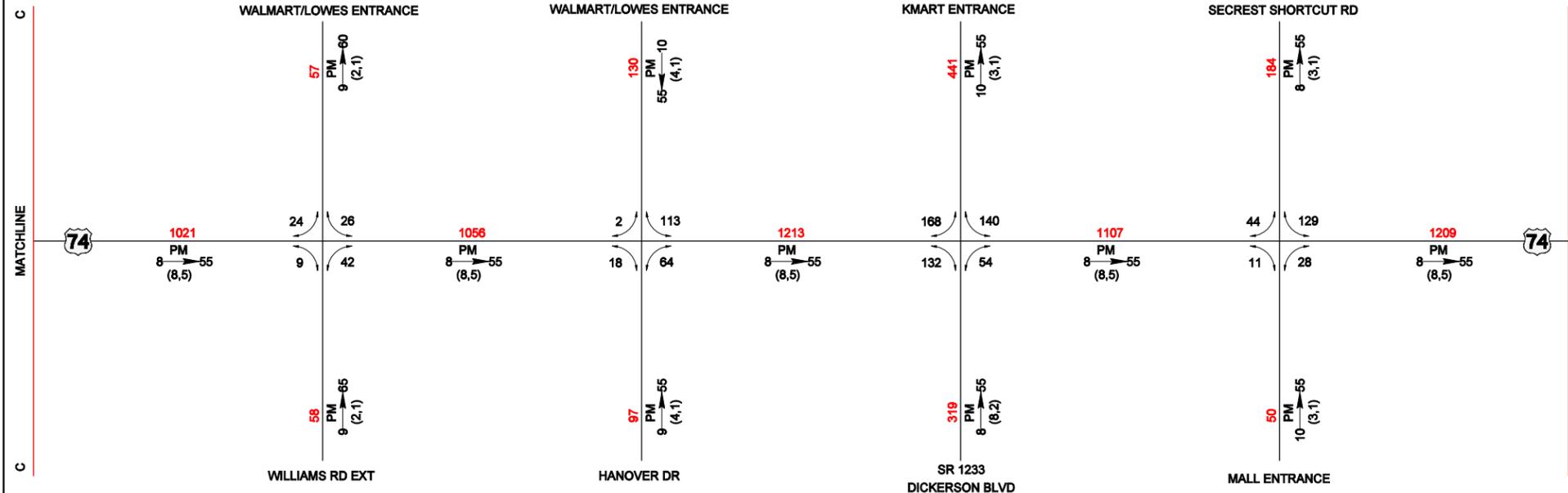
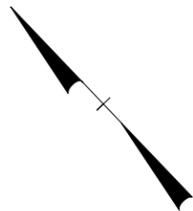
PROJECT: Monroe Connector/Bypass      SHEET NUMBER: 3

DIVISION: 10      DATE: April 2008      PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 NO BUILD SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559      LOCATION: US 74 in Mecklenburg and Union Counties

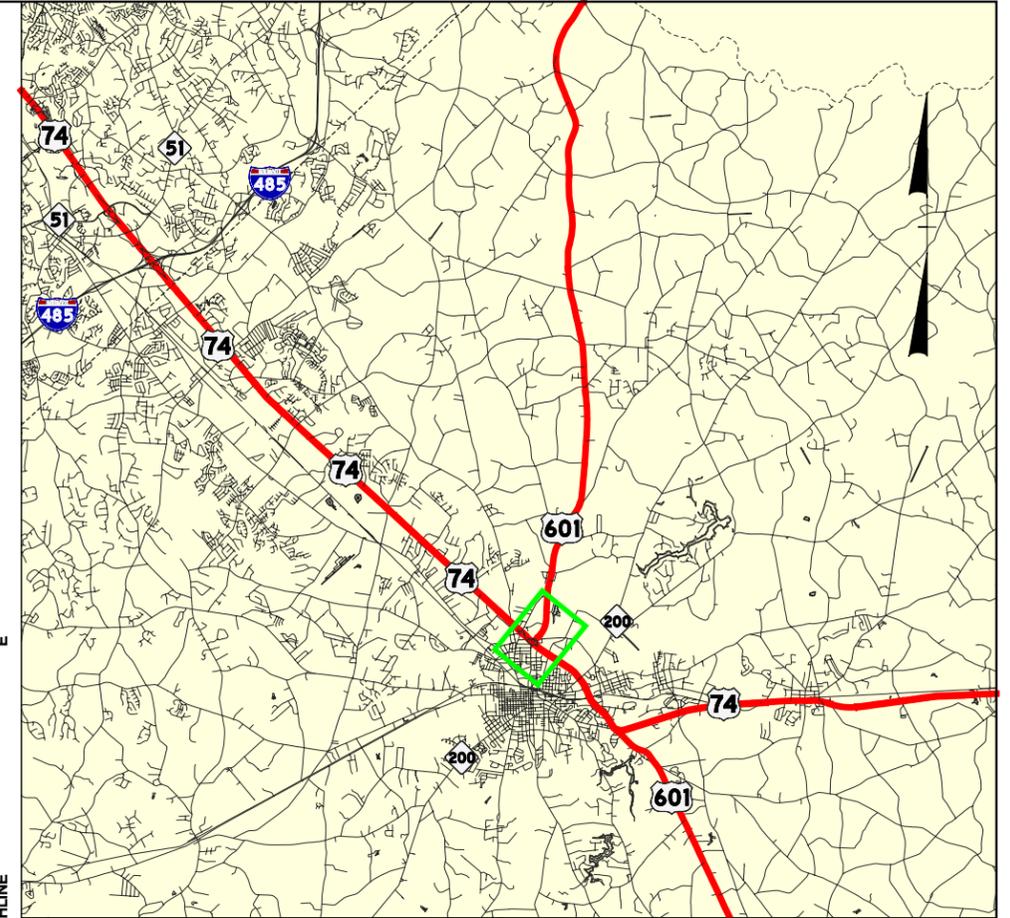
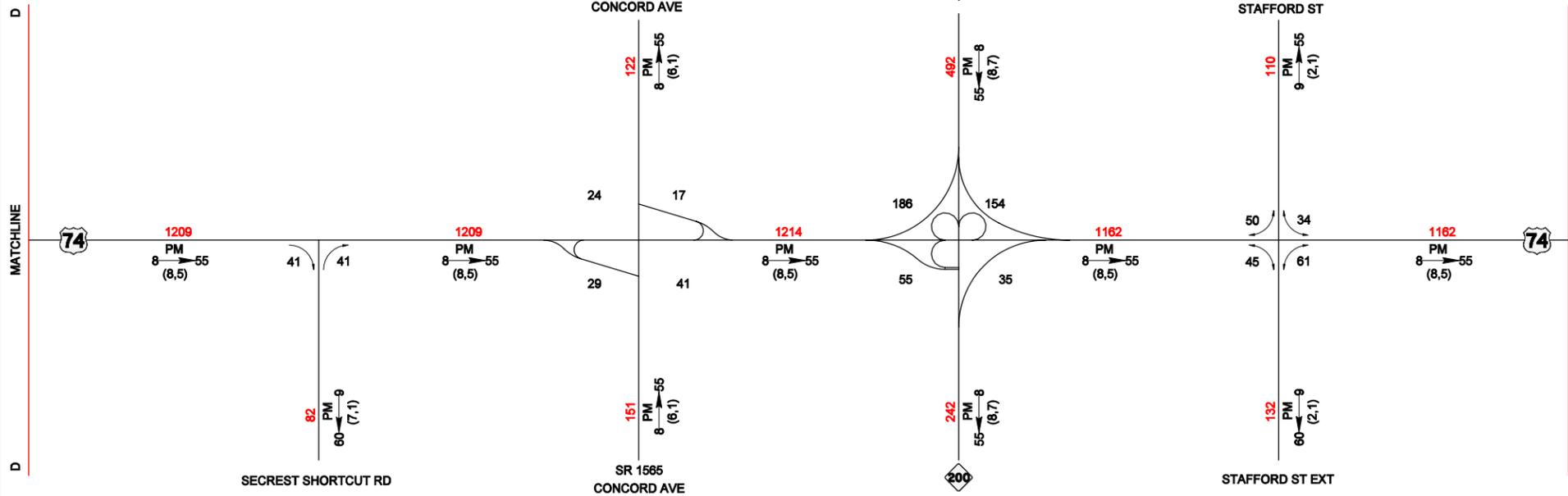
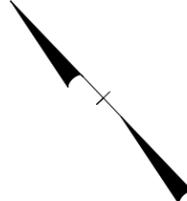
PROJECT: Monroe Connector/Bypass      SHEET NUMBER: 4

DIVISION: 10      DATE: April 2008      PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t)      DHV Design Hourly Volume (%) =  $K_{30}$
- PM      Peak Period
- D      Peak Hour Directional Split (%)
- $\rightarrow$       Indicates Direction of D
- (d, t)      Duals, TTST (%)
- ###      No. of Vehicles Per Day (VPD) in 100s
- 1-      Less than 50 VPD
- ###      Turning volume (VPD)





# 2035 NO BUILD SCENARIO

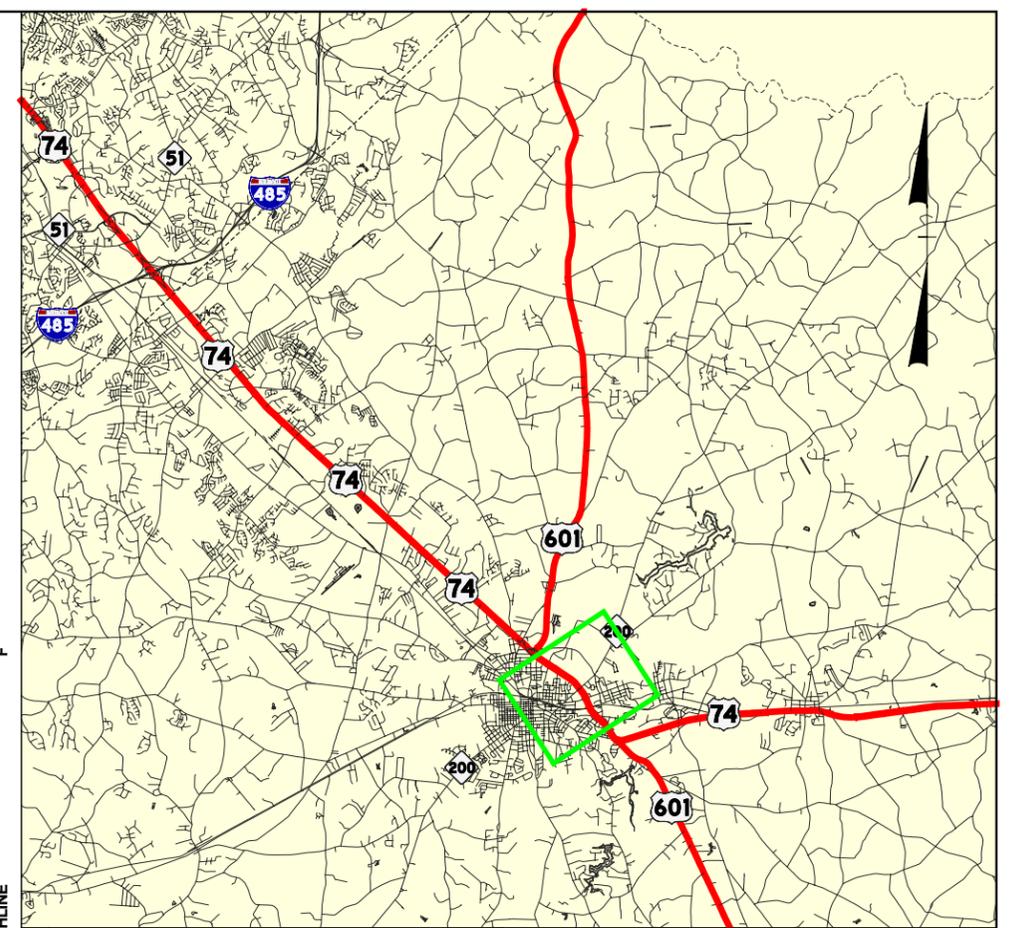
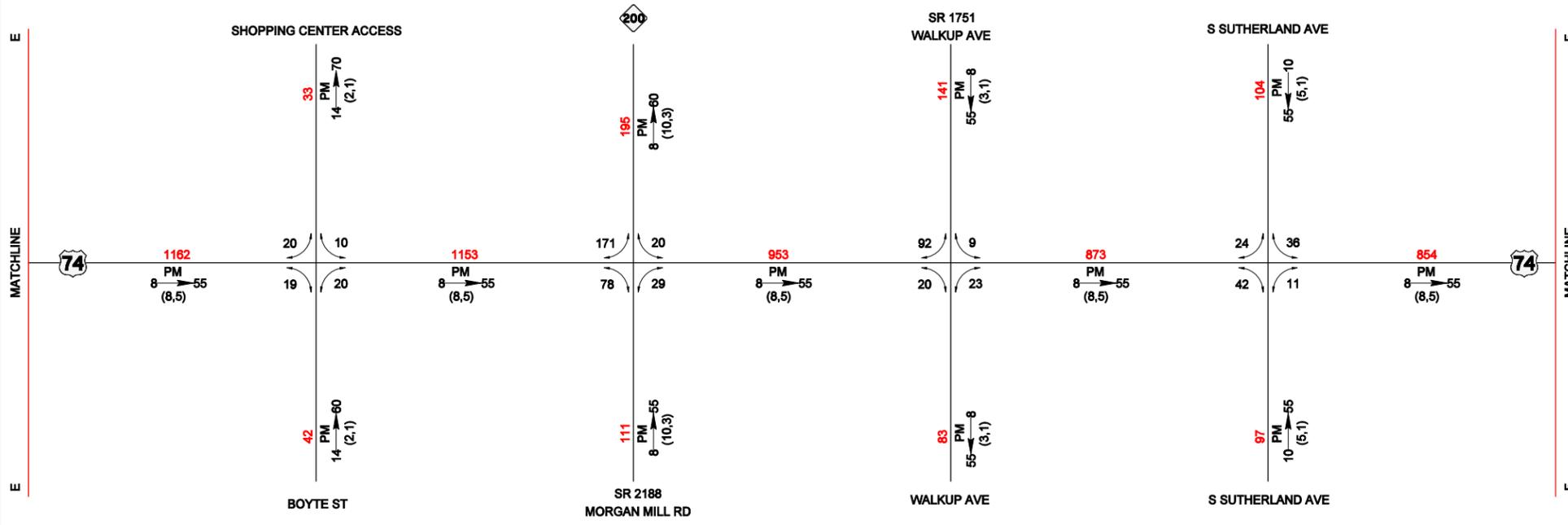
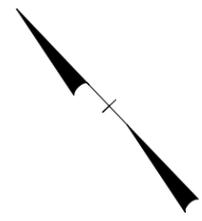
**AVERAGE ANNUAL DAILY TRAFFIC WITH TRUCK, DHV AND DIRECTIONAL FACTORS**

TIP: R-3329/R-2559	LOCATION: US 74 in Mecklenburg and Union Counties	
PROJECT: Monroe Connector/Bypass	SHEET NUMBER: 5	
DIVISION: 10	DATE: April 2008	PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t)
- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 NO BUILD SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559      LOCATION: US 74 in Mecklenburg and Union Counties

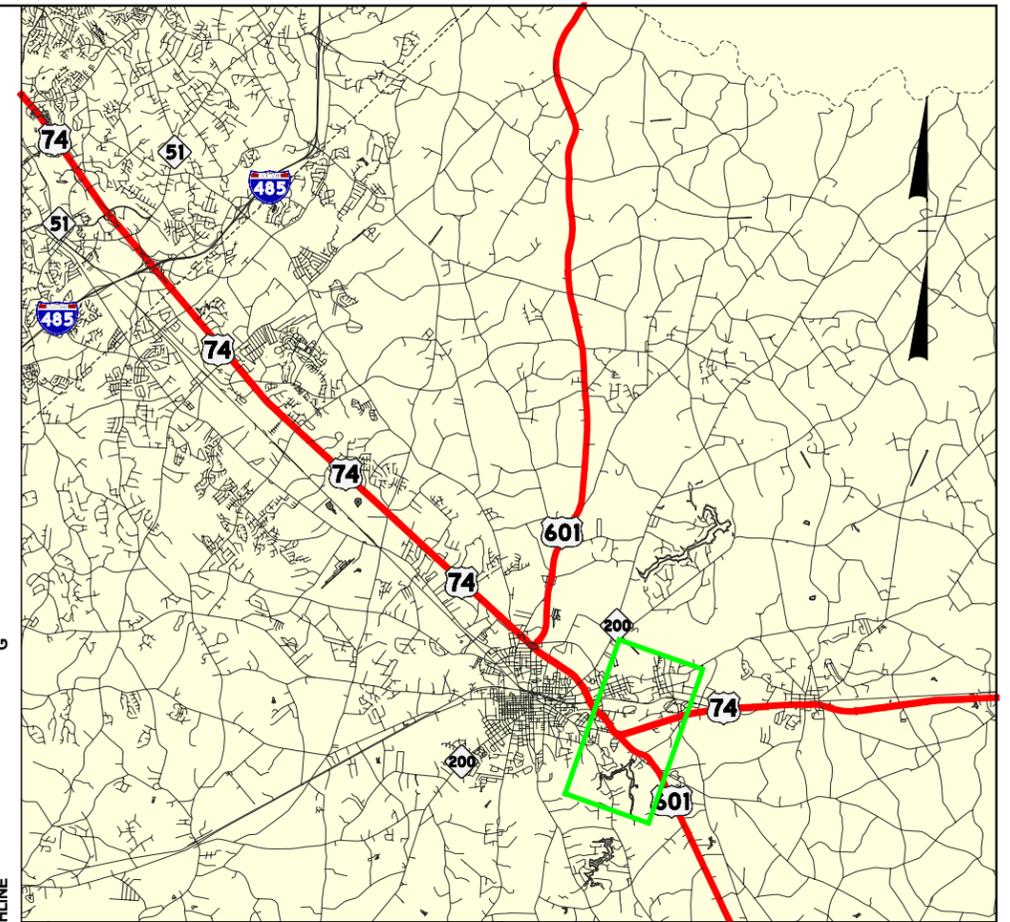
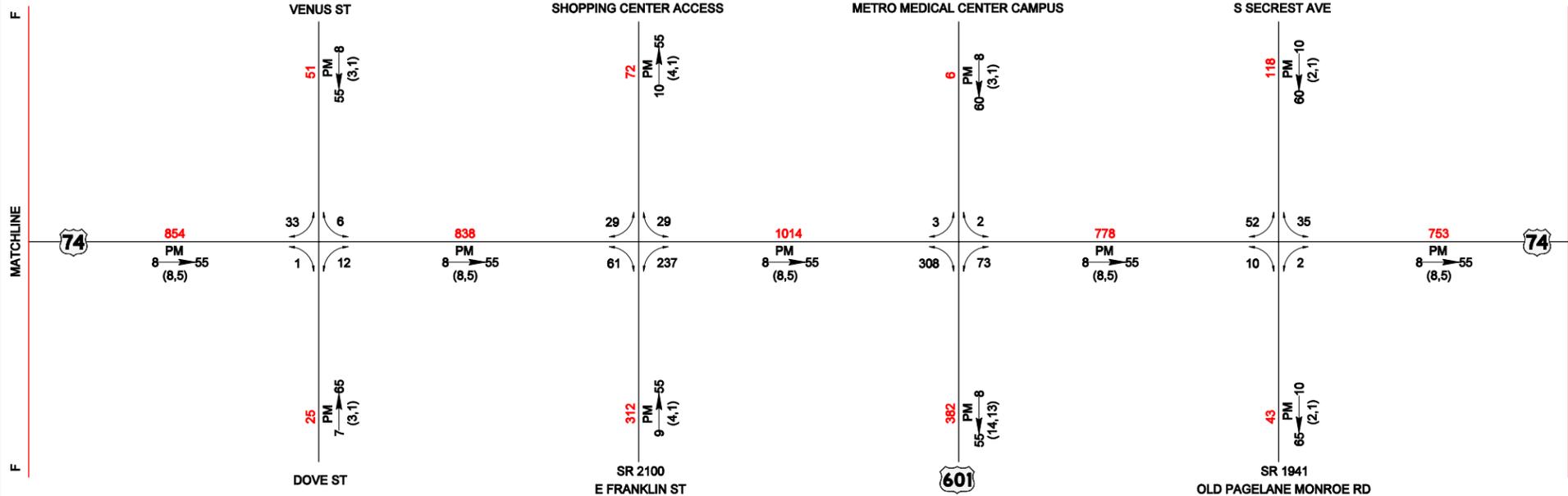
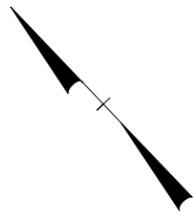
PROJECT: Monroe Connector/Bypass      SHEET NUMBER: 6

DIVISION: 10      DATE: April 2008      PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t)      DHV Design Hourly Volume (%) =  $K_{30}$
- PM      Peak Period
- D      Peak Hour Directional Split (%)
- $\rightarrow$       Indicates Direction of D
- (d, t)      Duals, TTST (%)
- ###      No. of Vehicles Per Day (VPD) in 100s
- 1-      Less than 50 VPD
- ###      Turning volume (VPD)





# 2035 NO BUILD SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559

LOCATION: US 74 in Mecklenburg and Union Counties

PROJECT: Monroe Connector/Bypass

SHEET NUMBER: 7

DIVISION: 10

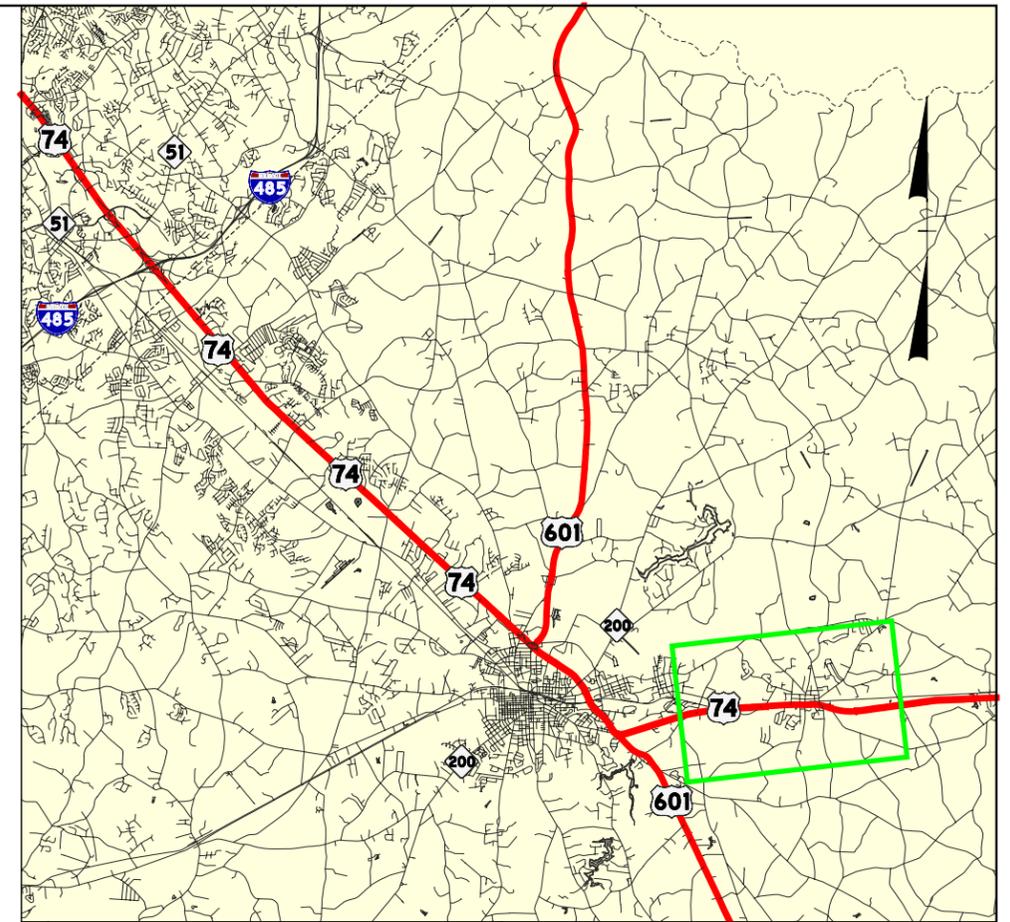
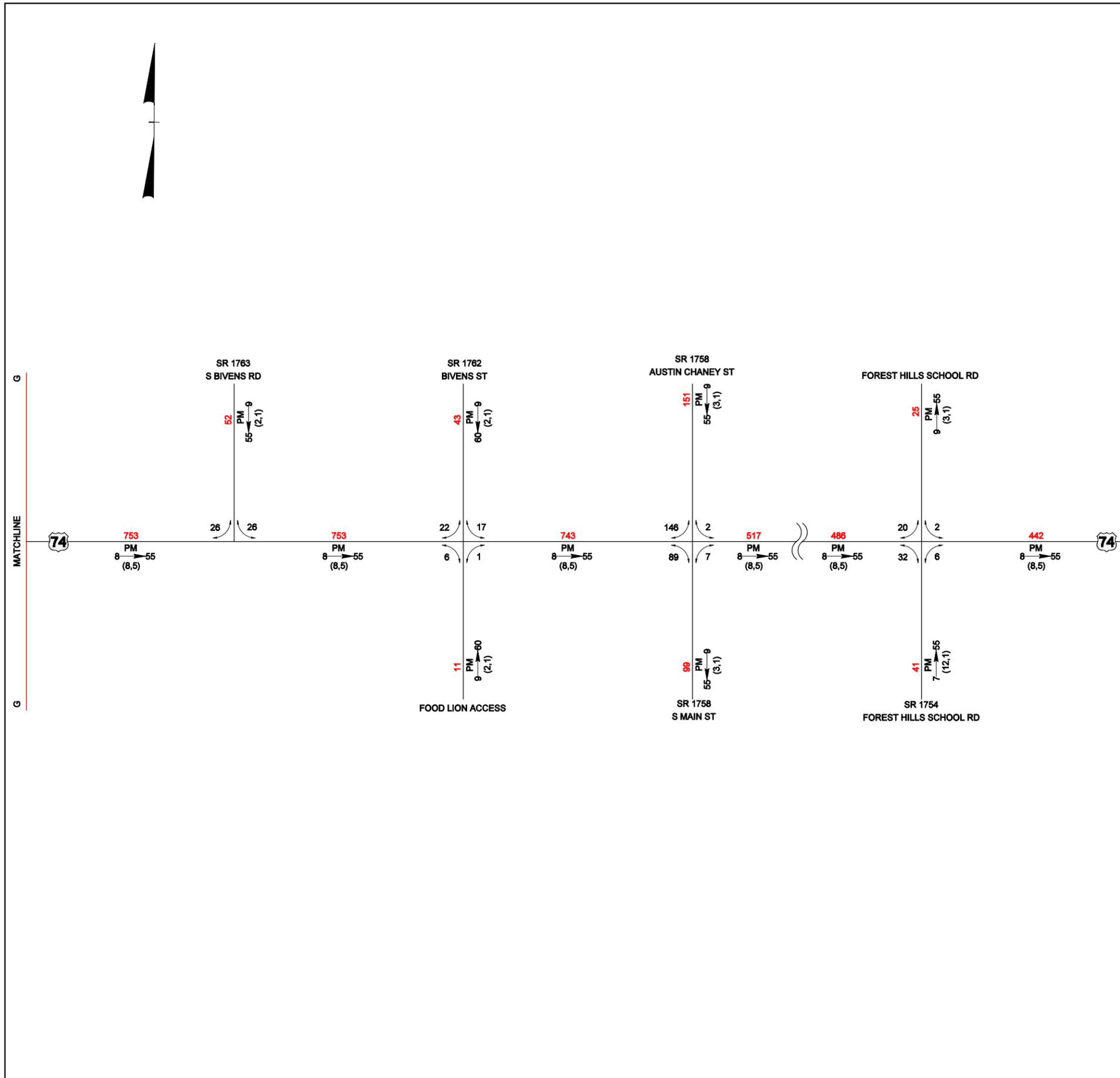
DATE: April 2008

PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}} \text{D}$   
(d, t)
- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 NO BUILD SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
 WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559      LOCATION: US 74 in Mecklenburg and Union Counties

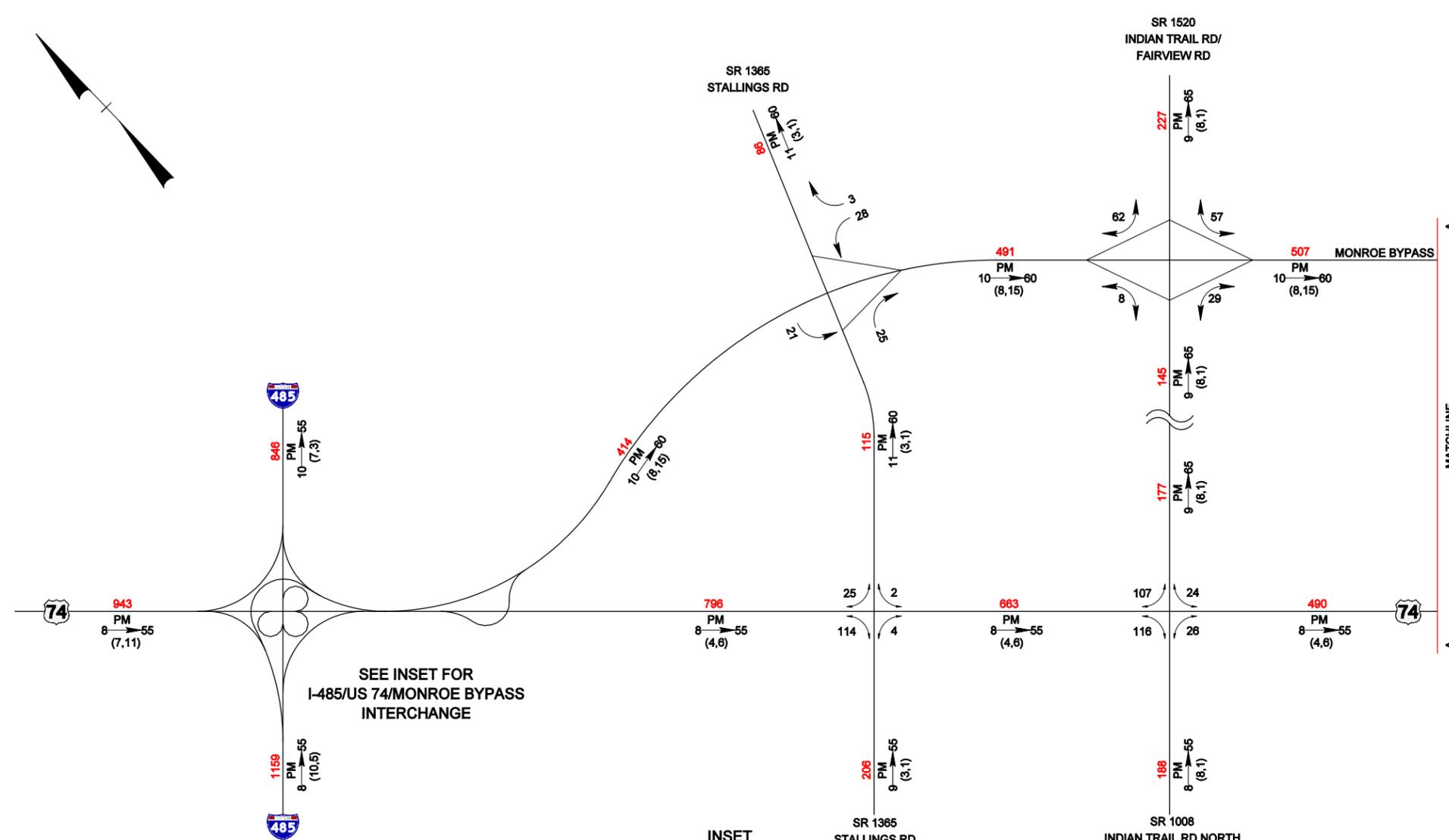
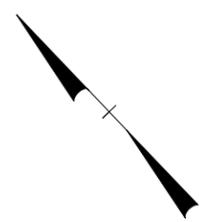
PROJECT: Monroe Connector/Bypass      SHEET NUMBER: 8

DIVISION: 10      DATE: April 2008      PREPARED BY: Wilbur Smith Associates

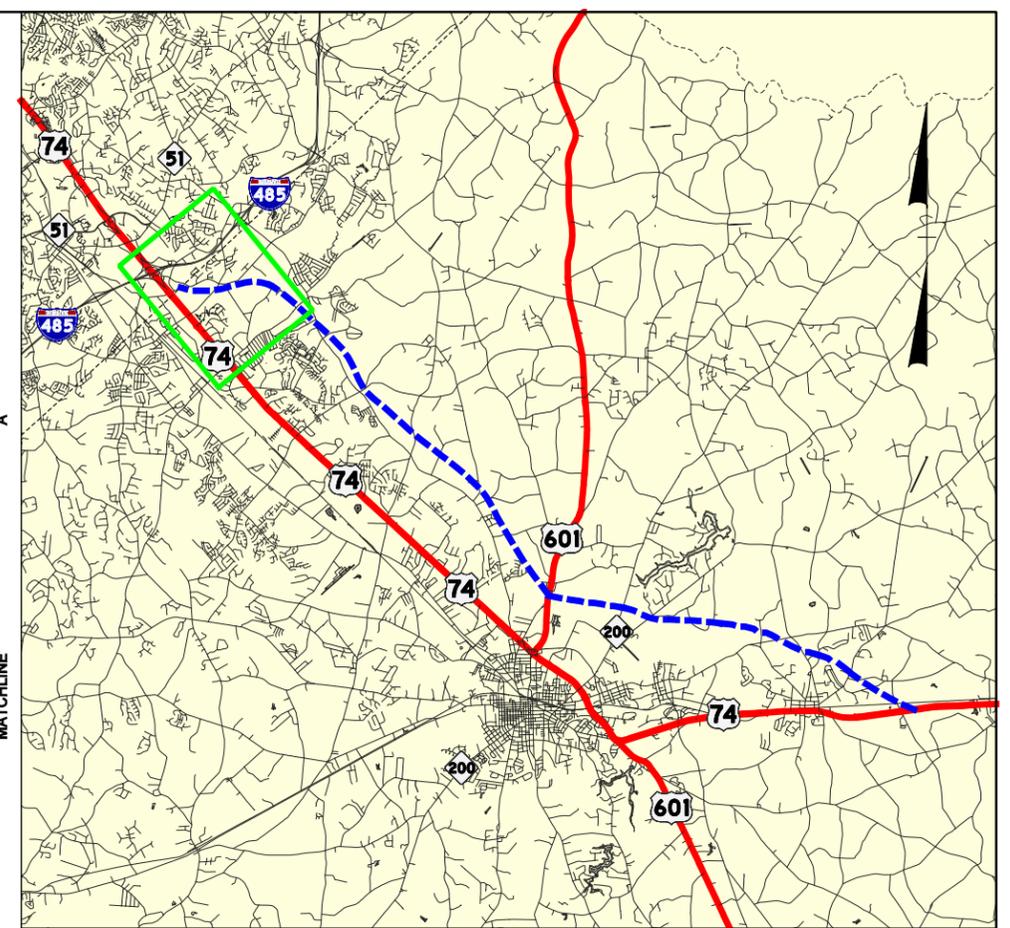
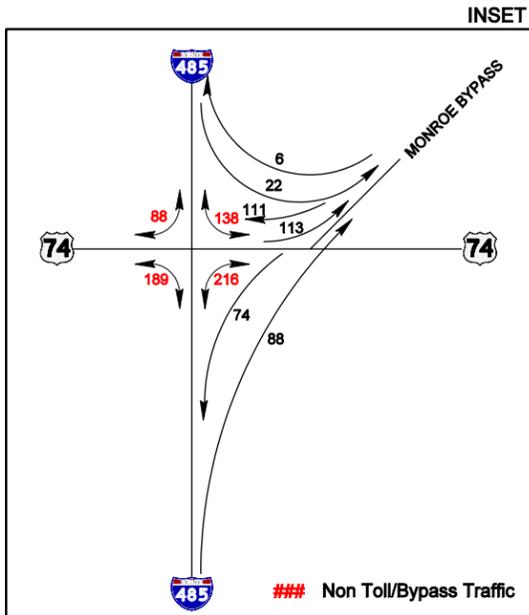
## LEGEND

- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





SEE INSET FOR  
I-485/US 74/MONROE BYPASS  
INTERCHANGE



# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **1A** LOCATION: US 74 in Mecklenburg and Union Counties

PROJECT: Monroe Connector/Bypass SHEET NUMBER: **1**

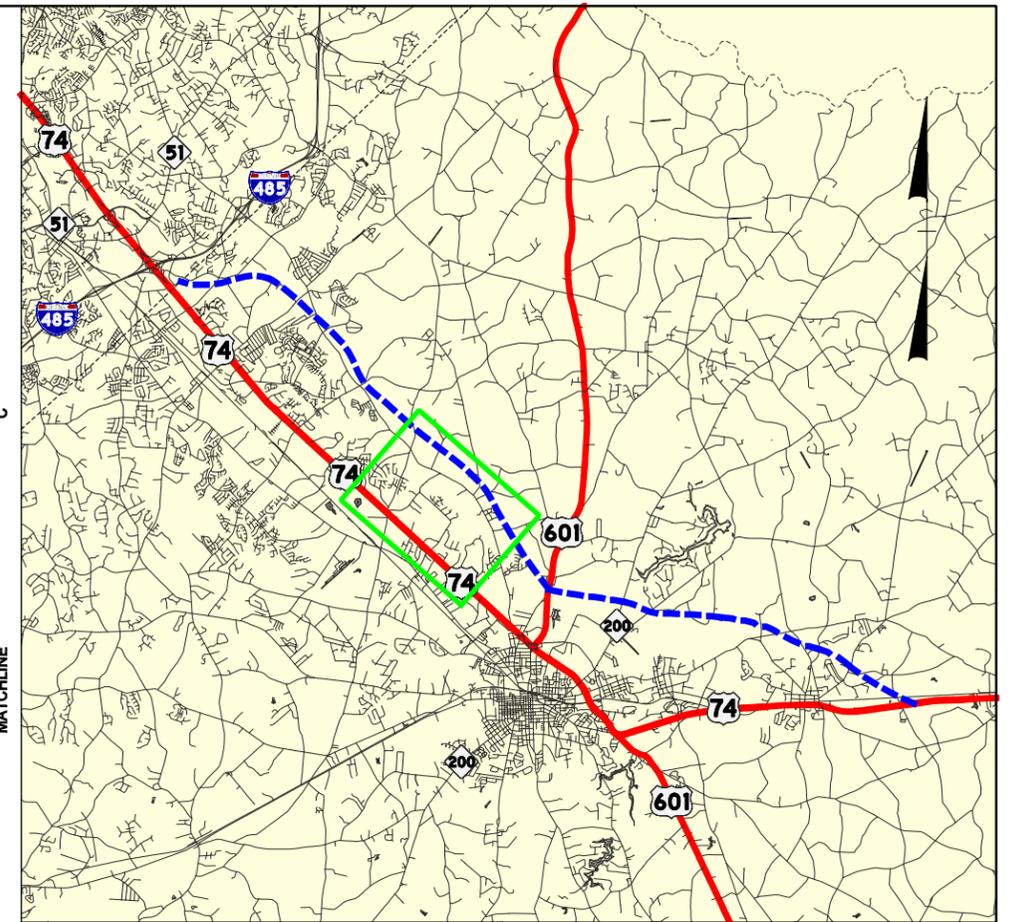
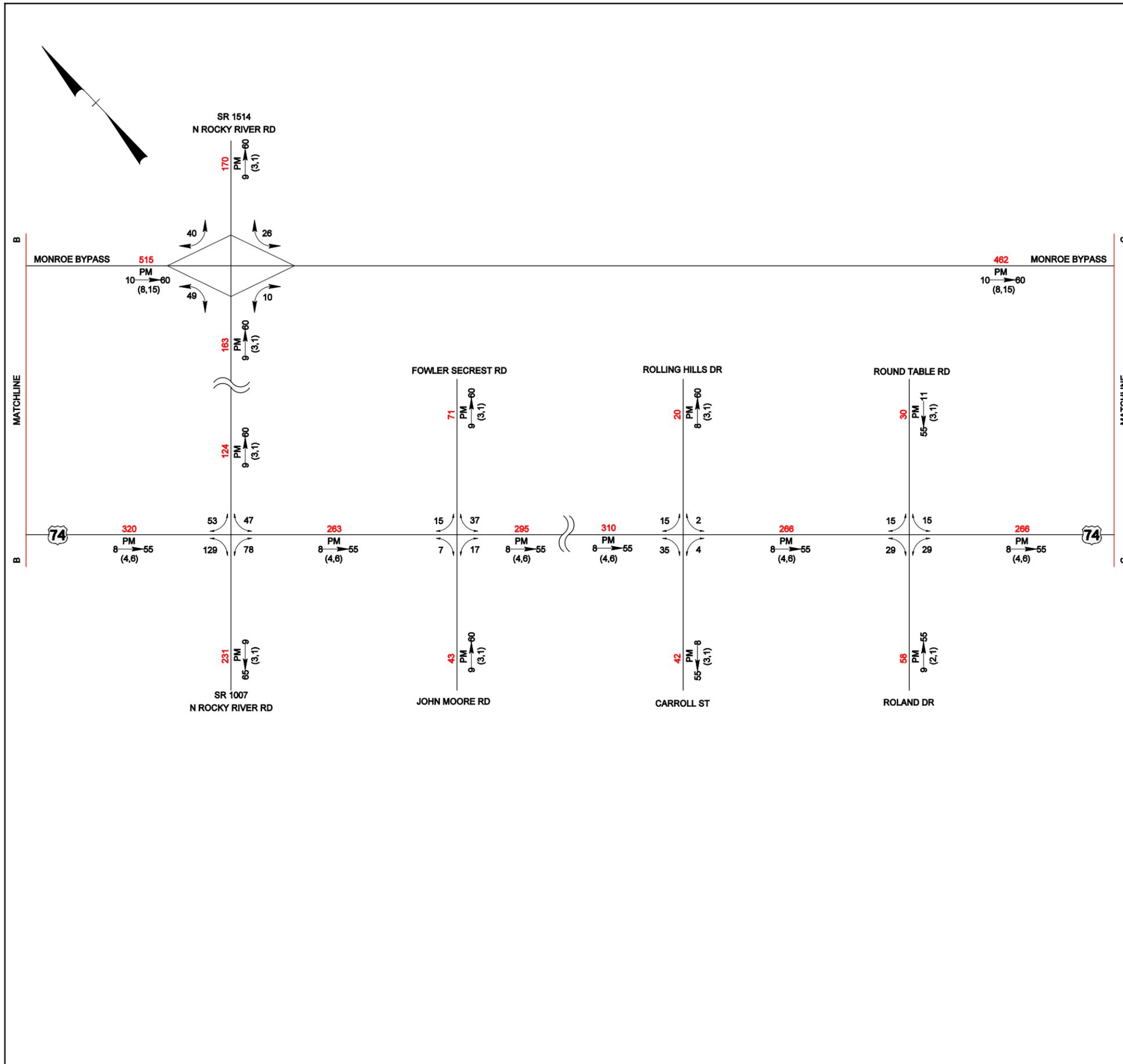
DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)







# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **1A** LOCATION: US 74 in Mecklenburg and Union Counties

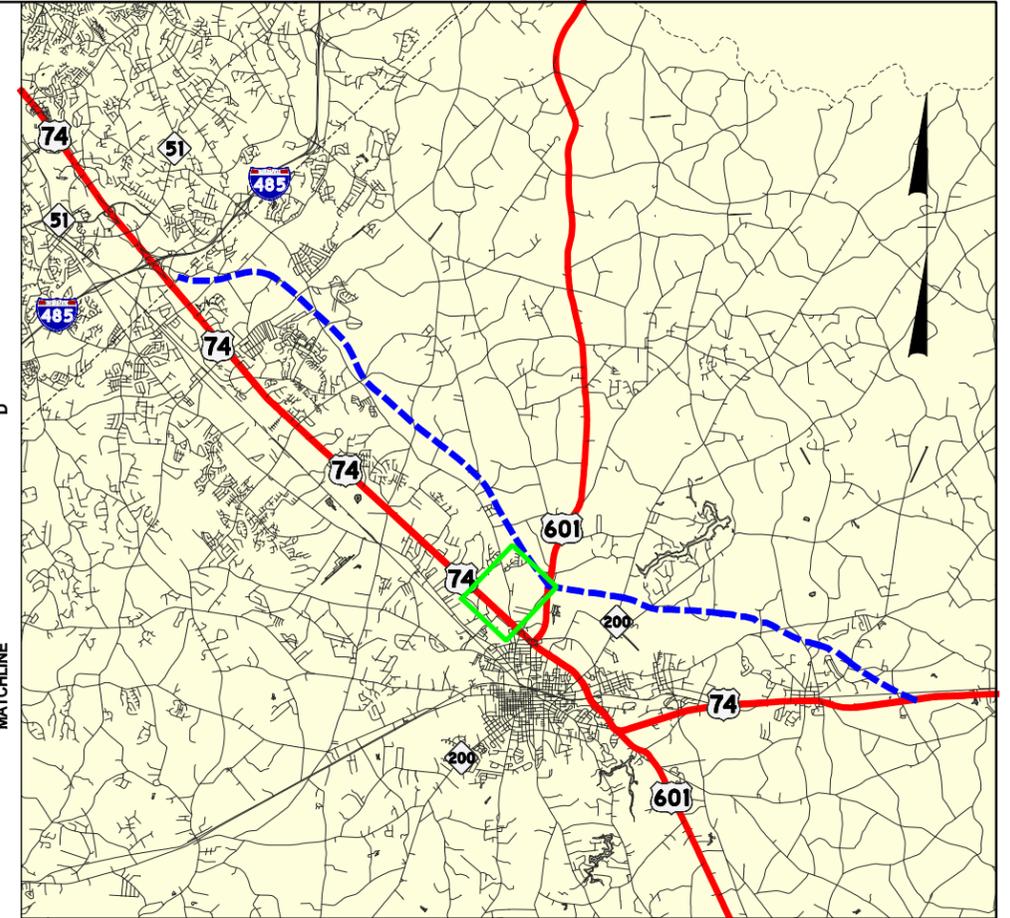
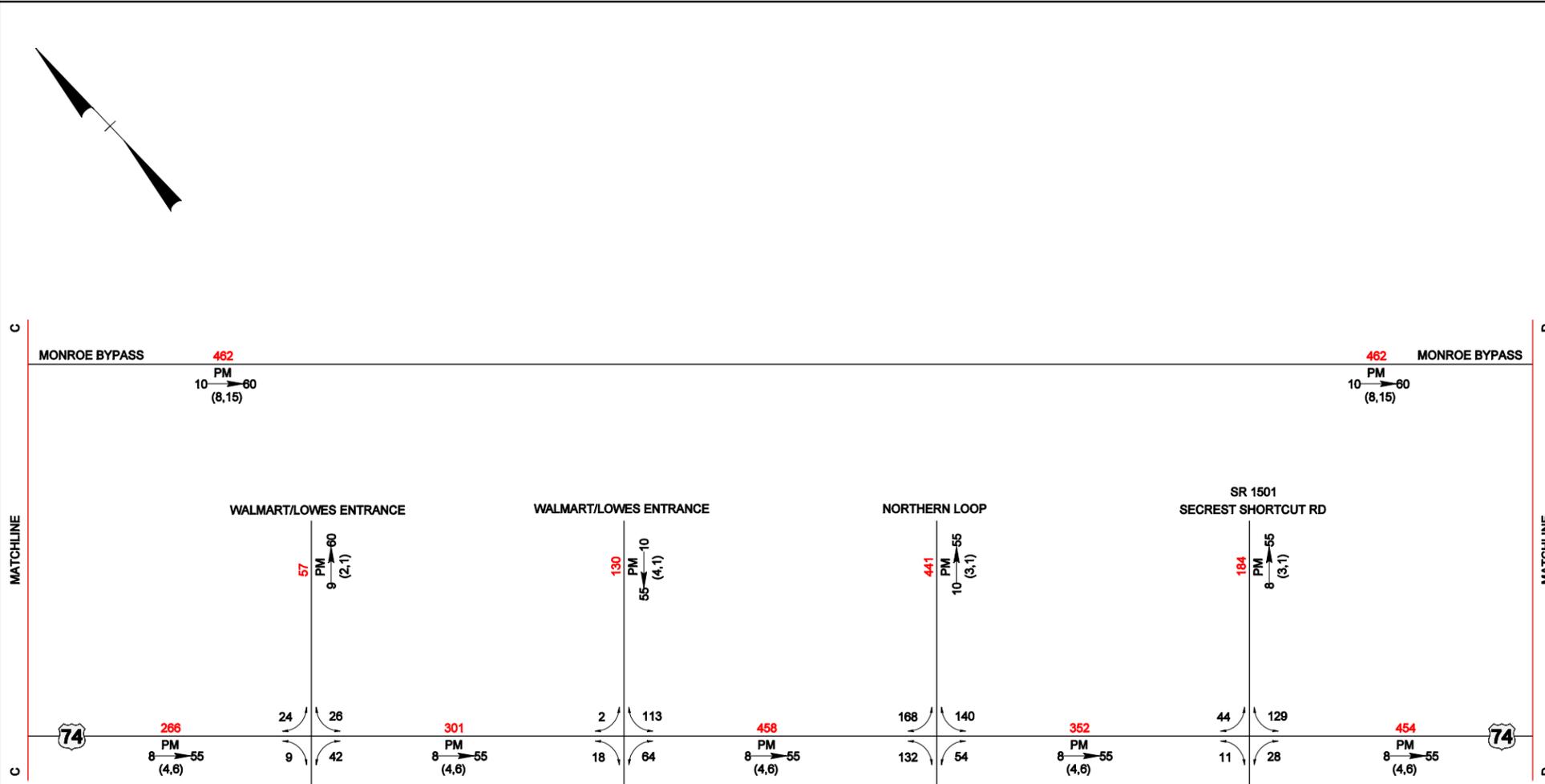
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **3**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t) Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **1A** LOCATION: US 74 in Mecklenburg and Union Counties

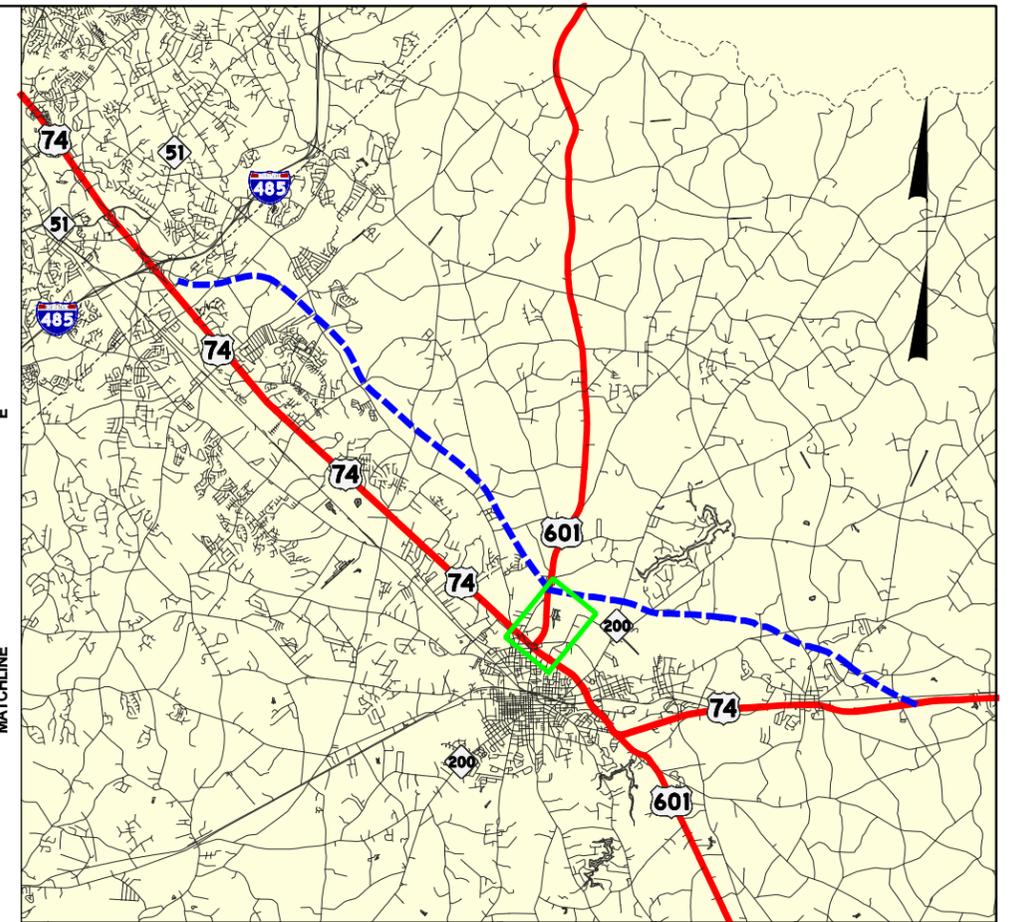
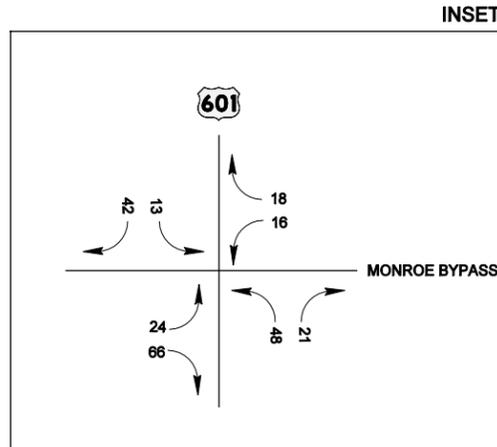
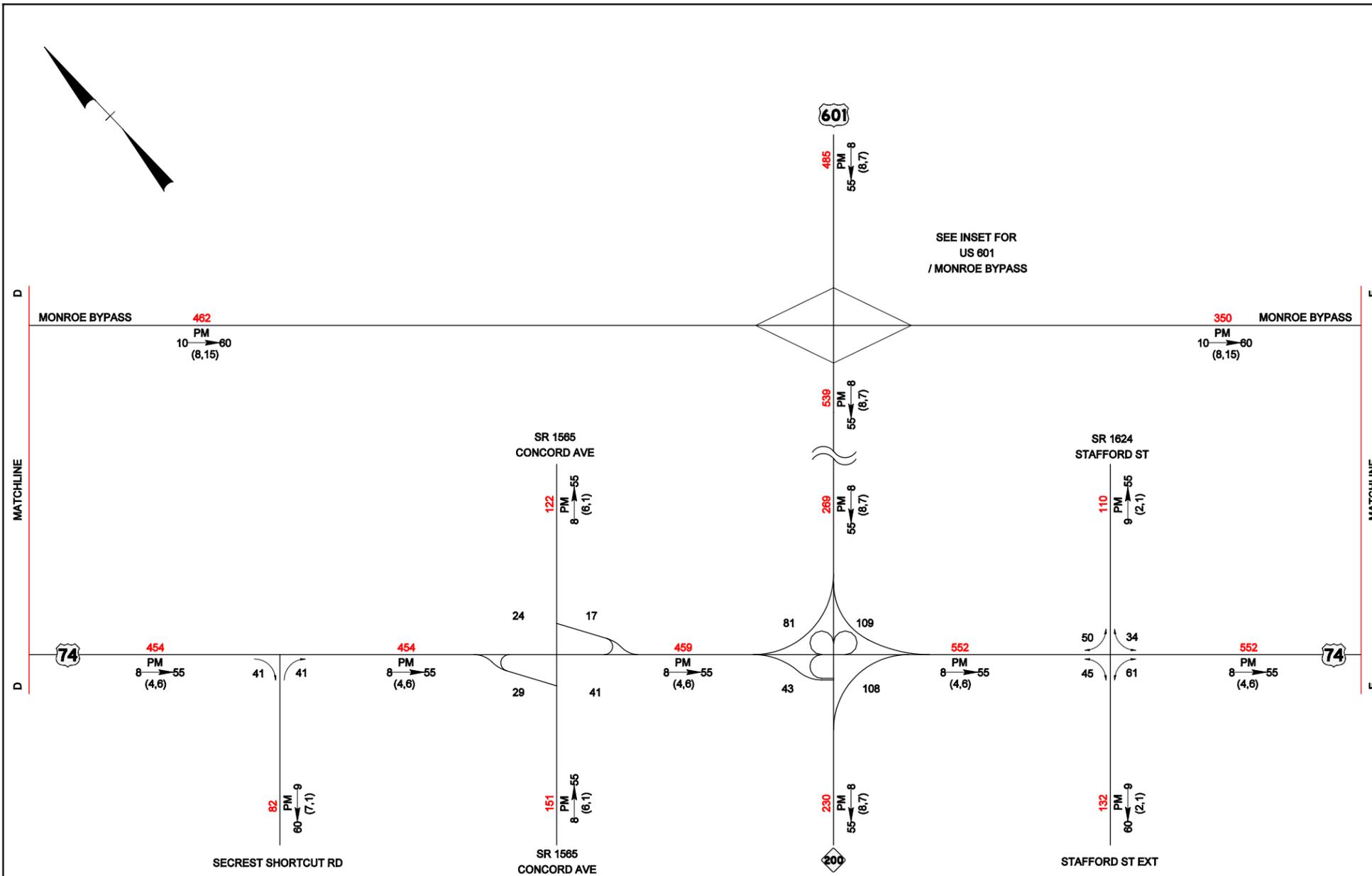
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **4**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **1A** LOCATION: US 74 in Mecklenburg and Union Counties

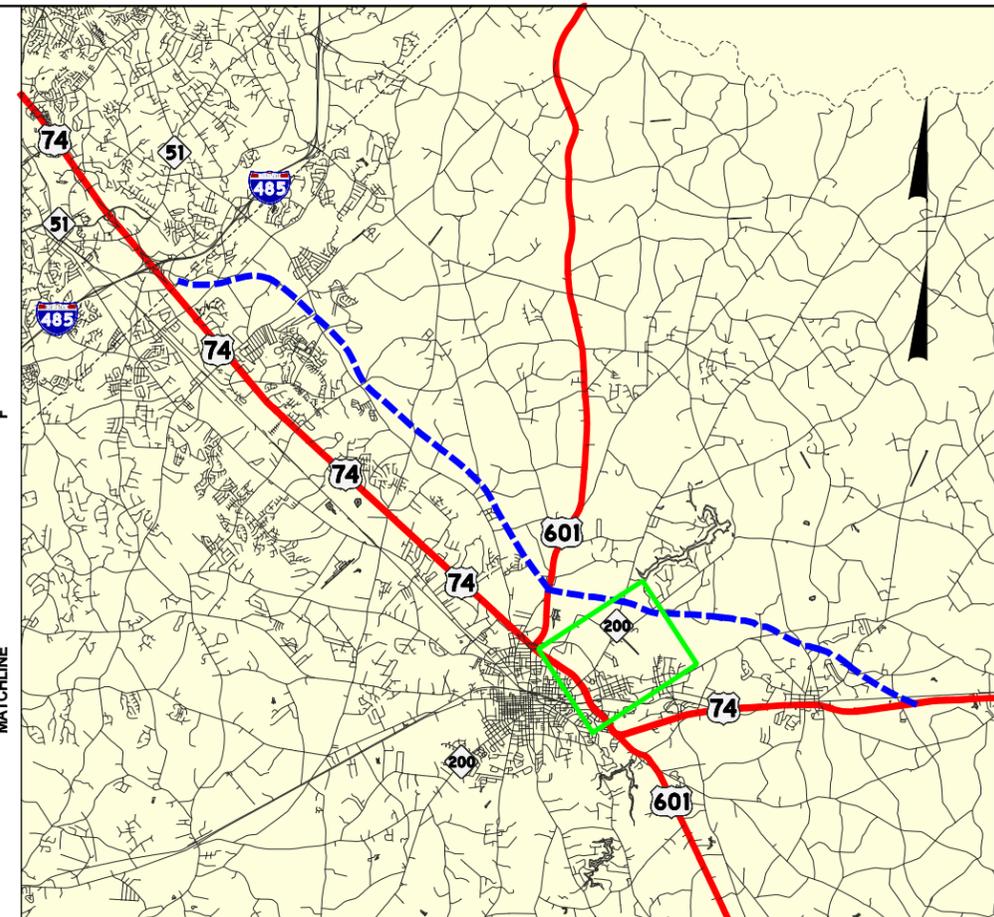
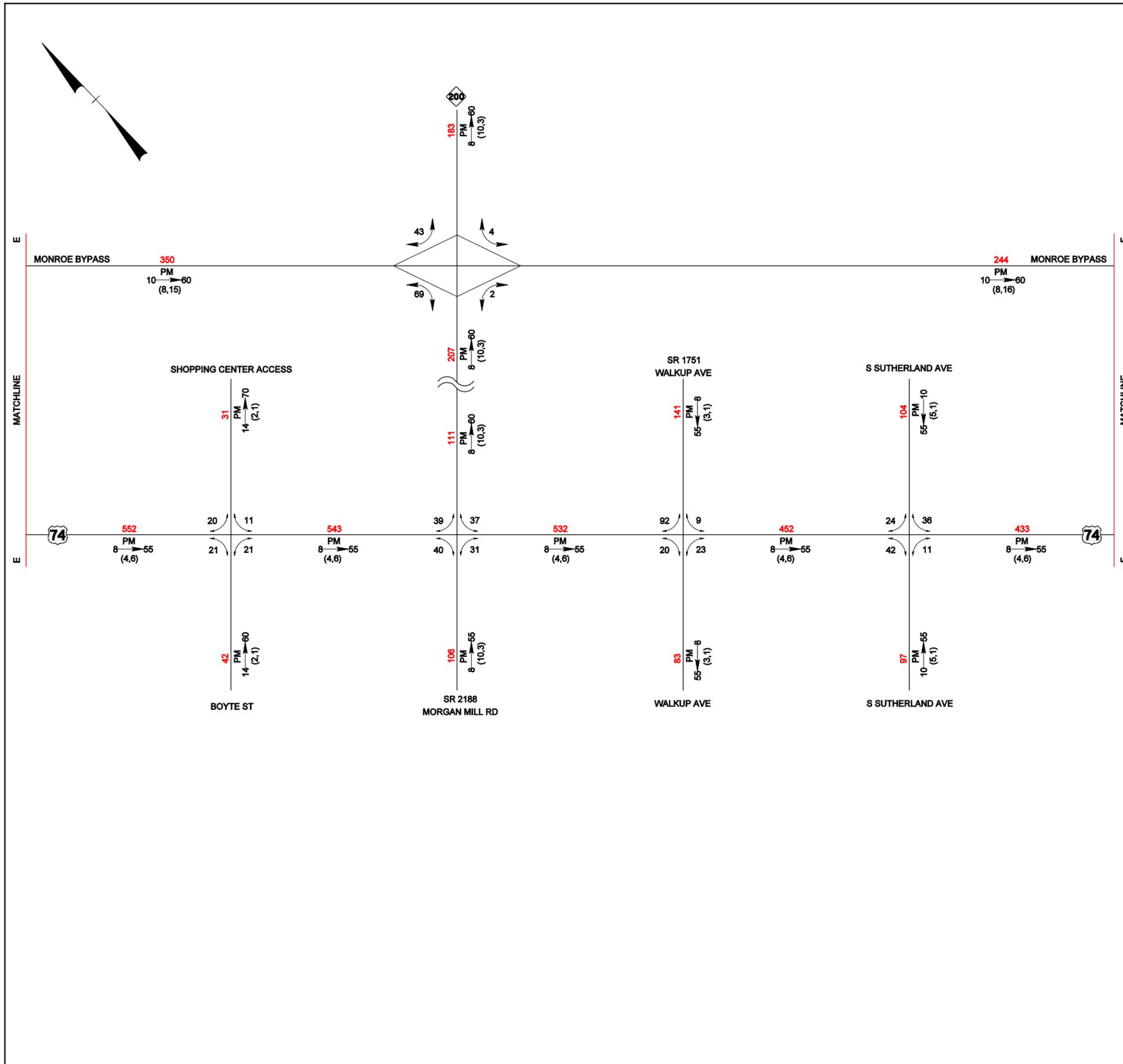
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **5**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **1A** LOCATION: US 74 in Mecklenburg and Union Counties

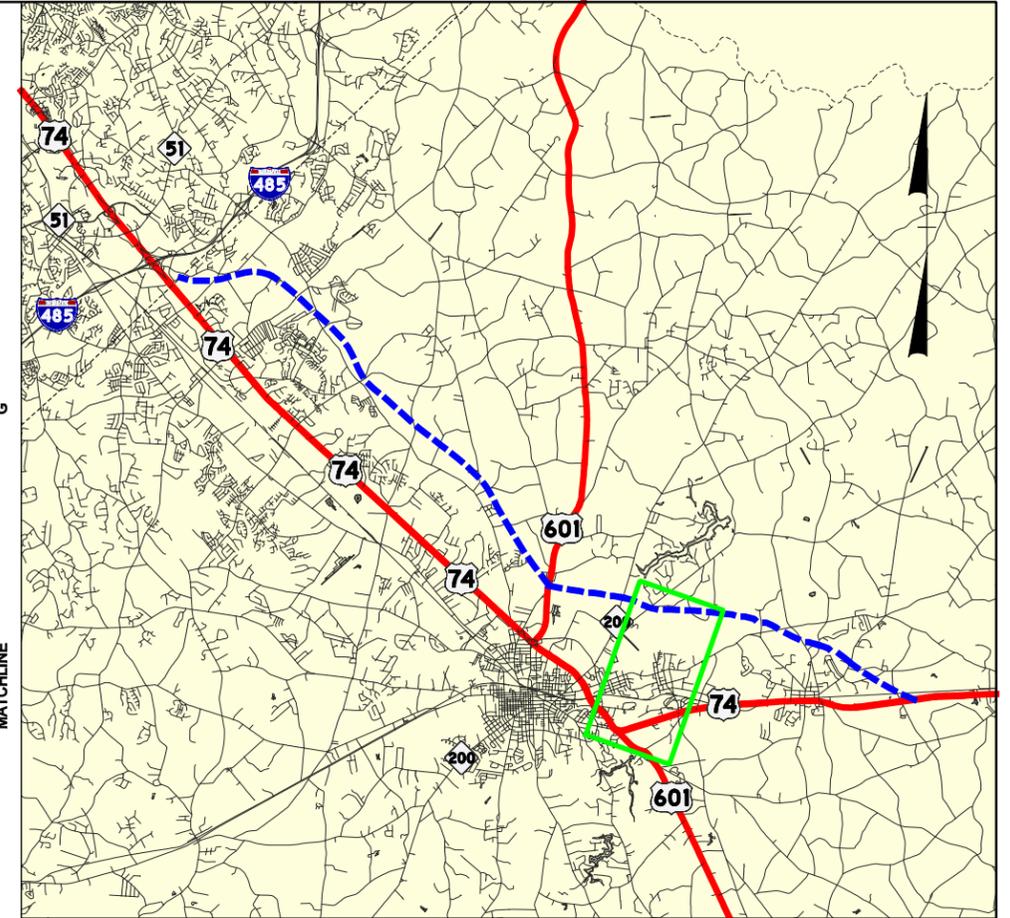
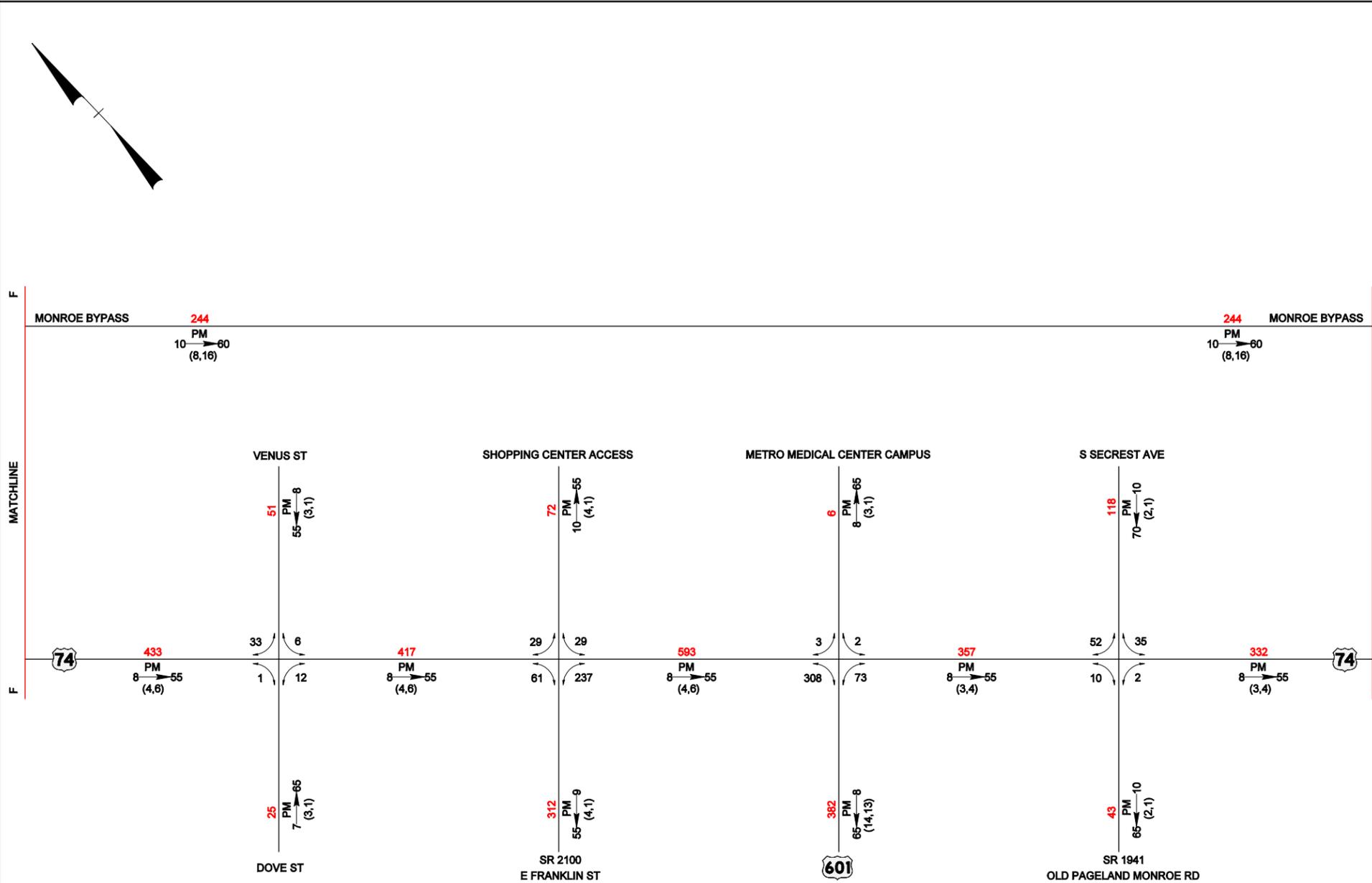
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **6**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t)
- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **1A** LOCATION: US 74 in Mecklenburg and Union Counties

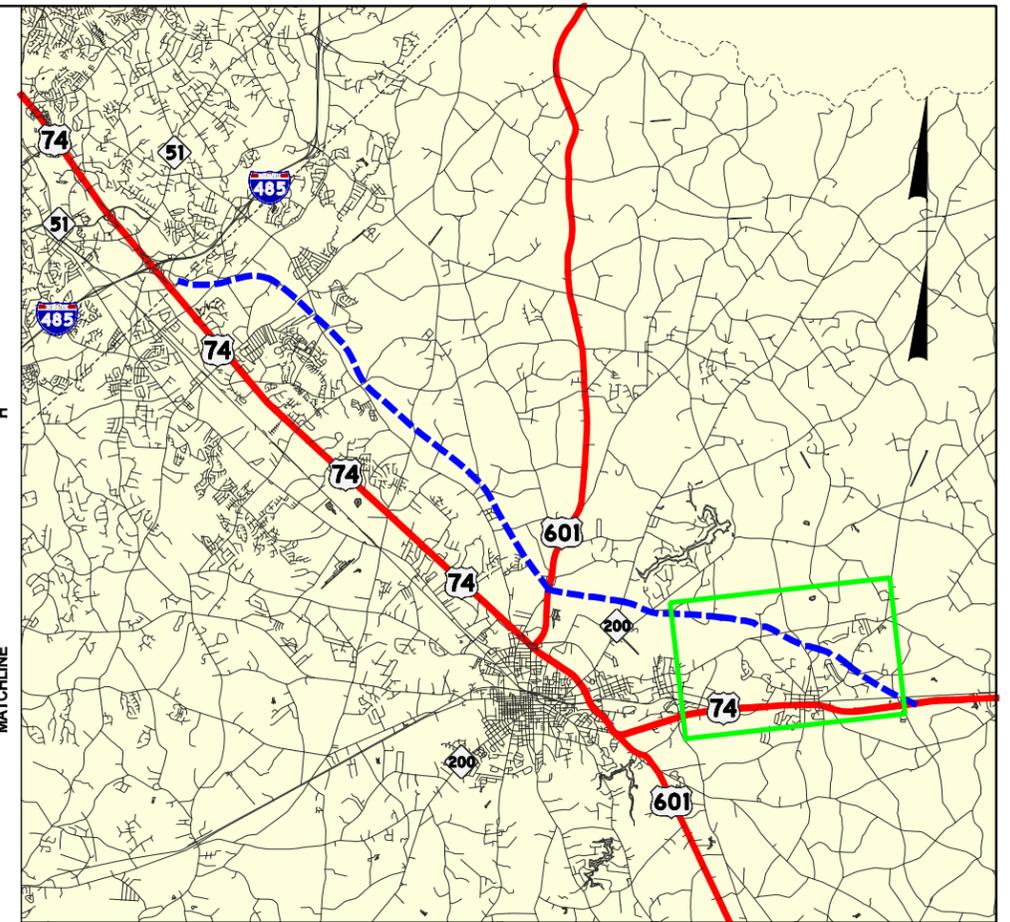
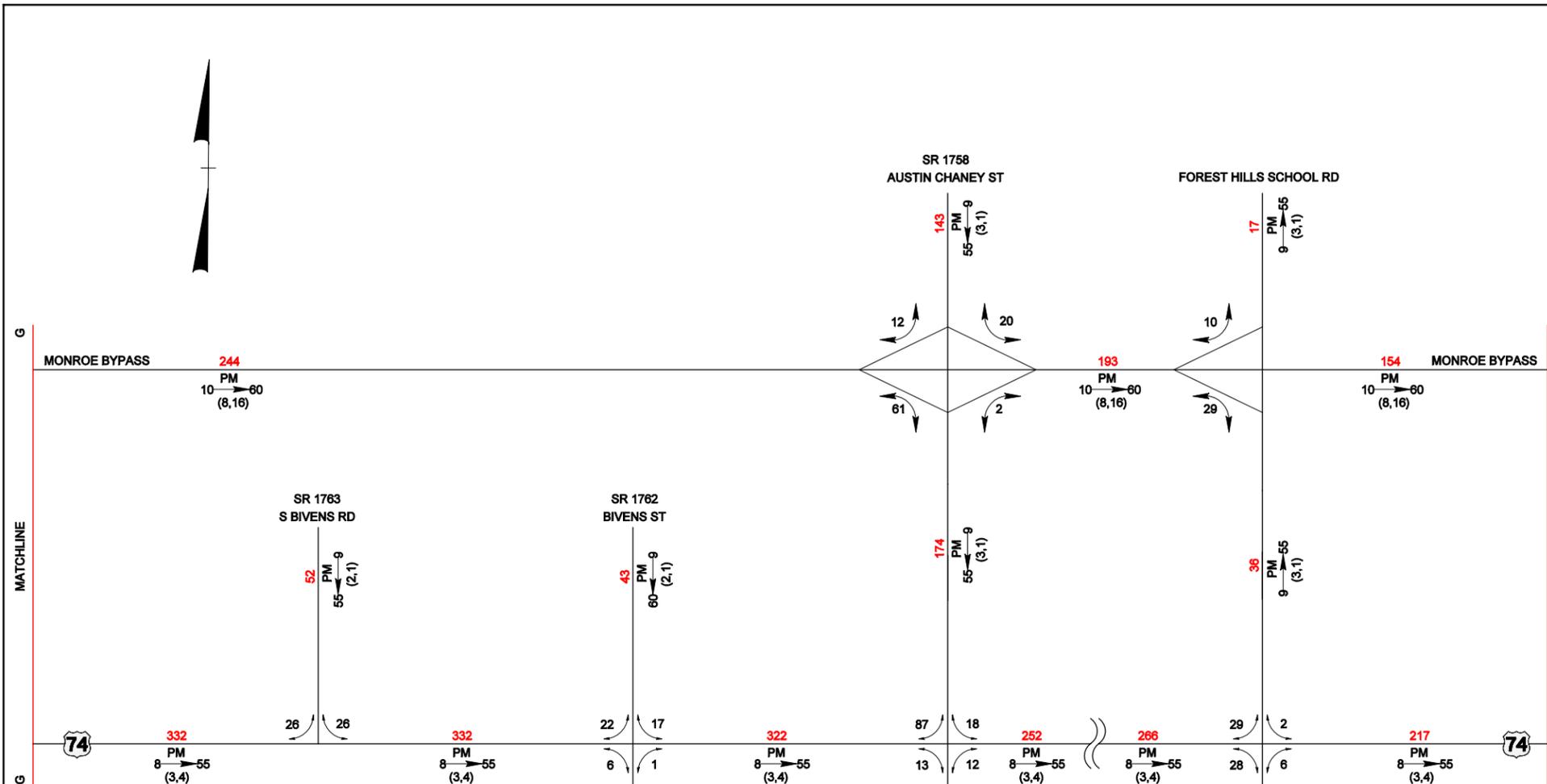
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **7**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t)
- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **1A** LOCATION: US 74 in Mecklenburg and Union Counties

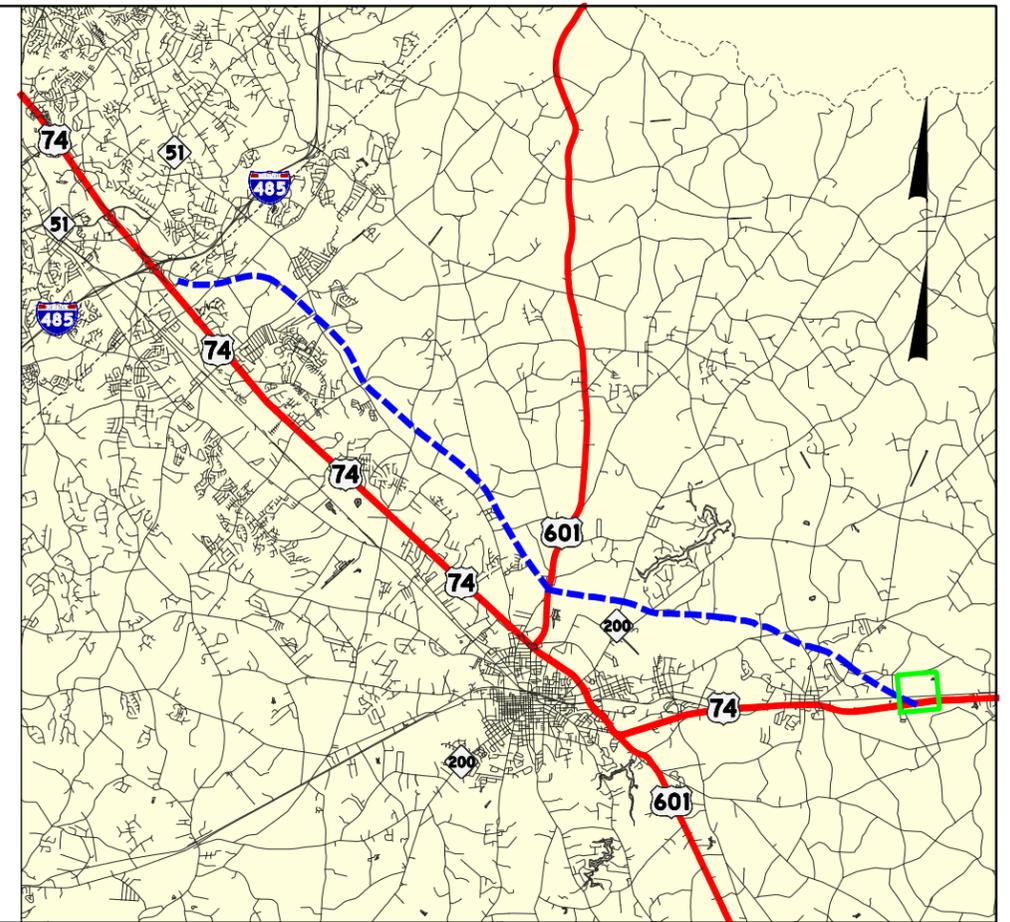
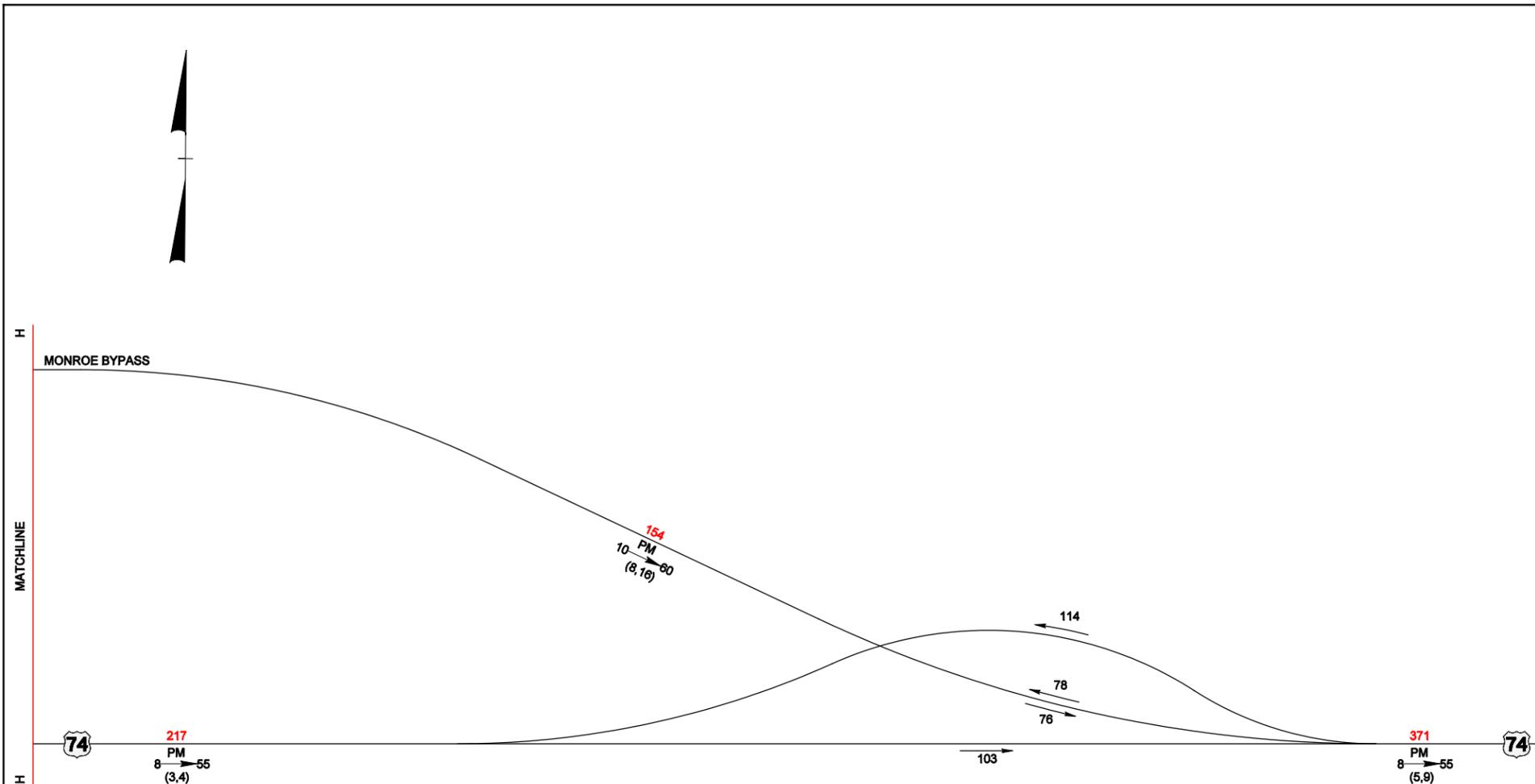
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **8**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}} \text{D}$   
(d, t)
- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **1A** LOCATION: US 74 in Mecklenburg and Union Counties

PROJECT: Monroe Connector/Bypass SHEET NUMBER: **9**

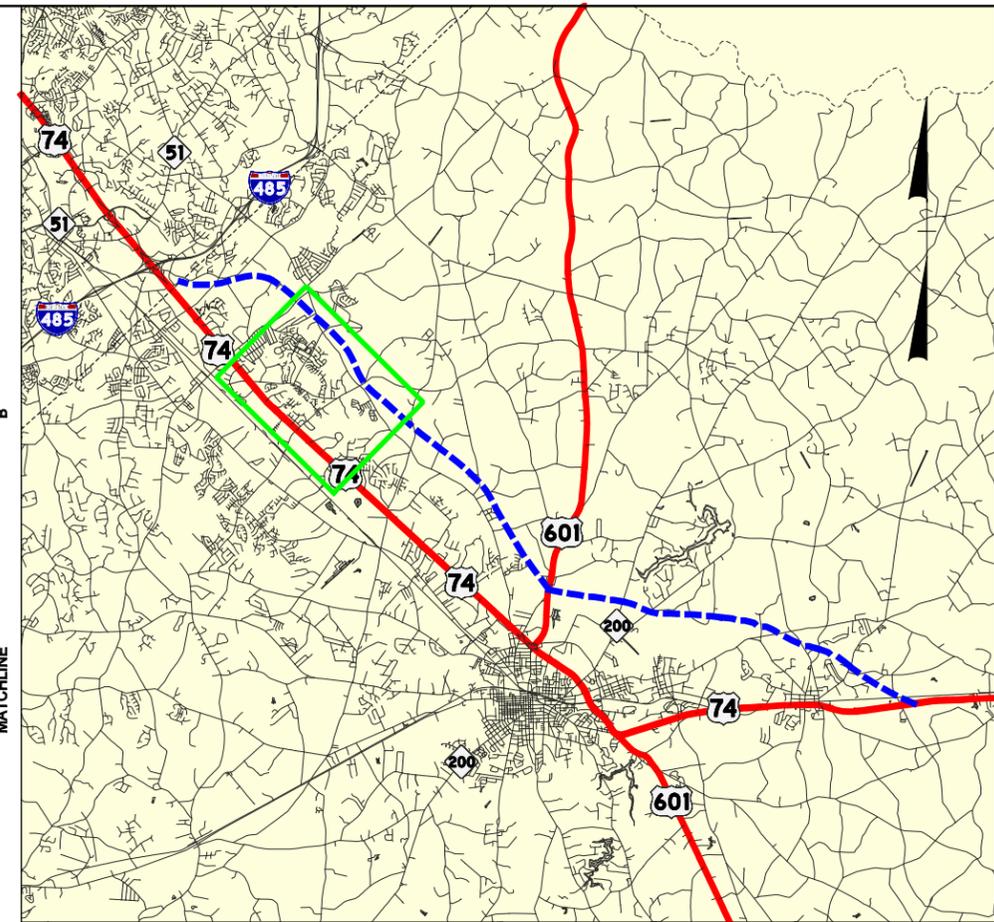
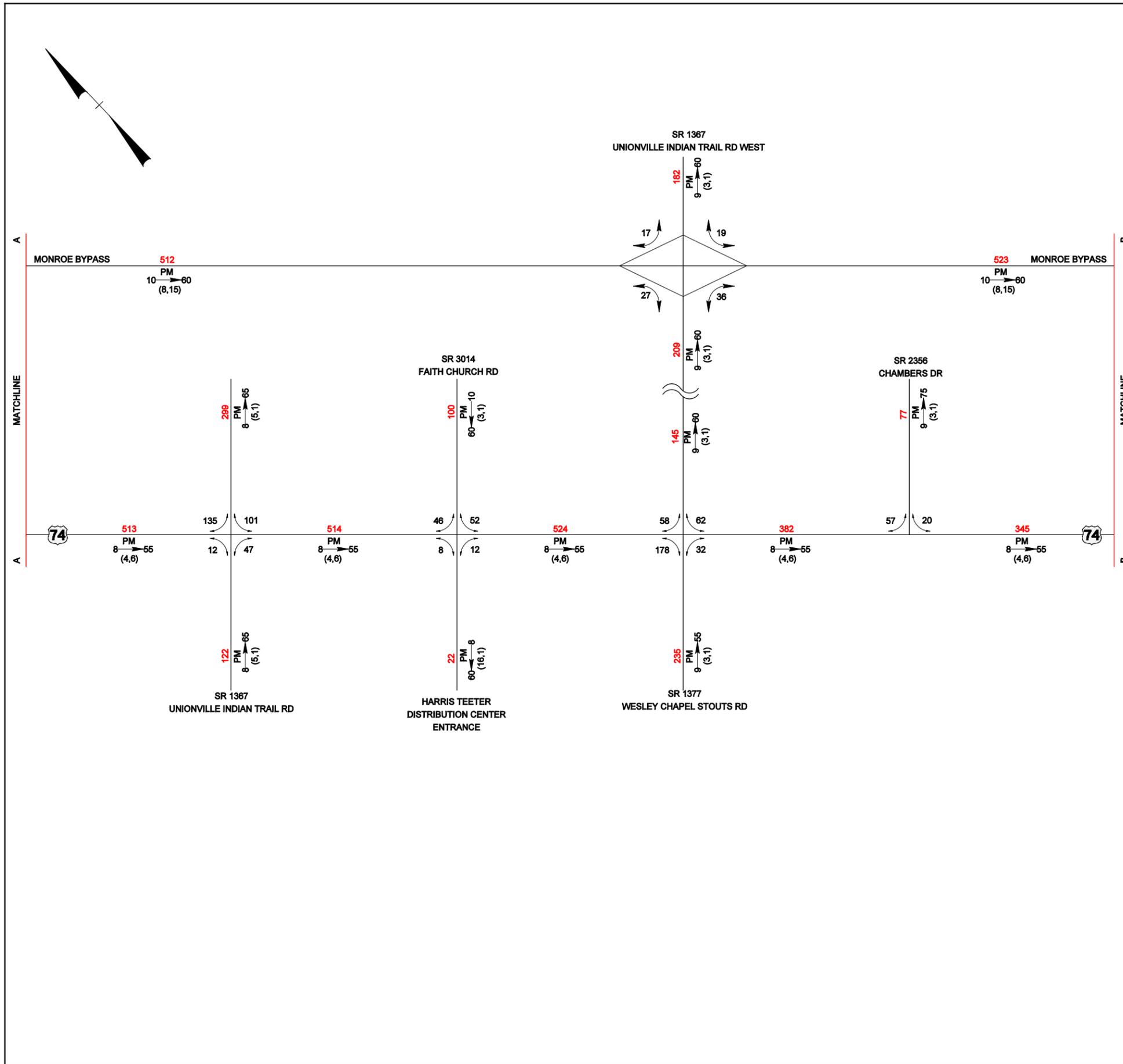
DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t)
- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)







# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **3A** LOCATION: US 74 in Mecklenburg and Union Counties

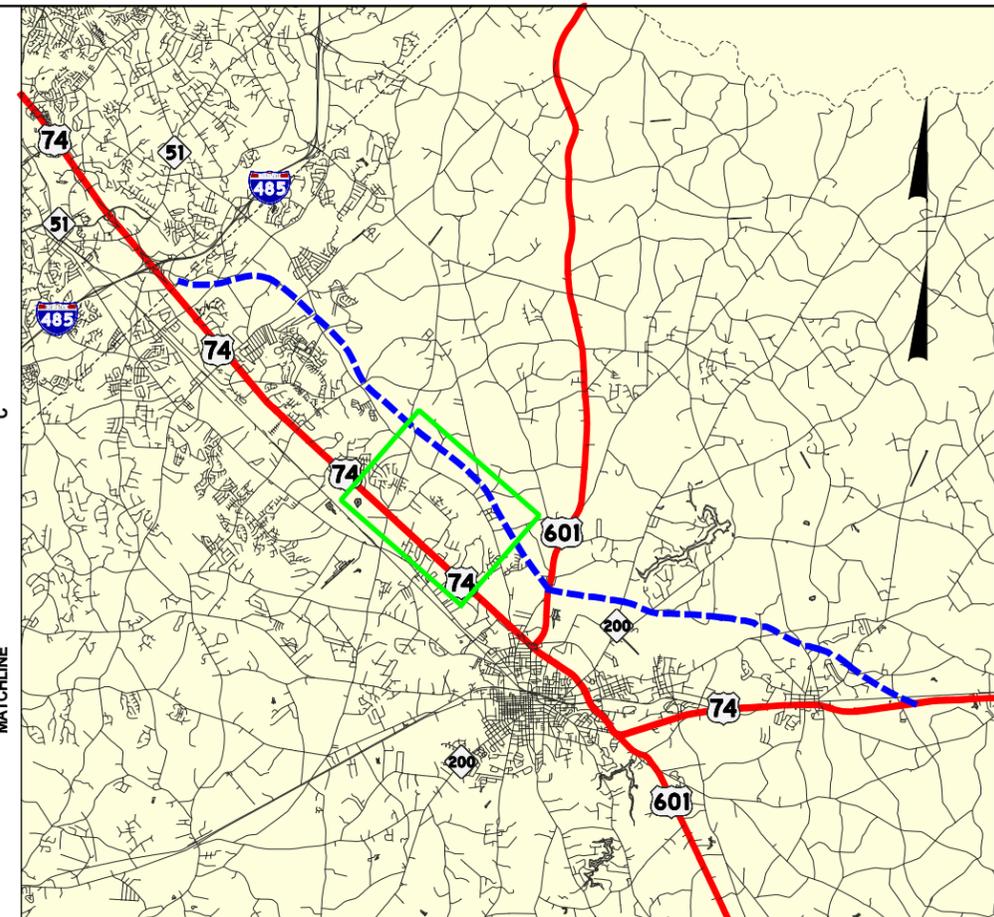
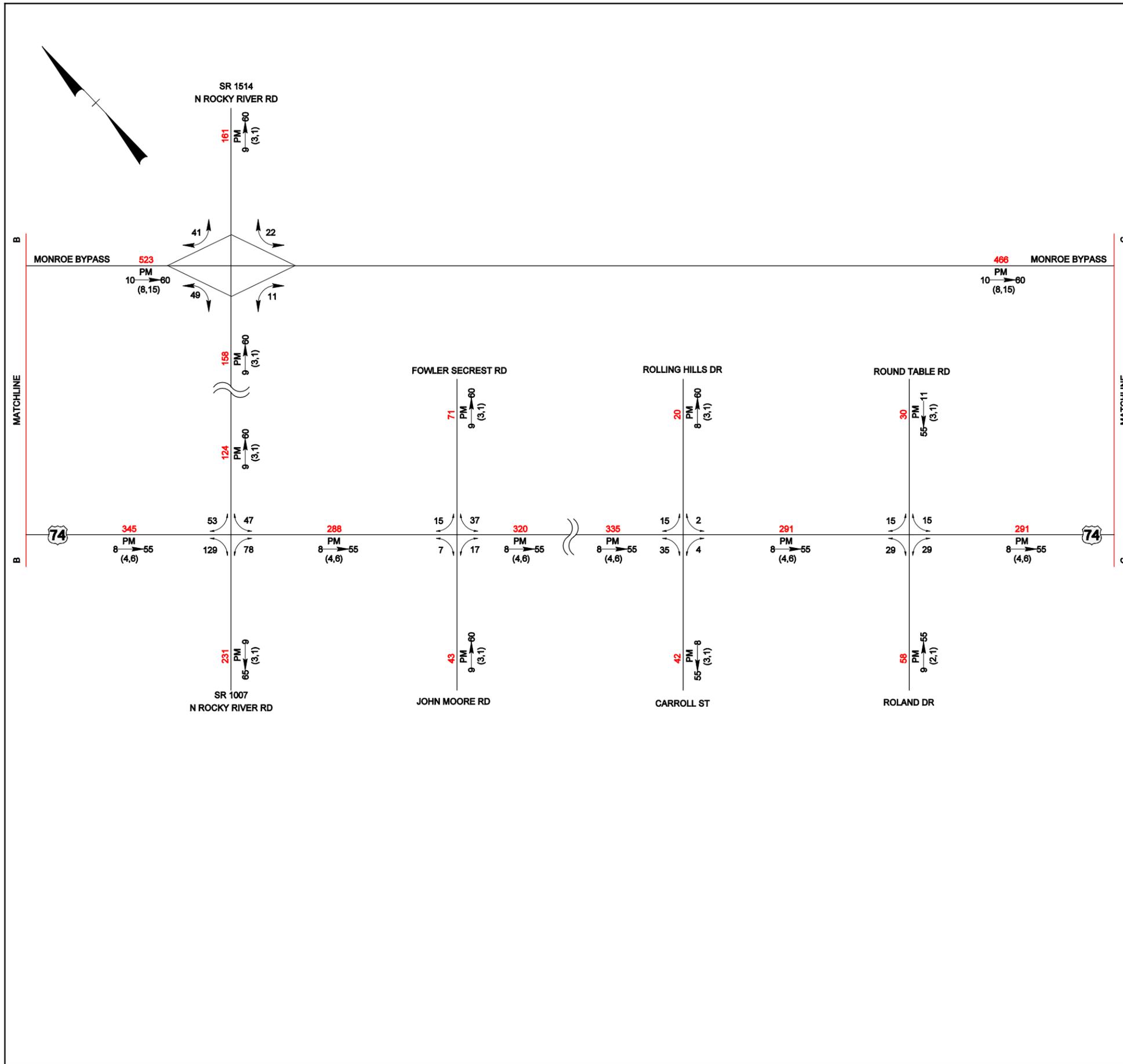
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **2**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{PM}$  D (d, t) Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
 WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **3A** LOCATION: US 74 in Mecklenburg and Union Counties

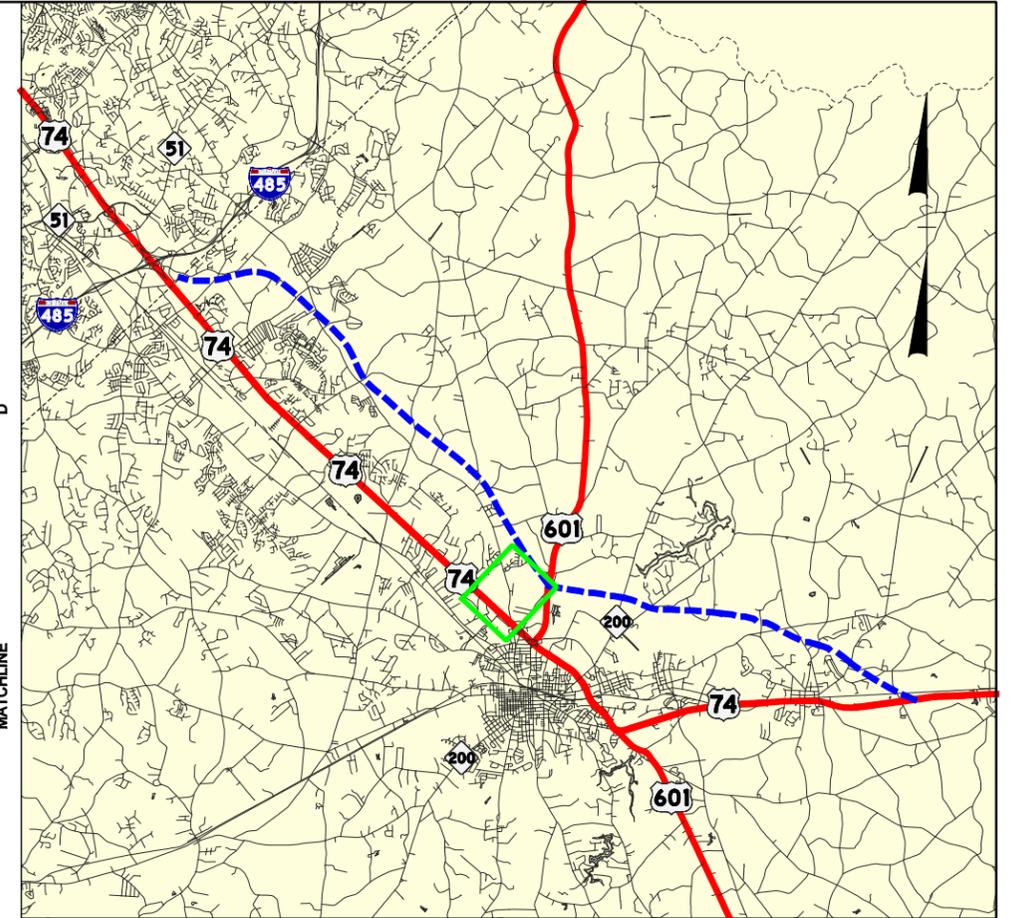
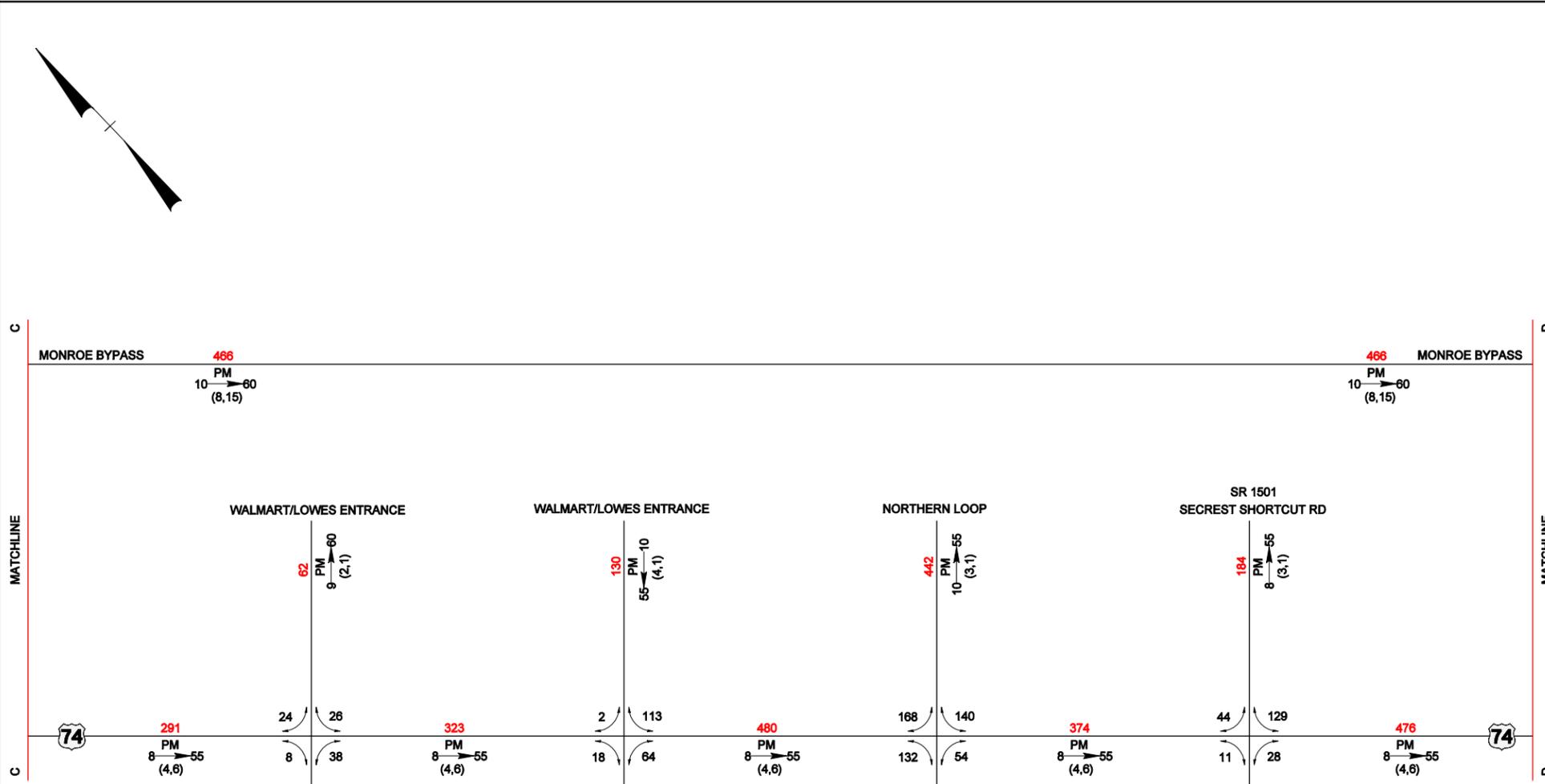
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **3**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t)
- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **3A** LOCATION: US 74 in Mecklenburg and Union Counties

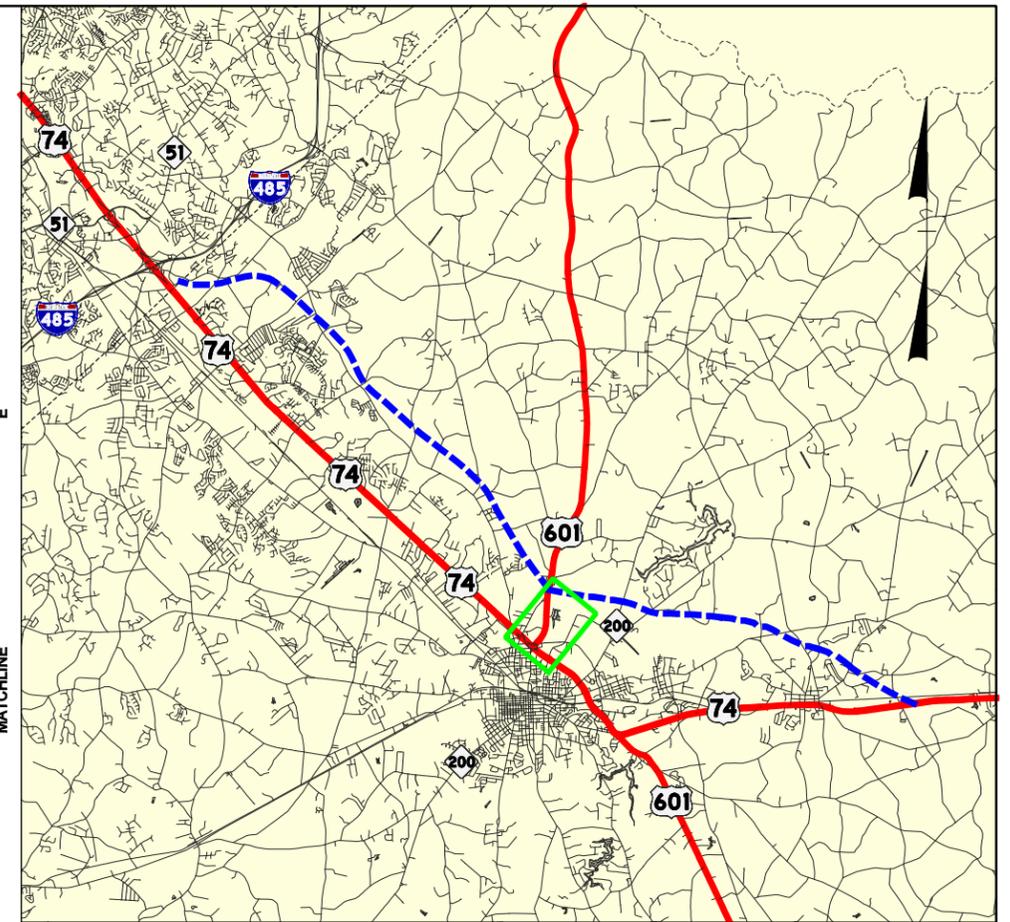
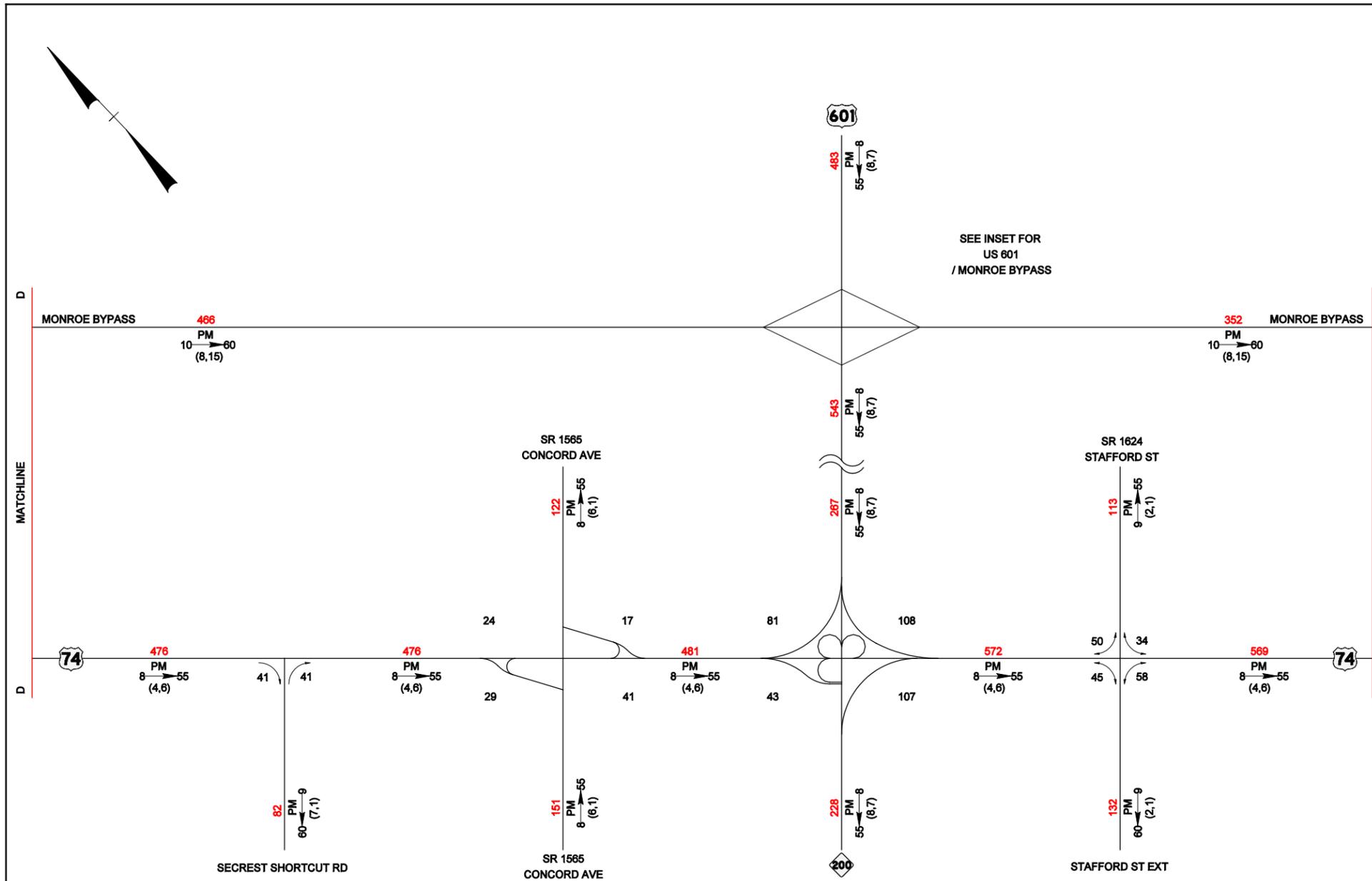
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **4**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **3A** LOCATION: US 74 in Mecklenburg and Union Counties

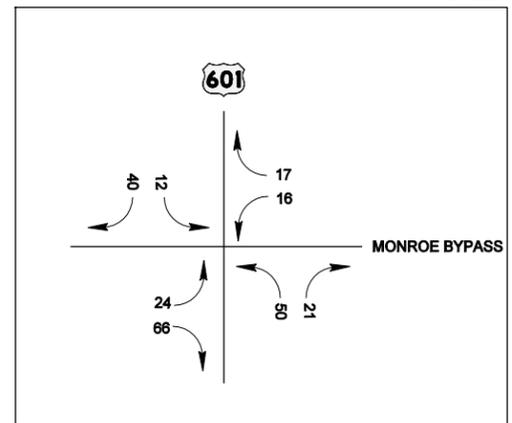
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **5**

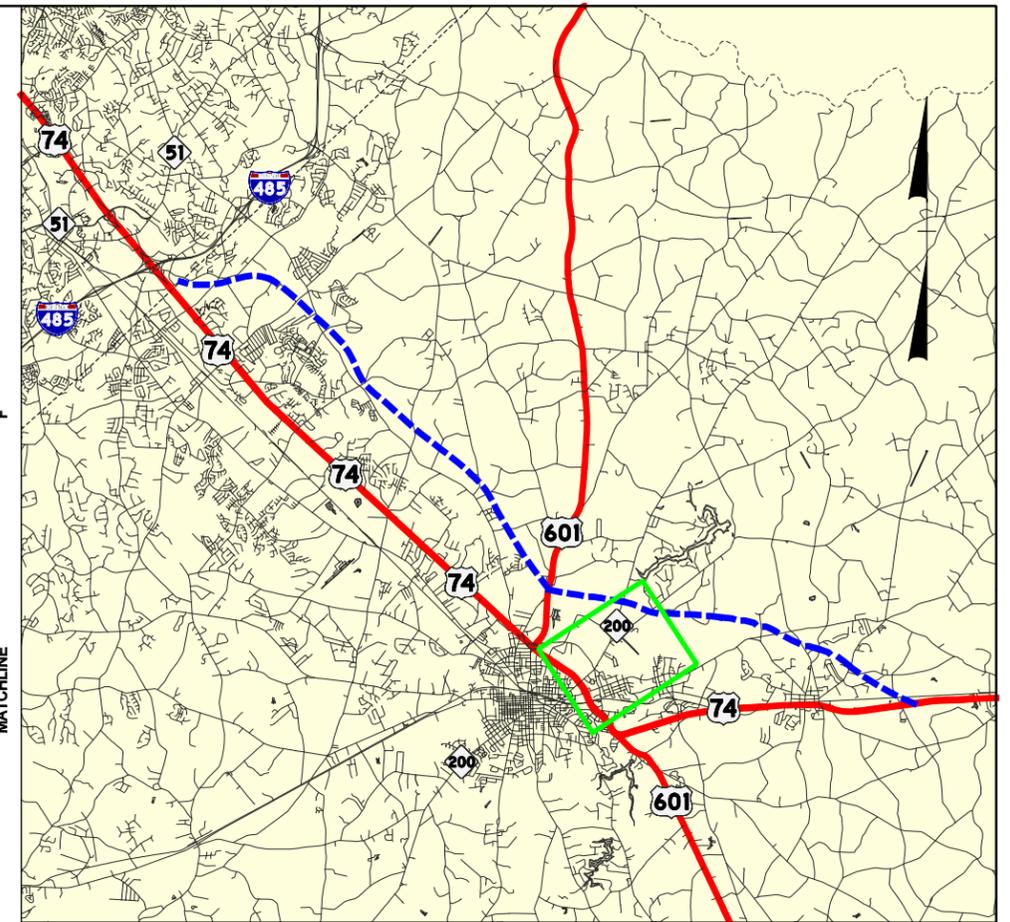
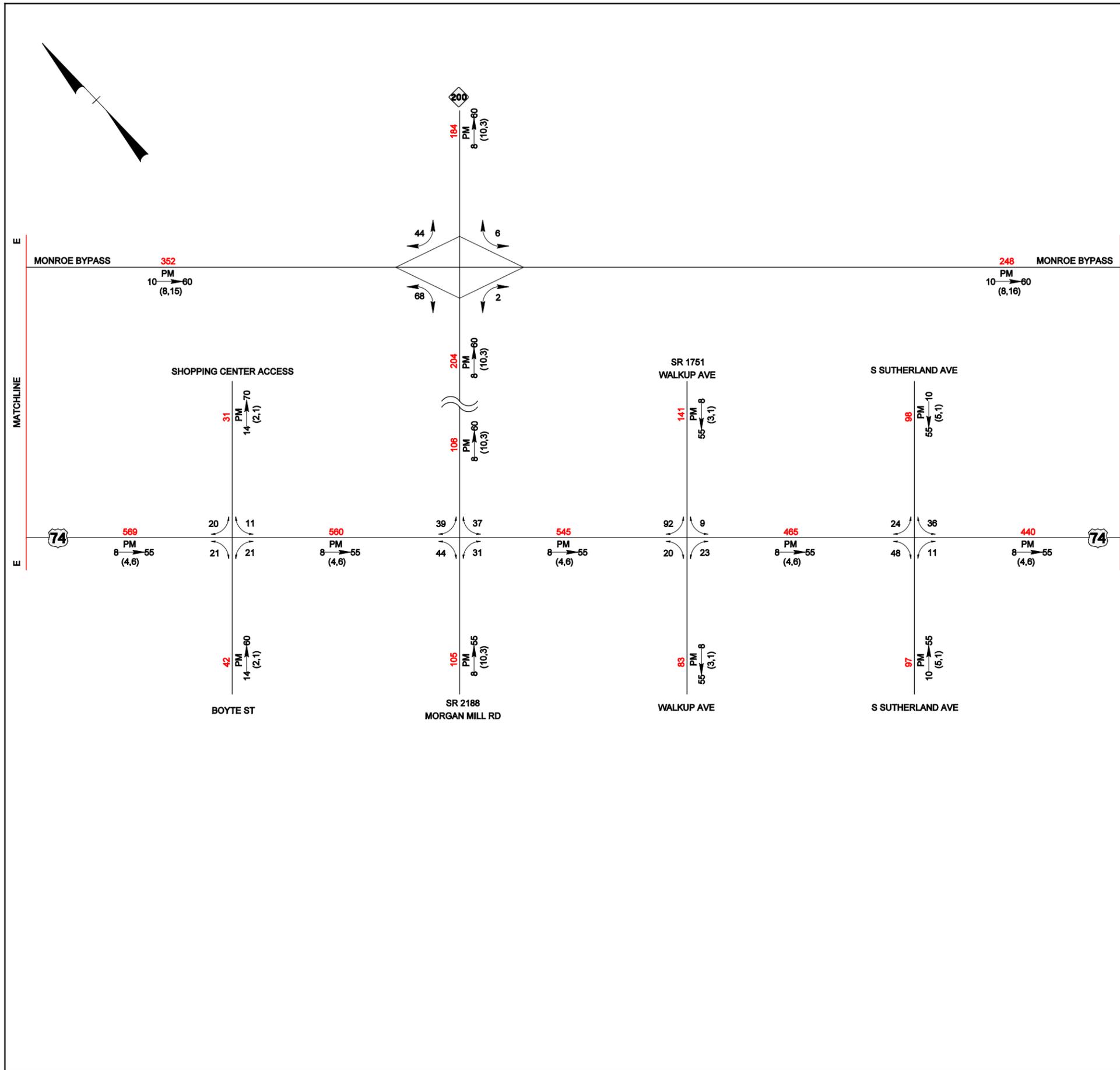
DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)

INSET





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **3A** LOCATION: US 74 in Mecklenburg and Union Counties

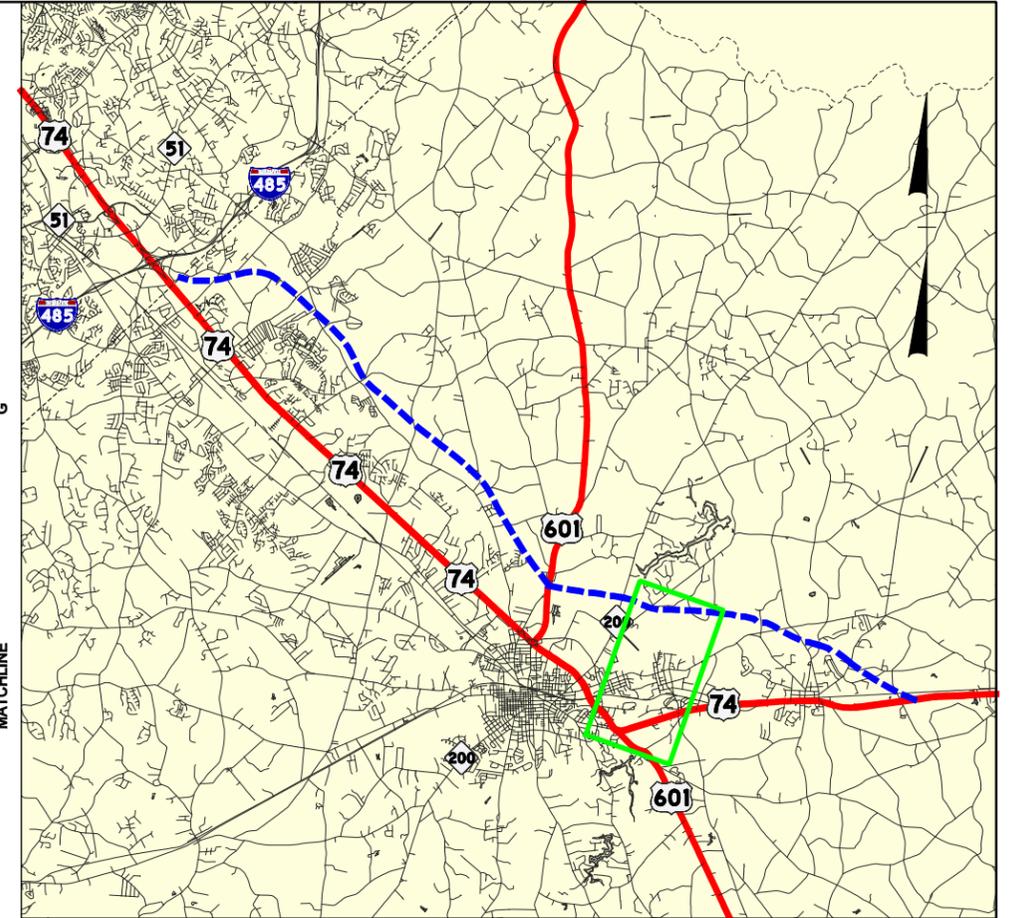
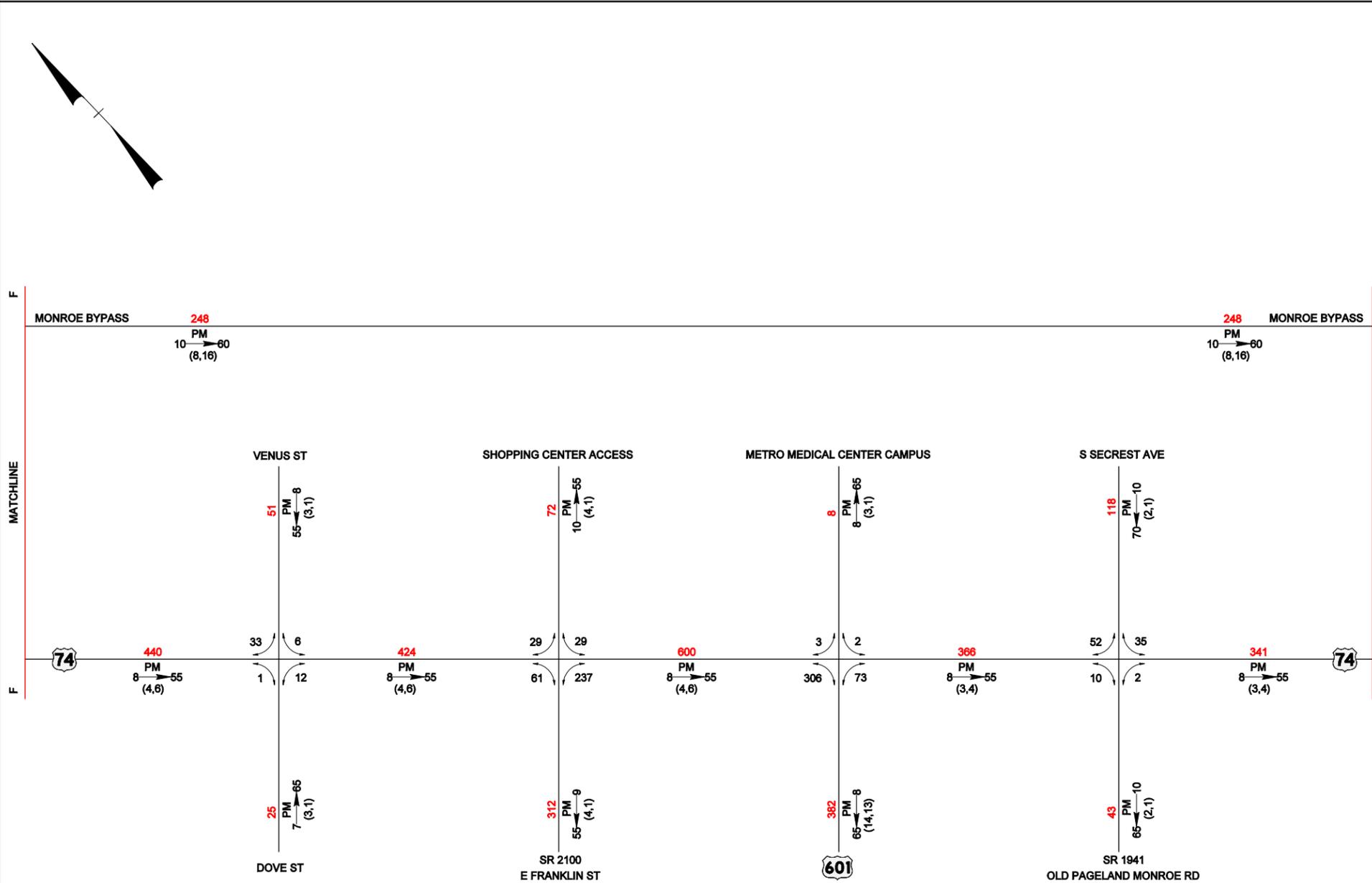
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **6**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **3A** LOCATION: US 74 in Mecklenburg and Union Counties

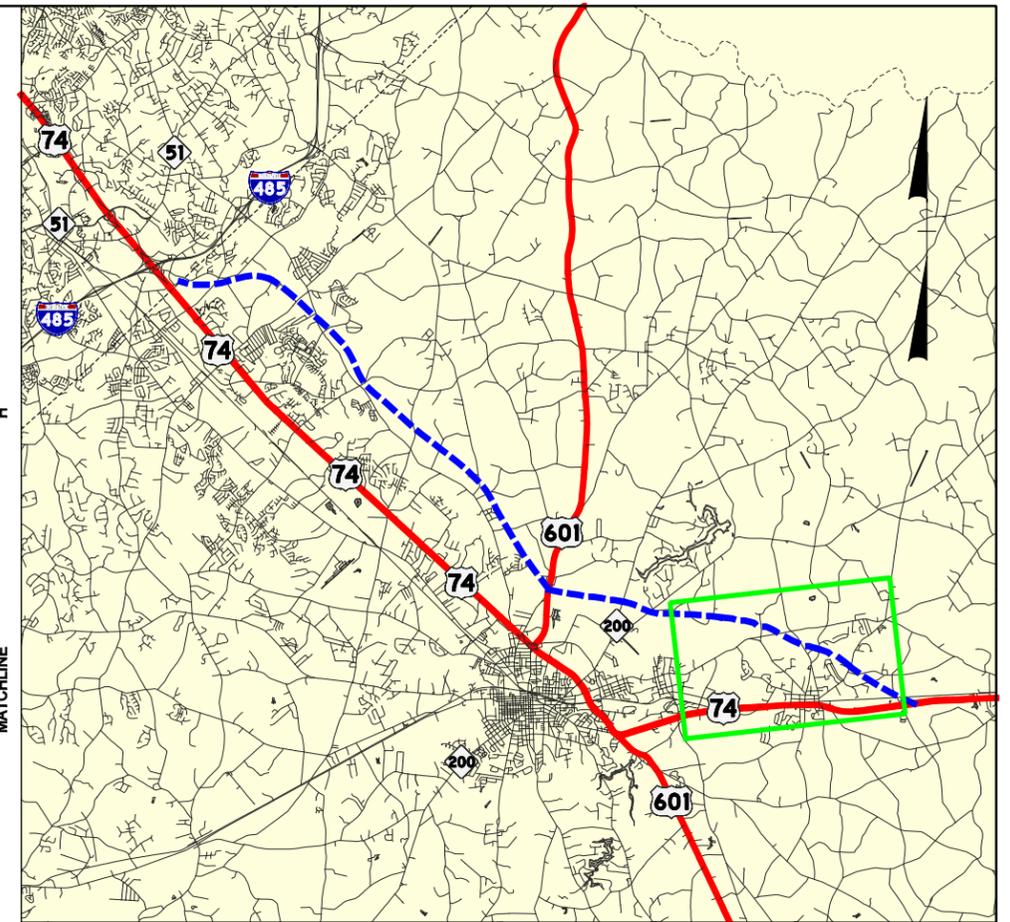
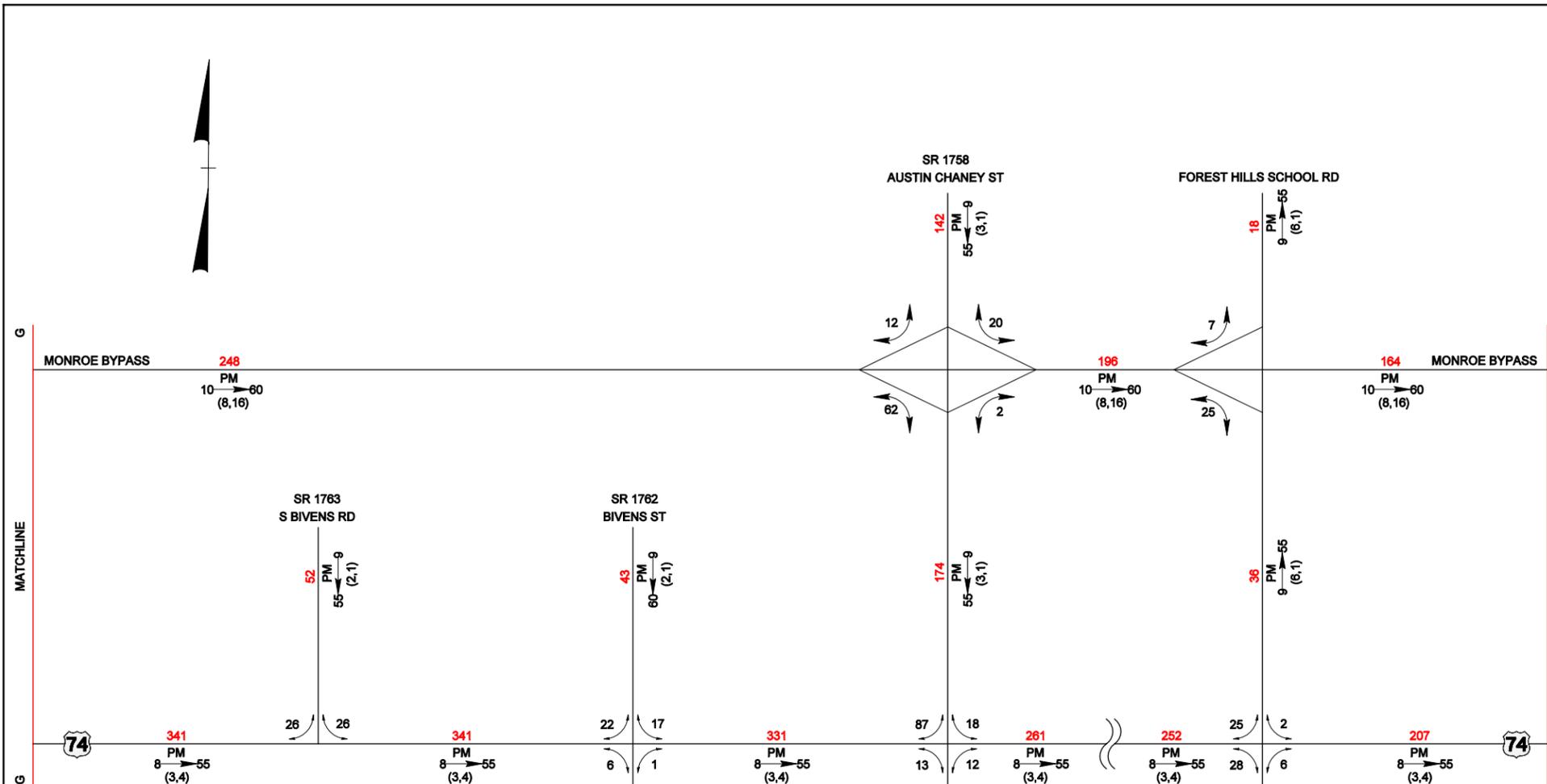
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **7**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t)
- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **3A** LOCATION: US 74 in Mecklenburg and Union Counties

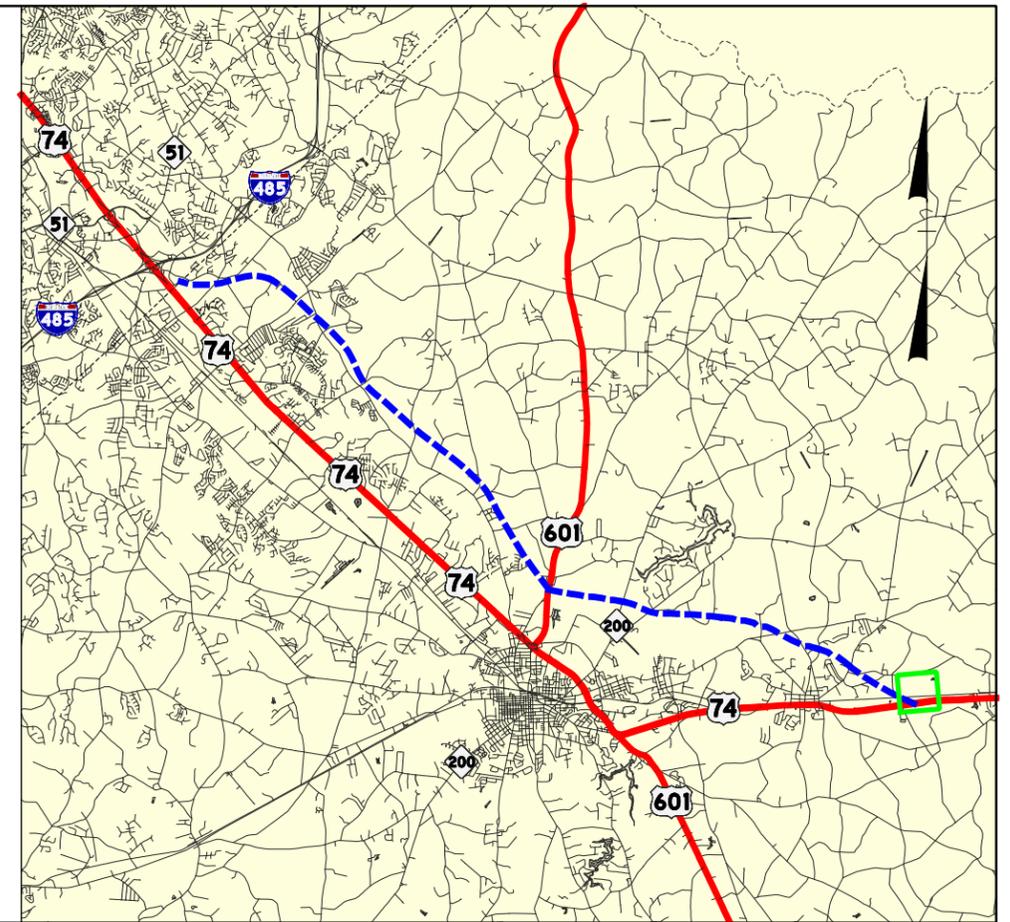
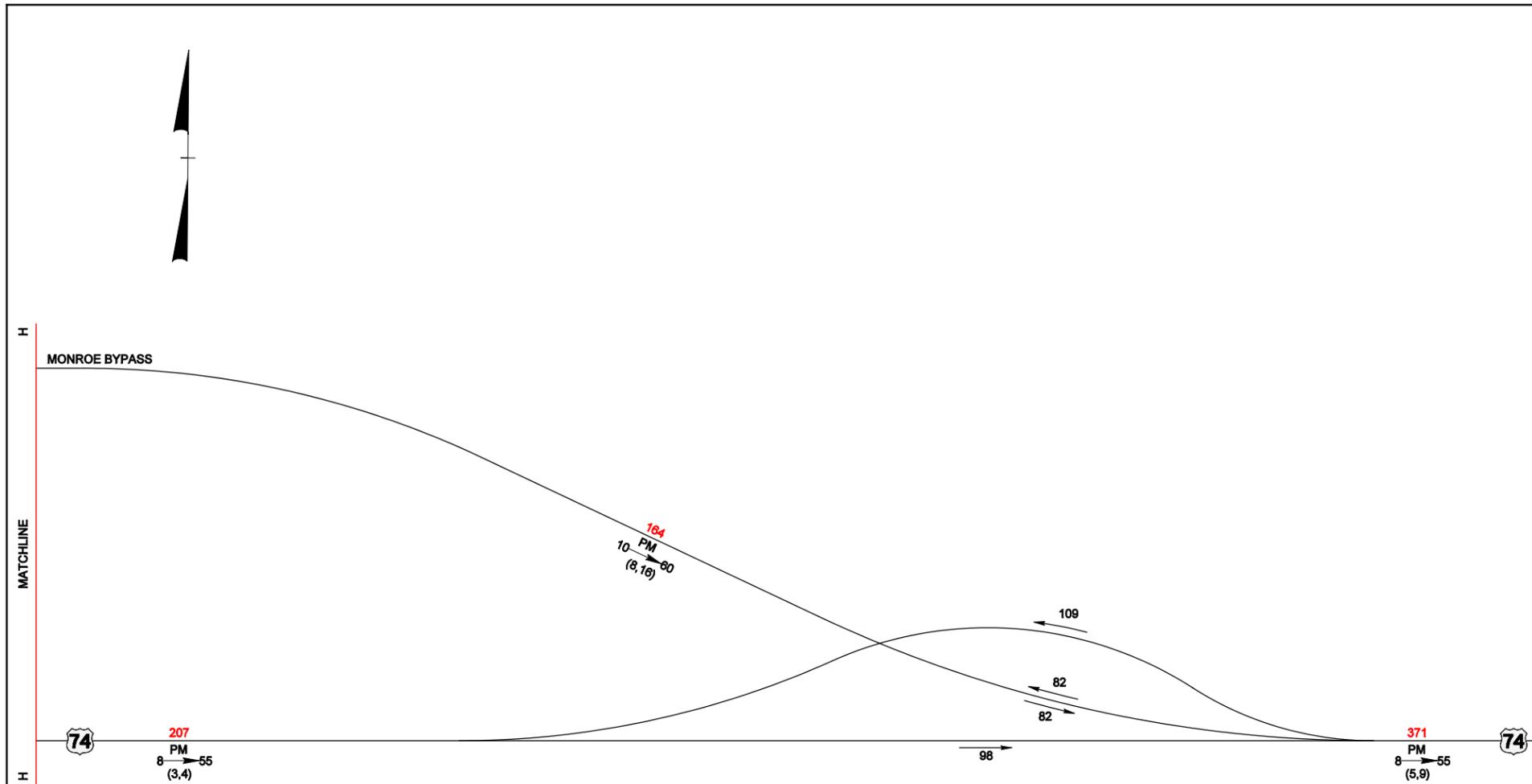
PROJECT: Monroe Connector/Bypass SHEET NUMBER: **8**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t)
- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)





# 2035 BUILD "TOLL" SCENARIO

AVERAGE ANNUAL DAILY TRAFFIC  
WITH TRUCK, DHV AND DIRECTIONAL FACTORS

TIP: R-3329/R-2559 ALTERNATE: **3A** LOCATION: US 74 in Mecklenburg and Union Counties

PROJECT: Monroe Connector/Bypass SHEET NUMBER: **9**

DIVISION: 10 DATE: May 2008 PREPARED BY: Wilbur Smith Associates

## LEGEND

- DHV  $\xrightarrow{\text{PM}}$  D (d, t)
- DHV Design Hourly Volume (%) =  $K_{30}$
- PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TTST (%)
- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- ### Turning volume (VPD)



## **APPENDIX E**

### **Correspondence regarding Eight-Hour Ozone Attainment Demonstration**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

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

**NOV 17 2008**

Mr. William G. Ross, Jr., Secretary  
North Carolina Department of  
Environment and Natural Resources  
1601 Mail Service Center  
Raleigh, North Carolina 27699-1601

Dear Secretary Ross:

I am writing to you concerning your State Implementation Plan (SIP) for demonstrating attainment of the 8-hour national ambient air quality standard for ozone in the bi-state Charlotte nonattainment area. The bi-state Charlotte nonattainment area is comprised of several counties in North Carolina and a portion of York County in South Carolina. The York County portion also includes tribal land for the Catawba Indian Tribe. The plan for the North Carolina portion of this area was submitted to the U.S. Environmental Protection Agency (EPA) for review on June 15, 2008. Although our staffs have discussed the contents of this plan, we have not taken formal action to approve or disapprove the SIP.

The Clean Air Act and EPA rules for implementation of the 1997 ozone standard require that the attainment demonstration SIP for a moderate area such as the bi-state Charlotte area contain the State's demonstration that the SIP is capable of providing for attainment of the ozone standard by no later than June 15, 2010. This can only be done by projecting (through modeling and other analysis) that the area will achieve ozone levels consistent with the ozone standard by the end of the 2009 ozone season. Such modeling demonstrations are extremely complex and contain some uncertainty in the predictions.

After areas reach the attainment date, achievement of the standard is determined by assessing actual monitoring data from the most recent three years. Because we are now so close to the attainment date, we now believe that attainment will not be achieved by the required moderate area deadline based on air quality measurements from the summers of 2007 and 2008 that exceed the standard by a sizeable amount. Furthermore, we believe that the area will not meet the requirements for a one-year extension of the attainment date. Therefore, if we are required to take rulemaking action on the SIP, we see no alternative to proposing disapproval of the SIP's attainment demonstration. [Please see Attachment A to this letter, which contains the air quality data which lead EPA to its conclusion.]

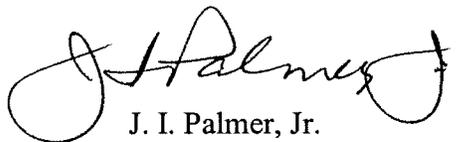
In cases where attainment of the ozone standard cannot be achieved by the required date, the Clean Air Act allows a State to seek a higher classification for the area. Section 181(b)(3) provides for States to request EPA to reclassify a nonattainment area to a higher classification

and requires EPA to grant such a request. Such a reclassification will have the effect of allowing for a new attainment date for the area (based on the new classification), which would be established in the new attainment demonstration. In conjunction with EPA's action on the reclassification request, EPA will establish a date for submission of a new attainment demonstration and any other additional requirements based on the area's new classification. It should be noted, however, that the Clean Air Act requires States to move forward to adopt and implement (to the extent measures are not yet in place) all RACT (Reasonably Available Control Technology) and other control measures needed to attain the 1997 ozone air quality standard as expeditiously as practicable. In particular, measures planned for the 2009 ozone season should not be delayed.

Please consider making a request to reclassify the North Carolina portion of the bi-state Charlotte nonattainment area to a higher classification. I will need a response from you no later than December 8, 2008, if you are going to make such a request. In the absence of a reclassification request for the North Carolina portion of the bi-state Charlotte nonattainment area, I intend to sign a proposed disapproval of your existing attainment demonstration by no later than January 9, 2009. A letter similar to this was sent to South Carolina with this same request.

As always, please feel free to contact me or Beverly Banister in Region 4 at (404) 562-9326, if additional information is needed. I will look forward to hearing from you regarding your decision.

Sincerely,

A handwritten signature in black ink, appearing to read "J. I. Palmer, Jr.", with a large, stylized flourish at the end.

J. I. Palmer, Jr.  
Regional Administrator

Attachment

cc: Bob King, SC DHEC  
B. Keith Overcash, NC DENR  
Myra Reece, SC DHEC  
Don Willard, Mecklenburg County  
Marcus Peacock, U.S. EPA  
Robert Meyers, U.S. EPA  
Beverly Banister, U.S. EPA Region 4

**Attachment A**

Air Quality Data Which Leads U.S. EPA to Conclude that the Charlotte-Gastonia-Rock Hill, NC-SC Ozone Nonattainment Area Will Not Achieve the Ozone NAAQS (0.08 ppm) by the End of the 2009 Ozone Season

Monitoring Site ID	POC	County	State	Preliminary 2006-2008 Design Value as of November 12, 2008 (ppm)	Did this site meet NAAQS as of November 12, 2008?	Number of Days in 2008 Above the 1997 Standard	2006 4th Maximum Value (ppm)	2007 4th Maximum Value (ppm)	2008 4th Maximum Value as of November 12, 2008 (ppm)	Critical Value in 2009 as of November 12, 2008 (ppm)
371090004	1	Lincoln	North Carolina	0.082	Yes	3	0.082	0.085	0.079	0.091
371190041	1	Mecklenburg	North Carolina	0.089	No	4	0.091	0.093	0.085	0.077
371191005	1	Mecklenburg	North Carolina	0.079	Yes	1	0.078	0.087	0.073	0.095
371191009	1	Mecklenburg	North Carolina	0.094	No	5	0.093	0.096	0.093	0.066
371590021	1	Rowan	North Carolina	0.088	No	3	0.085	0.096	0.084	0.075
371590022	1	Rowan	North Carolina	0.088	No	2	0.089	0.095	0.082	0.078
371790003	1	Union	North Carolina	0.080	Yes	1	0.080	0.082	0.080	0.093

Number of sites exceeding the ozone NAAQS in 2006-2008

4

**Source of Data**

The 2006 and 2007 monitoring results are based on data already submitted and certified by the respective monitoring agencies to U.S. EPA's Air Quality System data base. The 2008 monitoring result is based on data submitted to the AirNow data system, and is considered preliminary.

**The Meaning of "Critical Value"**

The critical value shown for 2009 is the magnitude of the 4th highest value in 2009 (given the 2007 and 2008 data) that would result in a conclusion that the monitor shows compliance with the ozone NAAQS for 2007-2009. For the nonattainment area to be found to attain, all monitors' 4th highest readings in 2009 must be below their respective critical values.

**Condition for a One-Year Extension**

To be eligible for a one-year extension of the attainment date, the 4th highest value at all monitors in the area during 2009 must be less than 0.085 ppm. EPA judges this to be highly unlikely given the concentrations observed at some monitors in 2007 and 2008.



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross, Jr., Secretary

December 19, 2008

J. I. Palmer, Jr.  
Regional Administrator  
USEPA Region 4  
Atlanta Federal Center  
61 Forsyth Street, SW  
Atlanta, GA 30303-8960

Re: Attainment Demonstration for the North Carolina Portion of the Charlotte-Gastonia-Rock Hill Eight-Hour Ozone Nonattainment Area

Dear Mr. Palmer:

I am in receipt of your letter dated November 17, 2008, which addressed the North Carolina State Implementation Plan (SIP) for demonstrating attainment of the 1997 8-hour national ambient air quality standard for ozone in the bi-state Charlotte-Gastonia-Rock Hill (Metrolina) nonattainment area. The letter stated that the Environmental Protection Agency (EPA) could not approve this SIP since the area is unlikely to attain the 1997 ozone standard by June 15, 2010 or meet the requirements for a one-year extension of the attainment date. The EPA offered North Carolina the option of requesting a reclassification from Moderate to Serious to avoid disapproval of the Metrolina SIP. I have thoroughly considered both options, the proposed disapproval of the SIP and the voluntary reclassification to Serious. Both options present rather negative implications for the State. Therefore, to address EPA's concern over the Metrolina SIP attainment demonstration, North Carolina requests that EPA return the attainment demonstration originally submitted on June 15, 2007, so that the State may improve the demonstration and submit an updated plan.

It is my understanding that the withdrawal of the attainment demonstration for the Metrolina area will result in North Carolina receiving a letter of finding of failure to submit a plan under Section 179 of the Clean Air Act, and that an eighteen month sanction clock will begin, along with a twenty-four month Federal Implementation Plan clock. It is North Carolina's intention to submit a revised attainment demonstration for the Metrolina region by November 2009, which would stop both the sanction and the FIP clocks. I request that EPA work with North Carolina to quickly review and deem adequate the motor vehicle emissions budgets that will be submitted as part of the revised demonstration in November 2009. These budgets are needed so that transportation conformity analyses can be conducted and approved by May of 2010. EPA's cooperation is essential in order for this schedule to be successful.

In arriving at this decision, North Carolina considered the option of reclassification. While EPA believes it is unlikely that the Metrolina area will attain the 1997 ozone standard by its attainment

date, the region may meet the requirements for requesting a one-year extension of the attainment date. The region will achieve additional nitrogen oxide (NOx) reductions as a result of new controls on utilities and in motor vehicle fleet turnover. North Carolina is in the process of adopting an idle reduction rule for heavy-duty vehicles. This new rule is expected to become effective on May 1, 2009, and will result in additional NOx emission reductions. It should be noted that in 2004 the region had a 4<sup>th</sup> highest value of 0.085 parts per million (ppm) and there have been significant reductions in NOx emissions since that time. Given that the region may qualify for a one-year extension of its attainment date, it is believed that disapproval of the SIP would be premature.

Further, many of the additional control requirements within the Clean Air Act (CAA) of a reclassification to Serious focus on reducing volatile organic compounds (VOCs). While any reduction in air pollution may be considered a positive step, much scientific knowledge has been gained since the 1990 CAA Amendments were promulgated relative to beneficial reductions in the precursor pollutants that contribute to the formation of ozone. The Metrolina region is NOx limited, so reductions in VOC emissions will not result in the reduction of ozone needed to meet the standard. In these hard economic times, it is unreasonable to require business and industry to go through this resource intensive and burdensome process and implement costly controls when the needed results will not be achieved.

North Carolina has demonstrated leadership by implementing legislation, regulation and voluntary measures to address air pollution. We are committed to develop a SIP that will address the air quality issues for the Metrolina region through partnership with the South Carolina Department of Health and Environmental Control and the Mecklenburg County Air Quality programs. We will review the current controls that will be going in place and determine if there are other controls that could be implemented quickly so that the area can meet the requirements necessary to request a one-year extension and, if necessary, a second one-year extension in 2010. Our projected timeline for developing and submitting a revised attainment demonstration is:

January 2, 2009 – DAQ staff begins updating the area, nonroad mobile and point source inventory so that it reflects a more refined inventory and addresses the CAIR vacatur for other States;

February 27, 2009 – DAQ receives Metrolina transportation partners' data for future year modeling runs;

March 2, 2009 – DAQ begins emissions and air quality modeling runs;

July 1, 2009 – Modeling and quality assurance reviews are completed;

August 1, 2009 – Draft pre-hearing documentation is made available for review by EPA and transportation partners;

September 1, 2009 – Comments on the draft plan are received and addressed by DAQ;

September 21, 2009 – Pre-hearing draft SIP is made available to public;

Jimmy Palmer, Jr.  
December 19, 2008  
Page 3

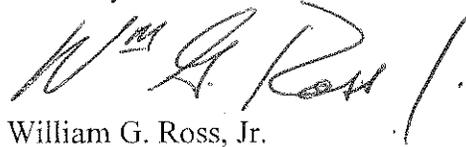
November 1, 2009 – The public comment period ends;

November 30, 2009 –DAQ submits the revised plan to EPA.

If at some point during 2009 ozone season the monitoring data shows that the Metrolina area is not eligible for a one year extension of the attainment date, North Carolina will consider submitting a request to reclassify to Serious instead of waiting for the mandatory reclassification from EPA.

Please feel free to contact Keith Overcash at (919) 715-6290 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Wm G. Ross, Jr.", written in a cursive style.

William G. Ross, Jr.

cc: B. Keith Overcash, NCDENR  
Myra C. Reece, SCDHEC  
Don Willard, Mecklenburg County  
Marcus Peacock, USEPA  
Robert Meyers, USEPA  
Beverly Banister, USEPA Region 4



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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

JAN - 9 2009

Mr. William G. Ross, Jr., Secretary  
North Carolina Department of  
Environment and Natural Resources  
1601 Mail Service Center  
Raleigh, North Carolina 27699-1601

Dear Secretary Ross:

I am writing to you concerning North Carolina's efforts to comply with Clean Air Act (the Act) requirements for the 1997 8-hour national ambient air quality standard (NAAQS) for ozone. Within three years after the effective date of the U.S. Environmental Protection Agency's (EPA) designations, the Act requires a state with areas designated nonattainment for the ozone NAAQS to submit a State Implementation Plan (SIP) describing how that state will attain and maintain the ozone standard. EPA made designations for the 1997 8-hour ozone standard, effective June 15, 2004; therefore, submissions were due June 15, 2007, for most areas. On June 15, 2007, the North Carolina Department of Environment and Natural Resources (DENR) submitted a plan to show how the Charlotte-Gastonia-Rock Hill (Charlotte) nonattainment area would attain the 1997 8-hour ozone standard by the statutory attainment date of June 15, 2010, and how the North Carolina portion of the bi-state Charlotte nonattainment area would achieve its portion of emission reductions necessary for the area to attain by that date. EPA has since reviewed North Carolina's submission to determine approvability.

On November 17, 2008, we sent you a letter noting that our analysis indicates that North Carolina's attainment demonstration submission is not approvable based on current air quality in the area. In that letter, we requested that DENR consider a voluntary reclassification to serious. We also noted that if a voluntary reclassification request was not made by December 8, 2008, EPA would propose disapproval of North Carolina's attainment demonstration for its portion of the Charlotte area by January 9, 2009. We sent a similar letter to the South Carolina Department of Health and Environmental Control regarding its attainment demonstration for the Charlotte area. On December 19, 2008, we received DENR's letter with a request to withdraw North Carolina's June 15, 2007, attainment demonstration for its portion of the Charlotte area. As such, EPA no longer has the required attainment demonstration submission from North Carolina for the bi-state Charlotte area for the 1997 8-hour ozone standard.

We consider the required SIP elements to be a high priority; therefore, we are notifying you that, pursuant to section 179(a) of the Act, EPA is making a finding of failure to submit the 1997 8-hour ozone attainment demonstration for North Carolina's portion of the bi-state Charlotte area. EPA will soon publish a rule in the Federal Register announcing this finding, which will be effective upon publication. In March 2008, we made similar findings of failure to submit for states that had not yet submitted attainment demonstrations and/or other required elements for the 1997 8-hour ozone standard (see enclosure). In general, findings are made in those cases where a state failed to submit some or all elements of a required SIP, or in this case where the State has withdrawn a required submission. Please be assured that we will continue to work closely with your staff to undertake all necessary efforts to ensure that a revised submittal is made as soon as possible so that we can avoid the implementation of sanctions and the need to promulgate a federal implementation plan (FIP). EPA anticipates ongoing consideration regarding whether any further actions are necessary to ensure that all states continue to make progress towards attainment of the ozone standards as expeditiously as practicable, consistent with the requirements of the Clean Air Act."

If within 18 months of EPA's finding, EPA has not affirmatively determined that North Carolina has submitted a completed attainment demonstration for the Charlotte area, pursuant to section 179(a) of the Act and 40 Code of Federal Regulations (CFR) section 52.31, the new source offset sanction identified in section 179(b) of the Act will apply in the affected area. If North Carolina still has not made a submission that EPA has determined complete six months after the new source offset sanction is imposed, the highway sanctions will apply in the affected areas in accordance with 40 CFR 52.31. In addition, section 110(c) of the Act requires EPA to promulgate a FIP no later than two years after a finding under section 179(a), if EPA has not approved the plan for which the finding was made.

The 18-month clock will stop and the sanctions will not take effect if, within 18 months after the date of the findings, EPA finds that North Carolina has made a complete submittal. In addition, EPA would no longer be obligated to promulgate a FIP, if the State makes the required SIP submittal and EPA takes final action to approve the submittal within two years of the findings.

As you are aware, there are transportation conformity issues associated with certain aspects of these findings of failure to submit pursuant to EPA's transportation conformity rule (40 CFR 93.120 (b)). The conformity status of the transportation plans and transportation improvement programs in the affected area would lapse on the date that highway sanctions under section 179 of the Act take effect, unless the State makes the required SIP submittal and EPA acknowledges this via a letter. During a conformity lapse, only projects that are exempt from transportation conformity (*e.g.*, road resurfacing, safety projects, reconstruction of bridges without adding travel lanes, bicycle and pedestrian facilities, etc.), transportation control measures that are in the approved SIP, and project phases that were approved prior to the start of the lapse can proceed during the lapse. No new project-level approvals or conformity determinations can be made and no new transportation plan or transportation improvement program may be found to conform until another attainment demonstration SIP is submitted and the motor vehicle emissions budget is found adequate.

EPA appreciates North Carolina's efforts towards compliance with the 1997 8-hour ozone standard. If you have any questions or would like to discuss this matter further, please contact me or have a member of your staff contact Beverly Banister at 404-562-9326. We look forward to working closely with you and your staff to ensure that the Act's requirements are met in a timely manner without adverse consequences.

Sincerely,

A handwritten signature in black ink, appearing to read "J. I. Palmer, Jr.", with a large, stylized initial "J" and "P".

J. I. Palmer, Jr.  
Regional Administrator

Enclosure

cc: Bob King, SC DHEC  
B. Keith Overcash, NC DENR  
Myra Reece, SC DHEC  
Don Willard, Mecklenburg County  
Marcus Peacock, U.S. EPA  
Bob Meyers, U.S. EPA  
Beverly Banister, U.S. EPA Region 4