



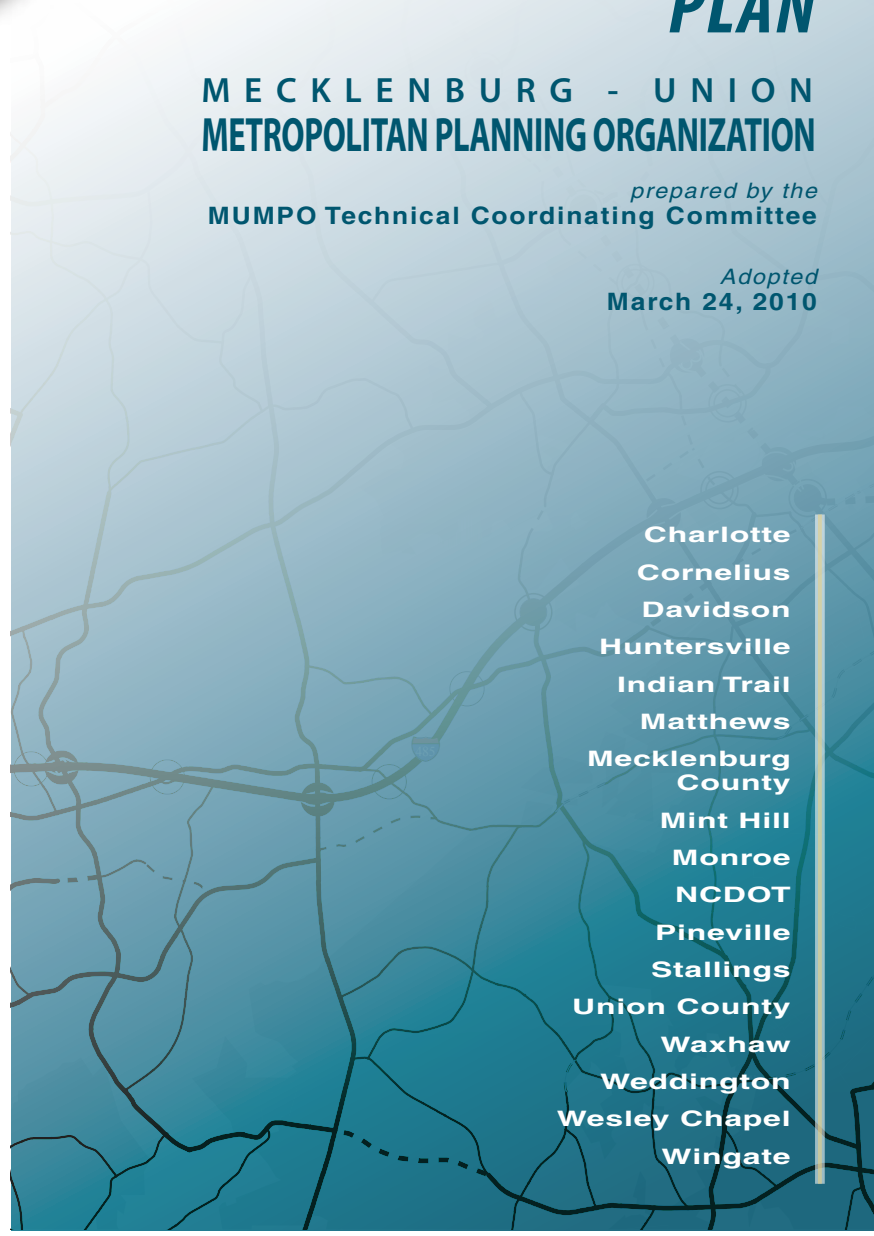
2035

LONG RANGE TRANSPORTATION PLAN

**MECKLENBURG - UNION
METROPOLITAN PLANNING ORGANIZATION**

prepared by the
MUMPO Technical Coordinating Committee

Adopted
March 24, 2010



- Charlotte
- Cornelius
- Davidson
- Huntersville
- Indian Trail
- Matthews
- Mecklenburg
County
- Mint Hill
- Monroe
- NCDOT
- Pineville
- Stallings
- Union County
- Waxhaw
- Weddington
- Wesley Chapel
- Wingate



***Mecklenburg-Union
Metropolitan Planning Organization***

Prepared By
***Mecklenburg-Union
Technical Coordinating Committee***
www.mumpo.org

***Adopted
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Executive Summary

2035 Long-Range Transportation Plan

■ Mecklenburg-Union MPO and the LRTP

The Mecklenburg-Union Metropolitan Planning Organization was created as a result of a 1963 U.S. Department of Transportation mandate for urbanized areas to cooperatively assess and prioritize their transportation needs. MUMPO has since expanded to include all of Mecklenburg County and much of Union County. MUMPO is staffed by the Charlotte-Mecklenburg Planning Department.

MUMPO is required to periodically develop a long range transportation plan (LRTP), with a planning horizon of at least 20 years. This *2035 LRTP* is an update of the *2030 LRTP*, which was adopted in 2005. MUMPO is required to develop an LRTP that prioritizes transportation projects that cumulatively do not exceed identified revenues. Through 2035, MUMPO has identified 64 fiscally-constrained projects, with an estimated future year cost of \$4.8 billion.

- ▶ The list of the 64 projects identified through the year 2035 is on *pages 5-7*.
- ▶ Full detail about the 64 projects is in *Chapter 11-1 (Streets and Highways)*.
- ▶ A complete list of all projects, including unfunded ones, is in *Appendix A*.

■ Global, State and Regional Perspective

MUMPO is responsible for transportation planning for nearly one million people in the center of the Charlotte region. There have been remarkable changes in the transportation planning landscape in just five years since the previous long-range plan. The region continues to experience growing congestion despite continued road widenings and opening of additional segments of I-485. MUMPO has considered existing and projected congestion, freight, commuting, growth, and revenue levels as it developed this plan.

■ Demographic Trends

As of 2005, the MUMPO area includes approximately one million people and 650,000 jobs. By 2035 MUMPO's population will increase by 600,000, and employment will increase by 500,000. The MUMPO area will remain the economic core of an expanding region, in terms of both population and employment.

By 2035, Charlotte's population will approach one million people, and Mecklenburg County will have over 1.3 million people. At that point Mecklenburg County will effectively be built out. These dramatic growth trends are reflected in the Travel Demand Model used by MUMPO to project future travel patterns and identify deficiencies in the transportation network.

■ Economic Linkages

The MUMPO area is the heart of a major freight and manufacturing center in the southeastern United States. The Charlotte region suffered along with the rest of the world with the recession of 2007-2009. The downturn showed how our financial, manufacturing, shipping, and political systems are interconnected.

The 2035 LRTP recommendations strive to strengthen the MUMPO transportation system to promote sound economic activity and develop a safe and reliable transportation network. This will allow workers to travel to work and shippers to move goods and services to, from, and through the region.

The global economy grew at a remarkable rate over the first seven years of this decade. The 2007-2009 national recession had a significant impact on economic activity for the entire globe as well as the region, which reduced construction costs, but construction costs are still roughly double what they were at the beginning of the decade.

MUMPO assumes the region is still well-positioned for continued growth over the next quarter-century but, unfortunately, construction costs are expected to exceed revenues for the foreseeable future.

■ Needs List

In mid-2008, MUMPO asked their members to submit candidate projects for consideration in development of the LRTP. This resulted in a list of 310 projects for MUMPO to consider (*see Appendix A for the full list*).

This list was reduced to 64 projects, which includes the Garden Parkway and the Monroe Bypass. Both of these projects are partially funded through tolls. The list also includes "loop" projects on I-485 and improvements to other highways and roads throughout the MUMPO area. The list does not specifically include maintenance, bridge replacement, pedestrian, or bicycle projects, due to the uneven funding levels and need for such projects.

■ Financial Considerations

SAFETEA-LU, the current Federal surface transportation program that guides transportation plan development, requires future projects to have costs that are calculated in "future year" costs.

In previous plans, MUMPO assumed that future revenues would have the same "buying power" in the future, but this has not proven to be true, with long-range plan project lists overly optimistic.

MUMPO assumes approximately \$6 billion will be available through 2035 to spend on highway, maintenance, bicycle, pedestrian, and other projects. Of this amount, approximately 20 percent, or \$1.3 billion, will be spent on road and bridge maintenance. MUMPO has calculated an average annual construction cost increase from 2010-2035 to be approximately six percent, with revenues increasing just two percent per year. The net result is that MUMPO's plan assumes fewer projects can be funded each ensuing year.

■ 2035 Fiscally Constrained Project List

A fiscally-constrained project list is one that is fully-funded through a certain year—in this case, 2035. Due to the limited amount of funds available, MUMPO considered several different funding scenarios to raise additional revenue, with varying project lists that resulted from the additional revenues. **The scenarios considered were:**

- ▶ No New Revenue (assumes no new funding sources through 2035);
- ▶ Additional Quarter-Cent Sales Tax for Roads for both Mecklenburg and Union Counties;
- ▶ Additional Quarter-Cent Sales Tax for Transit in Mecklenburg County; and
- ▶ Additional Quarter-Cent Sales Tax Split Between Roads and Transit in Mecklenburg County.

MUMPO decided (on November 18, 2009) to approve the “No New Revenue” scenario. In reaching this decision, MUMPO’s staff developed project lists that were evaluated for effectiveness in reducing congestion and air pollution. Due to the limited effect the additional funds under the other scenarios would have on a region of well over one million people, as well as the economic downturn still in effect in late 2009, MUMPO decided to approve the “No New Revenue” scenario.

■ Project Ranking Process

MUMPO approved a project ranking process in late 2007 that considers all aspects of each project considered for inclusion in the financially-constrained project list. The variables considered, as well as their objectives, include:

- *Safety*: reduce or remove potential for crashes;
- *Utility*: increase capacity to meet future travel demand;
- *Multi-modal transportation*: promote the use of rapid transit, express bus transit, and transit hubs; as well as walking and bicycling;
- *Environmental impact*: assess the project’s impact on documented environmentally-sensitive areas;
- *Human impact*: avoid adverse impacts and promote social and economic effects on minority and low-income populations;
- *Economic development*: improve access to existing and potential intermodal facilities as well as to employment centers; and
- *Land use*: assess the project’s impact on locally-adopted land use plans and/or policies.

All 310 candidate projects were evaluated and ranked by MUMPO staff. The project rankings were approved by MUMPO on July 15, 2009.

- ▶ The score of each of the 310 candidate projects is given in *Appendix A*.
- ▶ The score of the 64 projects proposed for funding is also given in *Chapter 11.1 (Streets and Highways)*.

■ Multi-Modal Considerations

Although the approved project list is limited to road projects, MUMPO supports the development of a multi-modal transportation network, and requires that appropriate eligible projects include bicycle and/or pedestrian accommodations. MUMPO did not include a 2035 project list of bicycle or pedestrian projects due to the uneven and unpredictable revenue streams available and dedicated to such projects. The *bicycle, pedestrian and greenway chapters* in the 2035 LRTP describe the planning and construction efforts and accomplishments within the MUMPO area.

The Charlotte Area Transit System (CATS) provided a projection (in the *transit chapter* of this LRTP) of when future transit corridors would open. CATS is currently re-evaluating the prioritization and schedule of future corridor construction due to reductions in revenues from its primary revenue source, Mecklenburg County's half-cent sales tax. The affected corridors include commuter rail to northern Mecklenburg County and the light-rail extension to the northeast, through the University area of Charlotte to near the Cabarrus County line.

■ Land Use and Environmental Considerations

MUMPO understands that land use and transportation issues are interrelated, and promotes transportation projects that are strongly linked to implementing land use plans for the affected area. MUMPO also considers the negative impacts of projects, and promotes those projects with limited environmental or human impacts.

The most visible environmental impact associated with transportation planning is *air quality*, particularly ozone. This MUMPO *2035 Long Range Transportation Plan* has been shown to *not* increase emissions of ozone precursors (specifically, oxides of Nitrogen), and in fact shows that such emissions will decrease by three-quarters through 2035, primarily due to improved vehicular emissions technology.

■ Emerging Issues

The coming years will necessitate a frank discussion of how to pay for transportation projects.

- ▶ If MUMPO and its member governments are truly successful in reducing congestion and single-occupant vehicular travel, it will also result in less fuel consumed—with a corresponding drop in motor fuel tax receipts.
- ▶ At the national level there will be an increased emphasis on fuel economy and transit usage, which will further reduce available revenues.
- ▶ Finally, new vehicular technologies are coming to market that will allow users to largely eliminate their use of gasoline or diesel fuel through plug-in hybrid electric propulsion.

The MUMPO members, North Carolina, and the nation must determine a rational and sustainable strategy for funding future transportation needs.

2010-2035 Financially Constrained Projects with No New Revenue

■ Horizon Year 2010-2015

Index No.	Rank	Project Name	Project Description	Project Cost (Inflated Dollars)
3121	E+C*	I-485/Weddington Road	New interchange	\$ 18,250,000
na	E+C	I-485/Garrison Road Interchange	New interchange	1,150,000
3159	E+C	Mallard Creek Road	Widening and relocation (4 lanes) from Sugar Creek Road to Harris Boulevard	27,924,000
3054	E+C	Charles Street	Widening (3 lanes), Sunset Drive to Franklin St	7,336,000
3146	E+C	Indian Trail Road	Widening (4 lanes) from Old Monroe Road to Independence Blvd (US 74)	5,900,000
3141	E+C	Independence Blvd (US 74)	Improvements (6 Ln + Managed or Bus Lanes), Sharon Amity Road to Conference Drive	152,700,000
3267	E+C	Stallings Road	Widening (4 lanes) from Old Monroe Road to Independence Blvd (US 74)	14,271,000
3311	E+C	West Boulevard Extension	New road (2 lanes), Steele Creek Rd to I-485	1,700,000
3239	E+C	Reedy Creek Road	Relocation (2 lanes) north of Harrisburg Road	3,050,000
3112	E+C	I-277/I-77	Add 1 lane to westbound I-277 bridge over I-77	3,550,000
3165	E+C	McKee Road Extension	New road (2 lanes), John Street to Campus Ridge Road	3,000,000
3205	E+C	NC 73 East	Widening (4 lanes), US 21 to NC 115	12,109,000
502	E+C	Dixie River Rd/NC 160 Connector	New road (2 lanes), NC 160 to Dixie River Road	5,200,000
3003	E+C	Freedom Drive (NC 27)	Widening (4 lanes), Edgewood Rd to Toddville Road	20,250,000
3157	E+C	Little Rock Road	Relocation (4 lanes), Flintrock Road to Freedom Drive (NC 27)	7,500,000
3238	E+C	Rea Road	Improvements (3 lanes), Colony Rd to NC 51	21,300,000
22	E+C	Fred D. Alexander Boulevard	New road (4 lanes), Freedom Drive (NC 27) to Brookshire Blvd (NC 16)	36,700,000
3067	17	City Boulevard Extension	New road (4 lanes), Neal Rd to Mallard Creek Road Extension	9,854,000
3000	19	Beatties Ford Road	Widening (4 lanes), Capps Hill Mine Road to Sunset Road	13,327,000
3032	37	Jim Cooke Road	New road (2-3 lanes), Northcross Drive Extension to Bailey Road	5,000,000
3214	45	Northcross Drive Extension	New road (3 lanes) from end of Northcross Dr to Westmoreland Road	3,000,000

* E+C = Existing and Committed

continued next page

Horizon Year 2010-2015 (continued)

Index No.	Rank	Project Name	Project Description	Project Cost (Inflated Dollars)
3133	88	I-77/Westmoreland Road	New interchange, SPUI	35,000,000
3132	93	I-77 Widening (North)	Adding managed lanes, 1 each way (6 lanes) from Hambridge Road to Catawba Avenue	22,000,000
3289	103	Statesville Road (US 21)	Widening (4 lanes), Northcross Center Court to Boat House Court	10,000,000
3317	122	Westmoreland Road	Widening (4 lanes), West Catawba Ave to US 21	15,000,000
3268	130	Statesville Road	Widening (4 lanes), Starita Rd to Keith Drive	21,280,000
3340	160	South Trade Street	Widening (4 lanes), Fullwood Lane to Wed-dington Road	8,775,000
3008	188	Idlewild Road	Widening (4 lanes), Piney Grove to Drifter Dr	8,000,000
3316	201	Westmoreland Road	Widening (4 lanes), US 21 to Washam-Potts Rd	2,149,000
3019	7	Alexanderana Road	New road (4 lanes), NC 115 to Eastfield Road	21,456,000
3005	92	I-485	New freeway (8 lanes), NC 115 to I-85	167,500,000
3135	186	I-85/I-485	Construct new interchange	80,000,000
3169	1	Monroe Connector/Bypass	New freeway (4 lanes), I-485 to US 74 (Wing-ate) (toll road)	813,500,000
3094	243	Garden Parkway	New freeway (4 lanes), I-485 to Gaston County line (toll road)	260,000,000

■ Horizon Year 2016-2025

3010	2	Independence Blvd (US 74)	Improvements (6 Ins + HOV or Bus Lanes), Conference Drive to Village Lake Drive	\$ 107,853,000
3009	3	Independence Blvd (US 74)	Improvements (6 Ins + HOV or Bus Lanes), Village Lake Drive to Krefeld Drive	58,974,000
3006	4	I-77/Catawba Avenue	Convert interchange from simple diamond to urban diamond	115,413,000
3192	5	Old Statesville Rd (NC 115)	Widening (4 lanes), Bailey Rd to Potts Street	48,306,000
3191	9	Old Statesville Rd (NC 115)	Widening (2 lanes), Potts Street to county line	40,869,000
3012	11	John Street/Old Monroe Rd	Widening (4 lanes), I-485 to Indian Trail Road	70,219,000
3312	15	West Boulevard Extension	Widening (4 lanes), Steele Creek Rd to I-485	12,860,000
3096	18	Gilead Road	Widening (4 lanes), US 21 to NC 115	13,655,000
3016	24	Airport Road	Widening (4 lanes), Goldmine Road to NC 84	23,145,000
3313	16	West Boulevard Relocation	New road (4 lanes), Yorkmont Road to Steele Creek Road	29,985,000
3314	29	West Boulevard Relocation	New road (4 lanes), Airport Dr to Yorkmont Rd	14,196,000

Horizon Year 2016-2025 (continued)

Index No.	Rank	Project Name	Project Description	Project Cost (Inflated Dollars)
3068	50	Community House Road Extension	New road (4 lanes), Endhaven Lane to south of I-485	16,678,000
3002	55	Clanton Road Extension	New road (2 lanes), West Blvd to Wilkinson Blvd	29,827,000
3225	74	Pavilion Boulevard Extension	New road (2 lanes) Salome Church Road to North Tryon Street (US 29)	7,204,000
3279	87	Sugar Creek Road/ Norfolk Southern Railroad	Grade separation with new railroad bridge	77,182,000
3217	171	Northeast Parkway Extension	New road (2 lanes), NC 51 to Matthews-Mint Hill Road	9,406,000
3118	113	I-485	Widening (6 lanes), I-77 to Johnston Road	128,002,000
3120	131	I-485	Widening (6 lanes), Johnston Road to Providence Road	109,402,000
3116	134	I-485	Widening (6 lanes), Providence Road (NC 16) to US 74	155,207,000

Horizon Year 2026-2035

3011	6	Independence Blvd. (US 74)	Improvements (6 Ln + HOV or Bus Lanes) from Krefeld Drive to Hayden Way	\$ 192,799,000
3142	10	Independence Blvd. (US 74)	Improvements (6 Ln + HOV or Bus Lanes) from Hayden Way to NC 51	115,268,000
3013	12	NC 51	Widening (4 lanes) from Matthews Township Parkway to Lawyers Road	97,253,000
3270	13	Statesville Road (US 21)	Widening (4 lanes) from Harris Boulevard to Gilead Road	142,403,000
3300	20	West Catawba Avenue	Widening (4 lanes) from Jetton Rd to NC 73	57,011,000
3337	28	Bridgefords/Northdowns Connector	New road (2 lanes) from Bridgefords Lane to Northdowns Lane	25,335,000
3040	42	Billy Graham Parkway/ Morris Field Drive	New Grade Separation	8,534,000
3026	57	Arequipa Drive Extension	New road (2 lanes) from Margaret Wallace Rd to Sam Newell Rd	35,929,000
3108	61	Hucks Road Extension	New road (4 lanes) from Old Statesville Rd (NC 115) to Statesville Rd (US 21)	33,022,000
3077	90	Eastern Circumferential	New road (4 lanes) from University City Blvd (NC 49) to Rocky River Road	146,429,000
3119	236	I-485	Widening (8 lanes) from I-77 to Johnston Rd (including Johnston Road Flyover)	496,470,000
3117	253	I-485	Widening (6 lanes) from US 74 to Albemarle Rd	316,464,000

Notes:

- Further detail on each of these 64 projects is found in *Chapter 11-2* in the full plan at www.mumpo.org
- Rank is based on 310 total projects considered (of which 64 are proposed for funding). Ranking criteria and the ranking of all projects are found in *Appendix A* of the full plan document, at www.mumpo.org

■ **OVERVIEW of the full plan document available on www.mumpo.org**

2035 LONG RANGE TRANSPORTATION PLAN

Background

- Chapters 1-2** give an overview of MUMPO and its goals.
- Chapters 3-4** describe public involvement, with special attention to underserved population groups.
- Chapters 5-8** cite the planning factors considered, with special focus in Chapters 6-8 on safety and security, congestion management, and the environment.
- Chapter 9** gives data on population, the economy and land use patterns.

Plan

- Chapter 10** summarizes funding sources and financial scenarios.
- Chapter 11** is the heart of the plan, focusing on these major components:
- 11.1 Regional Travel Demand Model
 - 11.2 Streets and Highways
 - 11.3 Public Transportation
 - 11.4 Bicycle
 - 11.5 Pedestrian
 - 11.6 Greenways and Trails
 - 11.7 Freight
 - 11.8 Other Modes
- Chapter 12** gives concluding remarks.
- Appendix A** describes the project ranking system and criteria, and gives the ranking of all 310 candidate projects.
- Appendix B** includes material related to public involvement.
- Appendix C** has information about congestion management.
- Appendix D** has information about environmental review.
- Map Gallery** contains 35 detailed maps, with links to the maps also in the text.

Where to find ...

- **A list of the MUMPO member governments:** Inside cover of this Executive Summary
- **Map of the MUMPO Area:** Figure 1-1 in the Map Gallery at the end of the full plan
- **A list of 64 projects proposed for funding:** Pages 5-7 of this Executive Summary
- **Full description of the 64 funded projects:** Beginning on page 11.2-5 of the full plan
- **Map showing funded projects:** Center pages of this Executive Summary
- **Population and employment projections:** Chapter 9, Page 9-6 in the full plan
- **Financial Plan and Scenarios:** Chapter 10 in the full plan
- **A list of all 310 projects considered:** Appendix A in the full plan
- **Details about the project ranking system:** Appendix A in the full plan
- **Description of public involvement:** Chapters 3 and 4, and Appendix B in the full plan

THE FULL PLAN DOCUMENT AND MAP GALLERY is online at www.mumpo.org

For additional copies of this Executive Summary, contact: Robert W. Cook, MUMPO Secretary (704-336-8643) or rwcook@ci.charlotte.nc.us

1.0

INTRODUCTION

This is the Long Range Transportation Plan (LRTP) for the Mecklenburg-Union Metropolitan Planning Organization (MUMPO). MUMPO is the federally designated regional transportation planning entity for all of Mecklenburg County and the western and central, urbanized portions of Union County.

MUMPO Jurisdictions

The following local governments are members of the Mecklenburg-Union MPO: Mecklenburg County; City of Charlotte; Towns of Cornelius, Davidson, Huntersville, Matthews, Mint Hill and Pineville; Union County; City of Monroe; Towns of Indian Trail, Stallings, Waxhaw, Weddington, Wesley Chapel and Wingate.

Other communities in western and central Union County (including Fairview, Hemby Bridge, Lake Park, Marvin, Mineral Springs and Unionville) are in MUMPO's planning area, but are not voting members of MUMPO because they do not have populations of at least 5,000 persons. The boundaries of the local jurisdictions that are voting members of MUMPO are shown in [Figure 1-1](#) in the Map Gallery at the end of this document.

The Greater Charlotte region, also referred to as the Metrolina region, encompasses an area much larger than that included within MUMPO's planning area. The larger, urbanizing region stretches across the North Carolina-South Carolina border, encompassing about a dozen counties in an area extending at least 35 miles away from downtown Charlotte. There are three other Metropolitan Planning Organizations, in addition to MUMPO, in the Greater Charlotte region. The boundaries of MUMPO and the adjacent MPOs are shown in [Figure 1-2](#) in the Map Gallery.

The 2035 Long-Range Transportation Plan

This document—MUMPO's *2035 Long-Range Transportation Plan* (LRTP)—defines the policies, programs and projects to be implemented over the next twenty-plus years in order to reduce congestion, improve safety, support land use plans and provide mobility choices in MUMPO's planning area.

The Long-Range Transportation Plan contains recommendations for the following types of surface transportation: streets and roads, transit routes, guideways, greenways and bicycle and pedestrian facilities. The LRTP also contains descriptions and assessments of conditions or factors affecting the surface transportation of persons and/or the movement of freight within MUMPO's planning area.

Coordination with Federal Transportation Planning Requirements

This LRTP is intended to comply with the Statewide and Metropolitan Transportation Planning regulations issued by the United States Department of Transportation (Federal Highway Administration and Federal Transit Administration) governing the development of transportation plans and programs for urbanized areas.

The LRTP was prepared in accordance with federal statute (23 CFR Part 450), which requires the development and update of transportation plans every four years in air quality maintenance or non-attainment areas. Those types of air quality designations are based on comparisons of actual pollutant emissions—not just from motor vehicles but all emissions sources—against the National Ambient Air Quality Standards. Mecklenburg County was classified as a *maintenance* area for Ozone and Carbon Monoxide in July 1995. In April, 2004, the U.S. Environmental Protection Agency (EPA) classified Mecklenburg, Union and other counties in the Greater Charlotte region as being in *non-attainment* of the 1997 8-Hour Ozone Standard.

MUMPO's previous LRTP was updated in 2005 and the Conformity Determination was issued on May 3, 2005. That 2030 Plan and Conformity Determination will lapse on May 3, 2010. This *2035 Long-Range Transportation Plan*—based on population, employment and travel projections for the years 2015, 2025 and 2035—will replace the *2030 Long-Range Transportation Plan* and will satisfy the requirements of the Clean Air Act.

This plan fulfills conformity requirements for Carbon Monoxide (CO) and for Ozone. The roadway and transit projects included in this LRTP were analyzed and were required to demonstrate conformity with the 8-Hour Ozone Standard and conformity with the 8-Hour CO Standard.

SAFETEA-LU Requirements

It was necessary to make changes to the 2030 Plan originally prepared for public review (at the end of March, 2005) in order for the LRTP to pass the conformity requirements. In August, 2005, passage of the **Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)** established new and revised requirements for statewide and metropolitan transportation plans and programs, as well as the underlying planning processes.

Compliance with SAFETEA-LU's new and revised planning provisions has been required for new plans since July 1, 2007. These provisions are set forth in SAFETEA-LU, and described more fully in the joint regulation issued by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) (23 CFR Parts 450 and 500 and 49 CFR Part 613: Statewide Transportation Planning; Metropolitan Transportation Planning). These requirements include:

- The statewide metropolitan planning process and the metropolitan planning process for a metropolitan planning area shall provide for consideration of projects and strategies that will increase the **security of the transportation system** for motorized and nonmotorized users [49 USC 5303(h)(1)(C) and 23 USC 134(h)(1)(C)].

- MPOs and DOTs are to include in their metropolitan and statewide transportation plans a discussion of types of **potential environmental mitigation activities** and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. These discussions are to be developed in consultation with federal, state, and tribal wildlife, land management, and regulatory agencies [49 USC 5303(i)(2)(B), 5304(f)(4)(A)(B) and 23 USC 134(i)(2)(B)].
- MPOs are to develop and utilize a **participation plan**. A participation plan is to be developed in consultation with all interested parties and provide that all interested parties have reasonable opportunities to comment on the contents of the transportation plan [49 USC 5303(i)(5)(B)(i) & (ii) and 23 USC 134(i)(5)(B)(i) & (ii)].
- MPOs and DOTs **consult, as appropriate, with state and local agencies** responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of an LRTP [49 USC 5303(i)(4)(A), 49 USC 5304(f)(2)(D)(i), and 23 USC 134(i)(4)(A)].
- The LRTP shall be developed, as appropriate, in consultation with state, tribal, and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation [49 USC 5304(f)(2)(D) and 23 USC 135(f)(2)(D)].
- The Secretary of US DOT shall encourage each MPO to consult with officials responsible for other types of planning activities that are affected by transportation in the area (including state and local planned growth, economic development, environmental protection, airport operations, and freight movements) or to coordinate its planning process, to the maximum extent practicable, with such planning activities [49 USC 5303(g)(3) and 23 USC 134(g)(3)].
- The MPO and State DOT shall, to the maximum extent practicable, employ **visualization techniques** to describe plans [49 USC 5303(i)(5)(C)(ii), 23 USC 134(i)(5)(C)(ii)], and 5304(f)(3)(B)(ii).
- MPOs and DOTs shall, to the maximum extent practicable, make public information on the transportation plan available in **electronically accessible** format and means, such as the World Wide Web, as appropriate to afford reasonable opportunity for consideration of public information [49 USC 5303(i)(5)(C)(iii), 23 USC 134(i)(5)(C)(iii), and 23 USC 135(f)(8)].
- Proposed projects under three FTA formula funding programs—*Elderly Individuals and Individuals with Disabilities* [49 USC 5310(d)(2)(B)(i) & (ii)]; *Job Access and Reverse Commute* [49 USC 5316 (g)(3)(A) & (B)]; and *New Freedom* [49 USC 5317 (f)(3)(A) & (B)]—must be derived from a locally developed and **coordinated public transit-human services transportation plan**. Local officials will determine the appropriate “lead” which may or may not be the MPO.
- An **annual listing of projects**, including investments in pedestrian walkways and bicycle transportation facilities, for which Federal funds have been obligated in the preceding year shall be published or otherwise made available by the cooperative effort of the State, transit operator, and metropolitan planning organization for public review. The listing shall be consistent with the categories identified in the TIP [49 USC 5303(j)(7)(B) and 23 USC 134(j)(7)(B)].

1.1 Related Plans and Programs

There are several plans and planning processes that served as precursors to this *2035 Long Range Transportation Plan*. Some of the most significant ones are described below.

■ The 2025 Integrated Transit/Land-Use Plan

This strategic plan—completed in October 1998 after an extensive public involvement process—became the basis for a county-wide referendum on enacting a local sales tax dedicated to support a greatly expanded transit system in Mecklenburg County. A 58 percent majority of the county voters supported the proposed half-cent sales tax increase. The plan calls for investment in five rapid transit corridors and significant expansion of complementary and supporting bus transit services. The most innovative concept in this plan is the requirement for ongoing, close coordination of land use decisions with the investments in the transit system. Major Investment Studies (MIS) have been completed for the five rapid transit corridors. Those studies considered all reasonable alignments and technologies within each corridor. Light rail transit was selected for the South Corridor when that corridor's MIS was completed in 2000, and the corridor's Lynx Blue Line began operations in November, 2007.

■ The 2030 Transit System Plan

This *2030 Transit Corridor System Plan* was adopted by the Metropolitan Transit Commission (MTC) in November, 2006. The plan consists of rapid transit improvements in five corridors (South, Southeast, Northeast, North and West), a series of improvements in uptown Charlotte, streetcar service from I-85 and Beatties Ford Road to Eastland Mall, and bus service and facility improvements throughout the region. When completed, the plan will serve four times as many transit riders as the present system, and will include 14 miles of bus rapid transit (BRT) guideways, 21 miles of light rail transit (LRT), 16 miles of streetcar, 25 miles of commuter rail, and an extended network of bus service.

■ Unified Planning Work Program (UPWP)

The UPWP is adopted annually by MUMPO and identifies the major transportation planning activities to be undertaken for the coming year. An important element of the UPWP is the continuing update and maintenance of land use, demographic and travel data needed to apply the computer model, which projects travel demands based on the population and employment projections and the transportation facilities and services.

■ Transportation Improvement Program (TIP)

This program of capital projects describes the region's and the state's anticipated investments in transportation over a seven-year period. The State TIP is updated every two years by the North Carolina Board of Transportation and must then be endorsed by MUMPO.

1.2 Transportation Policy Boards

■ Mecklenburg-Union Metropolitan Planning Organization (MUMPO)

Under federal law, any urbanized area (as defined by the Census Bureau) with a population over 50,000 must establish an MPO whose purpose is to coordinate transportation planning and programming among the member governments. MUMPO includes Mecklenburg County and most of Union County. Representatives to the MPO include :

- members of the governing boards of Mecklenburg and Union counties, the cities of Charlotte and Monroe, and the towns of Davidson, Cornelius, Huntersville, Indian Trail, Matthews, Mint Hill, Pineville, Stallings, Waxhaw, Weddington, Wesley Chapel and Wingate,;
- The local representative to the N.C. Board of Transportation is also a voting member of MUMPO; and
- non-voting representatives from the Union County Planning Board, the Charlotte-Mecklenburg Planning Commission and the U.S. Department of Transportation also participate in MUMPO meetings.

The voting structure is based on population, with Charlotte assigned 16 votes; Mecklenburg and Union counties, two each; Huntersville, Matthews, Mint Hill and Monroe, two each; and each of the other voting members, one each—for a total of 38 votes.

The MPO is charged with the responsibility of adopting the Long-Range Transportation Plan, and the Thoroughfare Plan required in North Carolina; the Transportation Improvement Program for road, transit, bicycle, and pedestrian investments; and the Unified Planning Work Program.

After appropriate planning, engineering, and public input, the MPO will adopt specific alignments for proposed thoroughfares and transit guideways. Local governments will then use these alignments to require land development proposals to conform to the long-range plan by reserving or donating the land upon which the thoroughfares and transit guideways will be constructed, and by integrating the land development patterns with the transportation system. Finally, the MPO must certify that these plans will allow the local area to maintain its air quality goals.

■ Mecklenburg-Union Technical Coordinating Committee (TCC)

The TCC is the staff arm to MUMPO and holds regular monthly meetings. It is composed of representatives of the various municipal and county departments involved in the transportation planning process. Various state and federal staff are also members.

The TCC's primary responsibility is to carry out the planning tasks described in the Unified Planning Work Program. These include the updates to the Long Range Transportation Plan, analyses of operational issues in the thoroughfare system, recommendations for various transportation investment programs, and the public involvement process for the MPO. Virtually all technical recommendations to the MPO originate at the TCC level.

■ **Charlotte Regional Alliance for Transportation (CRAFT)**

Four metropolitan planning organizations—the Cabarrus-Rowan Urban Area, the Gaston Urban Area, the Mecklenburg-Union Urban Area and the Rock Hill-Fort Mill (South Carolina) Area Transportation Study—and two Rural Planning Organizations (RPOs)—Lake Norman and Rocky River—participate in a continuing, cooperative and comprehensive transportation planning process through an entity known as the Charlotte Regional Alliance for Transportation (CRAFT). CRAFT’s role is to enhance communication between jurisdictions, promote awareness of regional concerns, and provide a forum in the Charlotte metropolitan bi-state region for addressing significant issues of common interest.

■ **North Carolina Board of Transportation (BOT)**

The Board of Transportation is charged with setting policies for state-maintained and operated transportation systems regardless of mode. The Governor of the State of North Carolina appoints the Board, which has 19 members and the non-voting Secretary of Transportation. The Board adopts the State’s *Transportation Improvement Program (TIP)*, the seven-year investment program determining how state and federal transportation funds will be spent statewide.

■ **Metropolitan Transit Commission (MTC)**

The Metropolitan Transit Commission was established in 1999 to help implement Mecklenburg County’s half-cent sales tax for transit purposes. Mecklenburg County and the county’s seven incorporated local jurisdictions formed the MTC to act as the policy body to review and approve transit system operations and improvements throughout the county. Two members (the mayor and manager of the governmental unit) represent each jurisdiction, but only one vote is assigned to each of the eight participating governments.

In 2004, the Citizens Transit Advisory Group (CTAG) evaluated the original MTC Governance Agreement. The report addressed possible expansion of rapid transit service to surrounding counties and, consequently, the addition of new voting members. The MTC received CTAG’s report and directed the county and town managers to explore four issues: (a) designation of the NCDOT representative as a voting member; (b) the timing and criteria for adding jurisdictions from outside Mecklenburg County as voting members; (c) revision of provisions in the existing Interlocal Agreement that may serve as impediments to continued successful governance of the system; and (d) the future role and composition of the CTAG.

► **See the Map Gallery at the end of this document for the following maps:**

[Cities and Towns in MUMPO](#) [Figure 1-1](#)

[Metropolitan and Rural Planning Organizations in the Charlotte Region](#) [Figure 1-2](#)

2.0

GOALS AND OBJECTIVES

2.1 Mission

The mission of the Mecklenburg-Union Metropolitan Planning Organization (MUMPO) is to plan for transportation options that assure mobility, respect the natural and built environment, and strengthen the economic prosperity of MUMPO's planning area.

Four surface transportation modes — roadway, transit, bicycle and pedestrian — comprise a system designed to foster the safe and efficient movement of people and support the growth and development objectives of the Mecklenburg-Union MPO. Rail lines, intermodal terminals and Charlotte/Douglas International Airport provide connections for people traveling and goods shipped to and from this area.

This **2035 Long-Range Transportation Plan (LRTP)** describes the programs that carry out MUMPO's mission. To determine the projects that make up the plan, MUMPO is guided by the goals and objectives below. The plan is based on an assessment of future travel conditions and a variety of land development and environmental factors described in this document.

2.2 Goals

- ▶ Provide a **safe and efficient** transportation system for all modes.
- ▶ Improve the **quality of life** for residents of the Mecklenburg-Union MPO area.
- ▶ Provide a transportation system that serves the public with **mobility** choices, including walking, bicycling and transit options.
- ▶ Provide a transportation system that is sensitive to significant features of the natural and human **environments**.
- ▶ Provide **equitable** transportation options for low income and minority neighborhoods.
- ▶ Provide meaningful opportunities for **public involvement** in the transportation planning process.

2.3 Objectives

1 Streets and Highways

Develop an efficient street and highway network capable of providing an appropriate level of service for a variety of transportation modes.

- Develop streets and highways in a manner consistent with adopted land use plans.
- Increase the connectivity of the existing street network and improve access to city and town centers.
- Develop regionally significant streets and highways in a manner which minimizes travel times and distances.
- Optimize the inter-city, inter-regional and intra-regional capacities of major transportation corridors.
- Develop streets and highways that are accessible to or compatible with multiple modes of transportation.
- Develop visually attractive corridors.
- Minimize accident potential and severity.
- Include sidewalks and bicycle facilities in the design of roadways to accommodate and encourage pedestrian and bicycle travel.

2 Public Transportation System

Promote a safe, efficient and diverse public transportation system that is accessible to various segments of the population.

- Operate safe and efficient scheduled transit services that minimize travel times and distances.
- Implement land use strategies that maximize the potential for transit patronage and coverage.
- Develop land use and density criteria for transit centers and corridors.
- Establish programs and incentives that encourage ridesharing (or eliminate barriers to ridesharing).
- Serve the elderly and transportation-disadvantaged populations with convenient transportation to needed services.
- Increase transit patronage as a percentage of total trips.
- Maximize transit's coverage area to the extent feasible.
- Facilitate the integration or coordination of different transportation modes by establishing inter-modal facilities.
- Reserve designated rail and transit corridors for future needs.

3 Pedestrian and Bicycle Transportation

Develop a transportation system that integrates pedestrian and bicycle modes of transportation with motor vehicle transportation, and encourages walking and bicycling.

- Enable pedestrians and bicyclists to choose a convenient and comfortable way to reach their destination, regardless of their location or their personal mobility level, age or economic status.
- Increase the design sensitivity of specific transportation projects to the needs of pedestrians and bicyclists.
- Improve the transportation system to accommodate pedestrian and bicycle access along roadways, through design and facility standards.
- Increase pedestrian and bicycle safety through public awareness programs.
- Provide linkages for pedestrians and/or bicyclists with neighborhoods, employment centers, services, commercial areas and other business districts, parks, and cultural facilities such as schools and churches.

4 Rail and Air Transportation

Maximize air and air travel and transportation opportunities.

- Promote initiatives at Charlotte/Douglas International Airport that increase the attractiveness of the airport as a major passenger and cargo facility.
- Maintain the airport's ongoing long range planning function.
- Promote future opportunities for inter-regional mobility through enhancements to inter-city rail service and the provision of high-speed rail service.

5 Freight and Goods Movement

Provide a freight transportation system supporting the movement of goods.

- Develop a transportation system supporting Charlotte's position as a major distribution center, improving and maintaining access for freight to other markets via a network of highways, railroads and Charlotte/Douglas International Airport.
- Develop streets and highways that are accessible to and compatible with multiple modes of transportation.
- Facilitate coordination among transportation modes through the establishment of Intermodal facilities
- Identify opportunities to share rail corridors with transit.

continued next page

- Support expansion opportunities at Charlotte/Douglas International Airport that increase the attractiveness of the airport as a major cargo facility.
- Designate safe routes, with minimal urban exposure, for the transport of hazardous materials.
- Designate truck routes that minimize exposure to neighborhoods and to historic and cultural resources.

6 Environment

Develop a transportation system that preserves and enhances the natural and built environments.

- Develop transportation systems and programs that maintain or improve air quality.
- Design transportation facilities that minimize the impact of traffic noise on surrounding properties.
- Design transportation systems and facilities that preserve and complement the area's natural features.
- Plan transportation facilities that protect cultural and historic resources.
- Design attractive transportation systems that reinforce community standards of appearance.
- Plan transportation facilities that minimize neighborhood disruption and related impacts.
- Designate safe routes, with minimal urban exposure, for the transport of hazardous materials.
- Designate truck routes that promote safety and minimize exposure to neighborhoods and to historic and cultural resources.

7 Financial

Make investment decisions for transportation modes that make the most efficient use of limited public resources.

- Minimize implementation and operation costs of transportation projects.
- Develop transportation projects that enhance the local and regional economies.
- Actively explore new sources of revenue.
- Foster innovative financing and partnership opportunities for project development and implementation.

3.0

Public Involvement

MUMPO's adopted Public Involvement Plan (PIP) states its commitment "to meaningful public involvement in the regional transportation planning process" — and that it "believes public participation is not a simple 'add-on' or 'after thought,' but a method that guarantees high quality transportation planning."

This approach guided outreach efforts associated with the preparation of the *2035 Long-Range Transportation Plan (LRTP)* and resulted in five key areas where those efforts were focused:

1. Website
2. Expansion of contact lists
3. Brochure
4. Survey
5. Public meetings

■ Website

MUMPO views its website as its "face" to the community. Few people have the time to attend meetings, but the website can be accessed 24 hours a day. MUMPO began updating its website to include information about the Long-Range Transportation Plan (LRTP) in December, 2007, and updated it with relevant information as frequently as necessary. Key components of the LRTP section of the website included:

- General background information was provided to give the reader basic information on what an LRTP is and why it is being updated.
- A link to the 2030 LRTP was provided in the update section in order to provide greater context.
- All project lists and maps were posted.
- Information on upcoming meetings was posted in a timely manner.
- A section entitled "Resource Agency Consultation" was created as a part of the update section and was focused on the needs of MUMPO's Consultation process partners; however all visitors to the website could view the posted information.
- Presentations given to the MPO were posted.
- The LRTP brochure was posted.
- The "Notify Me" feature was added so that a subscriber to this feature would receive an email when the section was updated.

In general, the goal was to provide all pertinent information so as to allow the general public to understand the issues associated with the update.

All correspondence produced to inform the community about the update included the web address and encouraged visits to the website.

■ Expansion of Contact Lists

In advance of the work to update the LRTP, MUMPO expended considerable time and effort to ensure that “citizens, affected public agencies, representatives of public transportation employees, freight shippers providers of freight transportation services, private providers of transportation representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled” (23 CFR 450.316) were included in an updated contact database.

The resulting database included federal, state, county and city agencies, Environmental Justice and traditionally underserved organizations, cultural and social groups, faith-based and volunteer organizations, English and non-English speaking groups, advocacy groups, and interested individuals with no specific affiliation. As a result, the following groups were added:

100 Black Men of Charlotte	Charlotte-Mecklenburg Council on Aging
ACORN of Charlotte	Charlotte-Mecklenburg Housing Partnership
ACWR Aberdeen Carolina & Western Railway	Charlotte-Mecklenburg Schools
Ada Jenkins Center	Charlotte-Mecklenburg Senior Centers
African-American Affairs Ministry, Diocese of Charlotte	Charlotte Regional Partnership
Alpha Phi Alpha	Citizens for Efficient Mass Transit
American Red Cross - Charlotte Chapter	Council on Aging in Union County
ARC of Mecklenburg County	Crisis Assistance Ministry - Mecklenburg
ARC of Union County	Crisis Assistance Ministry - Union
Bridge Charlotte	CSX Railroad
C.A.R.E.	Davidson Lands Conservancy
Carolinas Asian-American Chamber of Commerce	Disability Rights and Resources
Carolinas Association for Passenger Trains	Downtown Monroe, Inc.
Carolinas Clean Air Coalition	Fit City Challenge
Carolina Thread Trail	Friendship Missionary Baptist Church
Catawba Lands Conservancy	Goodwill Industries of the Southern Piedmont
Catawba River Keeper Foundation	Habitat for Humanity, Charlotte
Centralina Agency on Aging	H.E.L.P. - Helping Empower Local People
Central Piedmont Community College	Hispanic Ministry - Diocese of Charlotte
Charlotte Area Bicycle Alliance	Johnson C. Smith Local Alumni Chapter
Charlotte Area Transit System Employees	Kappa Alpha Psi
Charlotte Center City Partners	Lake Norman Chamber of Commerce
Charlotte Chamber	Latin American Coalition
Charlotte Housing Authority	Logistics Roundtable
Charlotte-Mecklenburg Black Chamber of Commerce	Mecklenburg Quality Air Quality
	Mecklenburg County Park and Recreation Department

Monroe Economic Development	South Piedmont Community College
NAACP - Mecklenburg County	Southern Environmental Law Center
NAACP - Union County	Transit Employees
NCDOT Rail Division	Transit Users c/o Charlotte Area Transit System
NC Dept of Environment and Natural Resources	Trust for Public Land
NC Wildlife Resources Commission	UNC-Charlotte Public Relations Office, Center for Transportation, Policy Studies, Land Use and Environmental Planning
Norfolk Southern Railroad	Union County Chamber of Commerce
North Carolina Railroad	Union County Habitat for Humanity
Our Lady of Guadalupe Church	Union County Public Schools
Passenger Vehicle for Hire Section of Charlotte-Mecklenburg Police Department	United Family Services
Real Estate and Building Industry Coalition	United Negro College Fund
Salvation Army, Charlotte Area Command	University Park Baptist Church
Sustainable Environment for Quality of Life (SEQL)	Urban League of Central Carolinas
Sierra Club	US Environmental Protection Agency
Southeast High Speed Rail Corridor Project	US Fish and Wildlife Service
St. John Lee Church	YWCA Central Carolinas
St. Joseph Church	

This list was used to provide information to a wide cross-section of stakeholders in the transportation planning process.

■ Brochure

A full-color MUMPO brochure was produced in both English and Spanish. The 8.5-inch by 11-inch tri-fold brochure was produced to serve several purposes including:

- introduce MUMPO, MUMPO's Policy Board and the LRTP;
- describe opportunities for the public to participate in the LRTP update;
- identify avenues to obtain additional information about MUMPO activities; and
- introduce the MUMPO website, and provide MUMPO contact information.

The brochure was distributed to attendees at MUMPO-sponsored meetings as well as those sponsored by other groups where staff manned a MUMPO table. The brochure was also made available at the Charlotte-Mecklenburg Government Center and other town halls throughout the MUMPO area.

■ Survey

A survey was prepared early in the LRTP's development to gauge the general public's views on the region's most significant transportation priorities so as to assist those preparing the plan to better understand the public's concerns.

The survey was posted on MUMPO's website from February until May 2008, a link was distributed to approximately 375 individuals and/or groups in MUMPO's database, and copies were distributed at events in which staff participated by manning a MUMPO information table. The survey elicited 258 online responses and 21 hard copy responses. Survey results are summarized on the following page.

Long-Range Transportation Plan Survey Results

Survey conducted February-May 2008 to gauge the public's views on transportation issues in MUMPO's planning area.

County of Residence

Mecklenburg	61%
Union	34%
Other.....	5%

City/Town of Residence

Charlotte	55.0%
Monroe.....	13.3%
Indian Trail.....	9.0%
Weddington	6.2%
Huntersville.....	5.2%
Other.....	11.4%

Workplace Location

Mecklenburg	67.3%
Union	23.1%
Other.....	9.6%

Main form of transportation (typical weekday)

Drive alone in personal vehicle	87.4%
Share a ride (carpool, vanpool)	4.7%
Public transportation.....	3.1%
Walk.....	0.8%
Bicycle.....	0.4%
Other.....	3.5%

What is the region's biggest transportation problem?

Difficulty in reaching desired destination	4.6%
Congestion	49.2%
Travel time	2.7%
Cost of transportation	1.2%
Lack of transportation options.....	15.0%
Skipped this question	23.8%
Other	3.5%

Would you like to see rail transit extended to your community?

Yes	68.2%
No.....	31.8%

In your opinion, what road has the worst congestion in the Mecklenburg/Union area? (Figures represent the number of respondents who listed the following roads as having the area's worst congestion.)

US 74/Independence Boulevard	48
I-485.....	45
I-77.....	25
NC 16/Providence Road	13
W.T.Harris Boulevard.....	7
NC 73.....	6

Those taking the survey were asked to indicate their transportation spending priorities through an exercise where they were to assign \$100 to a variety of project types. (188 people responded to this question and the dollar figures below represent averages of the responses.)

Adding lanes to existing roadways .	\$29.0
Building new roads	\$22.2
Encouraging alternative transportation	\$7.3
Providing real time traffic information	\$2.3
Maintaining existing roadways	\$15.7
Improving road safety.....	\$4.8
Providing more transit service.....	\$13.0
Providing bicycle and pedestrian facilities	\$4.6
Other	\$0.6

What do you believe are the most important transportation needs in our region today? (Respondents could list up to three.)

Adequate, dedicated transportation funding.....	65.1%
Improve safety.....	20.8%
Reduce traffic congestion	76.0%
Add freight capacity (i.e. freight rail and/or air freight improvements)...	6.8%
Expand the rapid transit system	44.8%
Provide more travel options (transit, bicycle, pedestrian, carpools)	26.6%
Other.....	.3%

■ Public Meetings

Providing the public with an opportunity to learn more about MUMPO's plans and programs through staff-sponsored events is an important component of its outreach efforts because it focuses attention on the issue being presented. However, even the best publicized events can result in low turnout due to the difficulty in engaging the public in long-range planning efforts.

For this reason MUMPO pursued participating in well-established events sponsored by others that had a history of good attendance by a broad cross-section of the general public. By doing so, information about the LRTP could be presented to greater numbers of citizens.

The following lists public meetings and events (both staff-sponsored and sponsored by others) at which the LRTP was discussed.

LRTP Open Houses

- ▶ February 21, 2008 - Charlotte-Mecklenburg Government Center, Charlotte
- ▶ February 28, 2008 - South Piedmont Community College, Monroe

The purpose of these open houses was to kick-off the public involvement process for the LRTP update by obtaining the public's input on its transportation priorities for the region.

The open houses also served as an opportunity for MUMPO's Consultation partners to discuss the LRTP process, and three agencies sent representatives: US Fish & Wildlife Service (Charlotte Open House); NC Division of Water Quality (Charlotte Open House); NC Wildlife Resources Commission (Monroe Open House). The Charlotte Open House was held jointly with the Gaston Urban Area MPO.

Publicity was generated by a media release to 21 outlets (print, television and radio), an email sent to approximately 375 individuals and groups on MUMPO's databases, a postcard to over 1,000 recipients and an advertisement published in the *Monroe Enquirer-Journal*, *Charlotte Observer*, *Charlotte Post*, *Huntersville Herald* and *Que Pasa*.

A variety of information was displayed at the open houses, including:

- Maps showing the 2030 Plan roadway networks
- Project lists (projects to be ranked for inclusion in the 2035 Plan)
- Maps providing information on Mecklenburg County's existing greenways and its ongoing greenway planning efforts
- A map of CDOT's proposed bike network for the city of Charlotte
- Map depicting Stallings' proposed pedestrian plan (February 28 only)
- Comment sheet
- LRTP update survey
- Fast Lanes study information
- MUMPO brochure
- MUMPO LRTP update brochure
- Map showing the detailed study alternatives for the Monroe Connector/Bypass

Charlotte Neighborhood Symposium

Staff participated in the City of Charlotte's Neighborhood Symposium on Saturday, March 8, 2008 at the Charlotte Convention Center. Staff was able to discuss the LRTP update with attendees, maps were used to show the current plan's priorities and the LRTP update brochure was distributed. Attendees were also provided copies of MUMPO's LRTP update survey, or were directed to take the survey online. Approximately 600 people attended this event.

Northwest Huntersville Transportation Study

Approximately 55 people attended this event held at Huntersville Town Hall on Wednesday, April 16, 2008. Staff was able to discuss the LRTP update with attendees and the LRTP update brochure was distributed.

Earth Day 2008

Staff participated in three Earth Day events in 2008:

- ▶ Mecklenburg County - Saturday, April 19
- ▶ Cornelius - Tuesday, April 22
- ▶ Indian Trail - Saturday, April 26

Staff was able to discuss the LRTP update with attendees, maps were used to show the current Plan's priorities and the LRTP update brochure was distributed.

Earth Day 2009

Staff participated in Mecklenburg County's Earth Day event at the main campus of Central Piedmont Community College (CPCC). A booth was staff from 10:00 AM until 3:00 PM on Saturday, April 18, 2009. Staff was able to discuss the LRTP update with attendees and the LRTP update brochure was distributed.

Lake Norman Real Estate Alliance

A presentation was made to the Lake Norman Real Estate Alliance on June 11, 2009 to inform the group about MUMPO's efforts to update the LRTP.

Steele Creek Area Plan Kick-Off Meetings


The Charlotte-Mecklenburg Planning Department kicked off its Steele Creek area plan development process at meetings held on June 23 and 25, 2009. Staff manned a table at both meetings and was able to discuss the LRTP update with attendees. Maps were used to show the current plan's priorities and copies of the LRTP update brochure were provided.

Draft Financially-Constrained Project List Public Meetings

- ▶ August 24, 2009 - Charlotte-Mecklenburg Government Center, Charlotte
- ▶ August 31, 2009 - Indian Trail Town Hall, Indian Trail

The purpose of the two meetings was to provide the public with an opportunity to review the draft project lists, discuss them with staff and comment on the draft priorities established by the MPO.

Publicity was generated by a media release to 21 outlets (print, television and radio), an email sent to approximately 375 individuals and groups on MUMPO's databases and an advertisement published in the Charlotte Observer, Monroe Enquirer-Journal, Charlotte Post, Lake Norman Herald, Que Pasa, Indian Trail Trader and the Waxhaw Exchange. Stories about the meetings aired on WCCB-TV and WSOC-TV.



**MECKLENBURG-UNION
METROPOLITAN PLANNING ORGANIZATION**

Have A Voice In Transportation Needs

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) will hold two open houses to review draft financially constrained road project lists for the update to the long-range transportation plan (LRTP). The LRTP is a federally-mandated, long-term planning document detailing the transportation improvements and policies to be implemented in MUMPO's planning area. It will outline where and how roads, transit, bicycle and pedestrian facilities will be built up to the year 2035.

You are invited to attend to provide your input on the projects lists, as well as your priorities for the region's transportation future. There will be no formal presentations, so feel free to show up at any time during the time periods listed to the left.

For more information, please visit www.mumpo.org.

For more information, contact Robert W. Cook at 704-336-8643 or rwcook@ci.charlotte.nc.us.

Monday, August 24-Charlotte
4:00 PM - 6:00 PM
Room 266
Charlotte-Mecklenburg
Government Center
600 E. Fourth St.
Charlotte, NC

Monday, August 31-Indian Trail
4:00 PM - 7:00 PM
Indian Trail Town Hall Civic Bldg.
100 Navajo Trail
Indian Trail, NC

Newspaper Announcement

A variety of information was displayed, including:

- Maps depicting the draft financially-constrained project lists for the three horizon years
- A map depicting the projects nominated for inclusion in the LRTP but that could not be built due to the lack of financial resources
- Project lists (tabular form)
- Comment sheet
- Fast Lanes study information
- MUMPO brochure
- MUMPO LRTP update brochure
- Map showing the detailed study alternatives for the Monroe Connector/Bypass

Charlotte Area Bicycle Alliance

Staff conducted a presentation to the Charlotte Area Bicycle Alliance on September 14, 2009 to inform the group about MUMPO's efforts to update the LRTP.

Back Creek Church Road Improvements Public Meeting

The Charlotte Department of Transportation held a public meeting on September 17, 2009 to discuss planned improvements to Back Creek Church Road. Staff manned a table at this event and was able to discuss the LRTP update with attendees. Up-to-date maps showing the road projects on MUMPO's draft project lists were displayed and copies of the LRTP update brochure were provided.

Elizabeth Area Plan Kick-Off Meeting

The Charlotte-Mecklenburg Planning Department kicked off its Elizabeth area plan development process at a meeting held on September 22, 2009. Staff manned a table at this meeting and was able to discuss the LRTP update with attendees. Up-to-date maps showing the road projects on MUMPO's draft project lists were displayed and copies of the LRTP update brochure were provided.

- **Please see Appendix B** for the following materials related to Public Involvement:
- February 2008 Open House Meeting Materials**
 - August 2009 Public Meeting Materials**

4.0

ENVIRONMENTAL JUSTICE

■ Background

Environmental justice (EJ) is a process through which it is assured that poor communities and communities of color do not bear more than their share of environmental burdens. Historically, residents living within communities that face disproportionate negative impacts from transportation projects, regulations or activities are often minorities or people of low wealth. Further, these residents and communities have often been excluded from transportation policy-setting or decision-making processes.

The concept of environmental justice arose in the United States during the early 1980s within Black, Hispanic and indigenous communities that were disproportionately subjected to pollutants in their neighborhoods. The social justice approach to the movement resulted in Title VI of the 1964 Civil Rights Act which states that “no person in the United States shall, on the grounds of race, color or national origin be excluded from participation in, be denied the benefits or, or be subjected to discrimination under any program or activity receiving Federal financial assistance.”

In addition, Federal Executive Order 12898, signed in 1994 to address environmental injustice in minority and low-income communities, states that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” The executive order identifies minority populations as belonging to any of the following groups:

- **Black** – a person having origins in any of the black racial groups of Africa;
- **Hispanic** – a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
- **Asian-American** – a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands; and,
- **American Indian and Alaskan Native** – a person having origins in any of the original people of North America and who maintain cultural identification through tribal affiliation or community recognition.

The Executive Order defines low-income populations as those whose household incomes are at or below the U.S. Department of Health and Human Services poverty guidelines (e.g. \$22,050 annual income for a family of four in 2009).

There are three fundamental **environmental justice principles**:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

■ MUMPO Activities

MUMPO's efforts in the area of environmental justice are found in its adopted "Public Involvement Plan," wherein it states that there will be an emphasis on "reaching people who have traditionally not been participants in the transportation planning process."

The development of this plan represents the Metropolitan Planning Organization's commitment to making significant efforts to reach out to environmental justice communities (as defined in Executive Order 12898) throughout its planning area. This effort is intended not merely to satisfy plan preparation requirements, but to ensure that outreach is an ongoing part of MUMPO's transportation planning process and that those traditionally left out of the process are brought in as full participants.

In order to achieve the goals of its Public Involvement Plan, several activities have taken or will take place:

- 1. MUMPO staff gathered all pertinent information from the 2000 Census and prepared maps that depict the distribution of the environmental justice and low-income populations** across MUMPO's planning area by block group and Census tracts (for low-income). 2000 Census information was not relied upon exclusively. As an example, the U S Census Bureau's 2008 projections indicated Mecklenburg County Black and Hispanic populations of approximately 263,592 and 96,176 respectively. These figures indicate 36% and 114 % increases respectively since the 2000 Census. Growth of these populations in Union County is measurably higher with a 52% increase within the Black population and a 156% increase within the Hispanic population.
- 2. MUMPO's draft roadway projects were overlaid on maps depicting the 2000 Census information.** This was done to help determine where the MPO was directing its resources relative to roadway projects and to discern whether environmental justice communities were being subjected to unreasonable impacts or being denied the benefits of the planned investments. The result of this inquiry will be reported in the ongoing Title VI Public Outreach Study. *(For the maps, see Figures 4-1 through 4-15 in the Map Gallery at the end of this document. Online, see the list of links on page 4-6.)*

- 3. Information on all other transportation modes was collected from MUMPO's transportation planning partners and similarly overlaid on the maps depicting the Census information.** This was done to help ensure that all potential transportation modes affecting environmental justice communities have been captured and, as with road projects, to determine if communities were being subjected to unreasonable impacts or being denied the benefits of the planned investments. Results will be reported in the ongoing Title VI Public Outreach Study. The following lists the modal information collected and analyzed:

Transit

- Charlotte Area Transit System (CATS): existing and proposed bus route; existing and proposed rapid transit (including a proposed streetcar line); existing and proposed neighborhood transit centers

Bicycle

- Charlotte Department of Transportation: Bicycle Plan
- All other municipalities were requested to provide information on bicycle plans adopted by their communities

Greenways

- Mecklenburg County Parks and Recreation Department: existing and proposed greenways; the Carolina Thread Trail
- Mecklenburg County municipalities were requested to provide information on greenway plans independent of the County's
- Union County municipalities were requested to provide their existing and planned greenway information

- 4.** In advance of significant work on the LRTP, considerable work was done to **update MUMPO's database of groups that work with environmental justice communities.** The database continues to be improved and a process is being developed to keep key community contact information up-to-date.
- 5. Grassroots leadership and media contacts were identified and interviews initiated** to determine their views on environmental justice communities' awareness of and knowledge about MUMPO planning processes, distribution of transportation funding and the impact of specific projects on those communities. Focus groups will be formed within targeted areas to gather in-depth information.
- 6. A survey was prepared (in English and Spanish)** that sought information on the level of community knowledge of perceived or actual environmental justice impacts as well as perceived barriers to effective public participation.
- 7. Key individuals working with the Hispanic and Black Communities were interviewed,** including representatives from the Charlotte Mecklenburg Police Department and ENLACE, a monthly roundtable of key Latino organizations and leaders working on key issues and collaborative opportunities within the community. Additional outreach is underway through existing community-based organizations and institutions within environmental justice communities.

■ Initial Findings and Ongoing Efforts

At the heart of environmental justice considerations is the equitable distribution of environmental impacts — positive and negative — throughout a project area without undue effects on low-income and minority communities. While an in-depth analysis of transportation investments, initiatives and plans is currently underway, based on knowledge of 2000 population distribution by race and income within the MUMPO planning area, it appears that:

1. Transportation projects have been initiated:
 - Without undue burden of impacts on environmental justice communities;
 - With equitable benefit of investments throughout the planning area, including environmental justice communities; and
 - With planning considerations intended to distribute future benefits equitably and without consideration of race or income.
2. Environmental justice communities — particularly Hispanic and Black communities — are often unfamiliar with transportation planning processes in general and, consequently, unaware of MUMPO's role in the planning process for specific transportation projects. As a result, those community members have not had or taken the opportunity to play a role in decision-making processes.
3. Initial one-on-one community interviews indicated that MUMPO must do a better job of educating and reaching out to low-income and minority communities regarding transportation initiatives. Based on Hispanic and Black communities' previous response to MUMPO outreach efforts, traditional outreach initiatives — ads printed in local newspapers (even when printed in Spanish), community signs advertising community meetings and inserts in utility bills — have not provided the desired result. MUMPO will need to implement non-traditional means for sharing public information with the Hispanic community in particular — and to some extent with the Black community — including radio, non-cable public information television channels, institutional resources including faith organization, fraternal organizations, etc.
4. Efforts must be made to work with environmental justice communities to develop methods by which the impacts of transportation investments can be ascertained. The use of print and graphics to "tell MUMPO's story" in ways that cross ethnic or cultural lines will be key in helping environmental justice communities understand the relevance to their community's quality of life.

■ Next Steps

Completing MUMPO's Title VI Public Outreach Plan will provide MUMPO officials and staff the following:

- ▶ A succinct, culturally sensitive educational handout will be designed to be shared within environmental justice communities that explain what transportation planning processes are and why they are important to those communities. The handout should be easy to replicate and made available at key locations along key transportation corridors.
- ▶ A series of grassroots focus groups will be held over a four-week period to share MUMPO information, further determine impacts of MUMPO projects on a broader array of environmental justice communities and to foster trust between MUMPO staff and environmental justice community leadership — furthering the likelihood of participation in future projects.
- ▶ Working with environmental justice communities, analysis methods and procedures will be prepared to complete a final evaluation of transportation investments, initiatives and plans to fully assess if environmental justice communities have been, or may be in the future, disproportionately impacted, and to determine if the benefits of the investments, initiatives and plans have been equitably distributed throughout the planning area.
- ▶ Methods to reaching out to low-literacy populations.
- ▶ A complete database and standard public outreach planning process manual that will include:
 - names and contact information for key individuals, organizations and institutions as well as grassroots leadership within the Hispanic and Black communities;
 - contacts within the minority business community;
 - Hispanic and Black media outreach contacts, pricing, schedules and formatting criteria as available;
 - a suggested meeting format that may be replicated (for example, it may be important to have a respected and recognized member of the Hispanic community as an introductory speaker at MUMPO meetings);
 - a process for dealing with and following up on community concerns that may not be germane to the immediate MUMPO project, but are of concern to the community (follow-up on these questions will build community trust);
 - examples of handouts in English and Spanish;
 - suggested “give away materials” that will visually link the community participants to the project or process that has been reviewed; and
 - a process for meeting evaluation and follow-up with participants on pertinent questions or concerns about the MUMPO project.

Targeted completion date: December 2010

■ Conclusion

While the principles of environmental justice have been in place since the 1964 Civil Rights Act, their practice did not have the strength of an Executive Order until 1994. During the sixteen years since Environmental Justice has been a major national initiative, much has changed. Still, communities traditionally excluded from planning processes and unfairly burdened by negative environmental impacts may be a long way from (1) knowledge of public planning processes, (2) understanding the importance and necessity of their participation in those processes and, most importantly, (3) trusting those processes should they become involved.

MUMPO has committed to taking the lead in changing that paradigm by:

- taking a thorough look at the impacts of their transportation investments, plans and initiatives to date;
- designing and implementing a public outreach program that is inclusive and culturally sensitive;
- developing a process for and practice of connecting with key grassroots leadership, organization and institutions within minority and low-wealth communities to insure effective public outreach in those communities; and
- standardizing these processes and practices for duplication and use in future MUMPO projects.

► Maps from the Environmental Justice chapter are located in the Map Gallery at the end of the document, including:

Low-Income Population

- [and Fiscally Constrained Projects](#) [Figure 4-1](#)
- [and CATS Corridor System Plan](#) [Figure 4-2](#)
- [and Bicycle and Greenway Projects](#) [Figure 4-3](#)

Black Population

- [and Fiscally Constrained Projects](#) [Figure 4-4](#)
- [and CATS Corridor System Plan](#) [Figure 4-5](#)
- [and Bicycle and Greenway Projects](#) [Figure 4-6](#)

Hispanic Population

- [and Fiscally Constrained Projects](#) [Figure 4-7](#)
- [and CATS Corridor System Plan](#) [Figure 4-8](#)
- [and Bicycle and Greenway Projects](#) [Figure 4-9](#)

Asian/Pacific Islander Population

- [and Fiscally Constrained Projects](#) [Figure 4-10](#)
- [and CATS Corridor System Plan](#) [Figure 4-11](#)
- [and Bicycle and Greenway Projects](#) [Figure 4-12](#)

American Indian/Alaska Native Population

- [and Fiscally Constrained Projects](#) [Figure 4-13](#)
- [and CATS Corridor System Plan](#) [Figure 4-14](#)
- [and Bicycle and Greenway Projects](#) [Figure 4-15](#)

5.0

PLANNING FACTORS

Under the former *Intermodal Surface Transportation Efficiency Act* (ISTEA), all MPOs were required to consider 15 planning factors in the development of transportation plans and programs. The enactment of the *Transportation Equity Act for the 21st Century* (TEA-21) reduced the number of planning factors to seven.

Most recently enacted in 2005, the *Safe, Accountable, Flexible, Efficient Transportation Equity Act for Users* (SAFETEA-LU) added emphasis in two areas: security and the environment. *Security* is now an additional, stand-alone planning factor, signaling increased importance. *Environment* is expanded to coordinate transportation with the planning of sustainable development and growth patterns. Accordingly, MPO considers projects and strategies that will address the following factors:

5.1 Economic Vitality

The Mecklenburg Union MPO has worked extensively over the years with NCDOT and other state and federal agencies on transportation projects that enhance the economic prosperity of the area.

A significant development is the formation of a regional transportation alliance involving the four MPOs and two Rural Planning Organizations (RPOs) in the Charlotte Region. The new organization—CRAFT (Charlotte Regional Alliance for Transportation)—is committed to ensuring that the economic growth and vitality of the entire area will be complemented by a transportation system developed in a regional matter.

The alliance marks a coordinated effort to guide the Charlotte region in broader planning to serve the rapidly merging urban areas. The four MPOs in the Charlotte region—Cabarrus-Rowan, Gaston, Rock Hill-Fort Mill and Mecklenburg-Union—have signed a Memorandum of Agreement for working cooperatively on regional transportation issues and have begun meeting on an adopted schedule. The two RPOs, Lake Norman and Rocky River, were added to CRAFT in 2004. Together, these six organizations formally represent the vast majority of the region.

Also important is the completion of I-485 and widening of I-77 and I-85. These freeways will continue to provide important access to other parts of the country and benefit the MUMPO area economy by improved transportation for people and goods, and by increased tourism.

The implementation of an efficient transportation system that includes mass transit and bicycle and pedestrian facilities, such as greenways, will preserve the area's reputation as a desirable place to locate businesses.

5.2 Safety

MUMPO takes a number of measures to increase the safety of the transportation system for all users. The Charlotte Department of Transportation (CDOT) produces an annual inventory of high accident locations to identify where there may be a need for safety improvements. Projects are then developed to improve the conditions. NCDOT also conducts similar studies and has a safety program to address these needs.

MUMPO also supports the implementation of other projects to ensure the safety and security of its users. These include:

- the construction of median guard rails on freeways,
- the replacement of deficient bridges and structures,
- the construction of sidewalks on all non-freeway road projects,
- the addition of bike lanes on roadways, and
- programs to improve safety at school crossings.

5.3 Security

When SAFETEA-LU became law in 2005, security became a separate planning factor required in the state and metropolitan planning process. This was the first transportation reauthorization after the September 11, 2001 terrorist attacks, and the security of the nation's transportation infrastructure was a key goal. The Charlotte region is a large urban area with important infrastructure, facilities, utilities and population and employment centers essential for security planning.

Securing and managing incidents at these sites is addressed by a range of organizations throughout the region, including transportation and law enforcement agencies. Various safety and security plans address interagency coordination and areas of responsibility. The transportation plans include strategies to reduce crashes and the transportation impacts of such incidents, while law enforcement and emergency management plans generally focus on managing incidents after they occur, including evacuations and security property and people.

5.4 Accessibility and Mobility Options

Increasing the accessibility and mobility options available to people and for freight is one of the most important objectives of MUMPO. This is achieved by:

- integrating land use and transportation planning,
- providing the necessary resources to enhance the existing transportation system,
- expanding the existing transit system,
- implementing fixed route mass transit options, and
- expanding shipping facilities at Charlotte/Douglas International Airport.

Land use and transportation policies are being instituted that support transit ridership, walking and bicycling—and reduce dependency on the automobile. More compact development patterns at activity centers and along transit corridors will make the transit system more economically self-sustaining. In neighborhoods, transit-oriented development that emphasizes a mix of

uses and easy pedestrian access to shopping and services could reduce the need to drive. The Mecklenburg-Union urban area has been a major shipping hub for the Southeast. Continued support of this hub is provided through widening and maintaining the interstate system and improved access to the multi-modal facility at Charlotte/Douglas International Airport and other intermodal facilities in the area.

5.5 Environmental Protection, Energy Conservation and Sustainable Development

MUMPO is committed to protecting and enhancing the environment, promoting energy conservation and prioritizing investments that encourage more sustainable growth patterns.

The member governments within the urban area look to protect their important resources by enacting environmentally sensitive land use policies, developing transportation choices and promoting air quality education programs.

Land use policies include buffers around the rivers and streams, impact fees for runoff caused by impervious surfaces, and roadway designs that mitigate runoff impacts in critical watershed areas. Land use decisions are being made to direct growth to reduce travel demand, which in turn leads to energy conservation and reduced pollutants.

5.6 System Integration and Connectivity

MUMPO has developed and supports programs and projects that enhance the integration and connectivity of a multi-modal transportation system.

- ▶ The proposed intermodal facility at the Charlotte/Douglas International Airport provides a critical link for movement of goods between rail, highway and air.
- ▶ Ambitious transit plans provide opportunities for people to enjoy a more mobile system that allows them to conveniently access many parts of the urban area.
- ▶ Park-and-Ride Lots enable auto commuters to access the current bus and rail system and will be available for the expanding rapid transit system.
- ▶ Bicycle racks on buses allow people the flexibility to access bus stops by bike, improving the attractiveness of the system.
- ▶ MUMPO's policy to add sidewalks to non-freeway roadways enables citizens to leave their vehicle at home for short trips.
- ▶ Mecklenburg County's growing greenway system provides connectivity for pedestrians and bicyclists between neighborhoods, schools, shopping areas and employment centers.

The Charlotte Department of Transportation and other MUMPO members also emphasize connectivity between neighborhoods, whether vehicular, bicycle, pedestrian—or a combination of the three. Providing and expanding connectivity creates a linked network that can minimize congestion and reduce unnecessary trips on thoroughfares.

5.7 Efficient System Management and Operations

■ Congestion Management Process

In 1994, the Mecklenburg-Union Technical Coordination Committee prepared a Congestion Management Study in cooperation with the North Carolina Department of Transportation (NCDOT). The study was implemented in 1995 and identifies improvements to reduce traffic congestion at intersections throughout the planning area. Projects are selected for inclusion in the City of Charlotte's Capital Improvement Program or the NCDOT Transportation Improvement Program. The City continues to coordinate with NCDOT on this effort through installation and monitoring of coordinated traffic signals and video surveillance cameras.

■ Traffic Monitoring System

The City of Charlotte assists NCDOT by collecting site-specific information on Highway Performance Management System sample locations. Both the City and the State complete counts at these locations. In a typical year, the City of Charlotte collects the following travel data throughout the planning area: up to 500 48-hour automatic traffic counts; up to 250 12-hour manual traffic counts; and approximately 50 radar speed studies and travel time surveys.

In addition, the City of Charlotte collects speed and classification automatic traffic counts and performs studies on these data. Each September, the City conducts vehicle occupancy surveys at 23 locations in the Uptown area (Charlotte's central business district). The City annually updates Uptown's off-street parking inventory and peak-hour demand for parking. This includes verifying the existing inventory of parking supply, identifying new parking supply and collecting information on parking rates. The City is also implementing a vehicular way-finding system in the Uptown area.

■ Safety Management System

The Charlotte Department of Transportation (CDOT) compiles accident data on all streets within Charlotte, except the freeways. These data are used to identify hazardous locations. CDOT holds monthly safety meetings to develop low-cost safety treatments to reduce accidents at problem locations. The safety improvements might include supplemental signing, pavement marking revisions, signal timing changes, turn prohibitions, and pedestrian and traffic safety educational campaigns. The City also works with the Traffic Safety Unit of NCDOT's Traffic Engineering Branch in implementing safety improvements on the State highway system.

■ Traffic Operations Plan

The non-capital measures above are complemented by a program of capital improvements. CDOT develops a Traffic Operations Plan every two years that describes capital projects designed to improve safety at hazardous intersections. This plan lists the City's high-accidents locations and high-congestion locations, and recommends improvement measures. The Traffic Operations Plan is used to select intersection and safety improvement projects for inclusion in the City's Five-Year Capital Improvement Program (CIP) or the North Carolina Statewide Transportation Improvement Program (STIP).

5.8 Preservation of the Existing System

MUMPO has worked with NCDOT for many years in establishing and maintaining a transportation planning program that incorporates a standard set of planning principles as recommended by the Federal Aid Highway Act of 1962. The planning principles require the development of a safe and efficient transportation system by:

- maximizing utilization of the existing facilities,
- increasing operational efficiency and altering travel demands when appropriate, and
- minimizing adverse impacts to the natural, social and economic environments.

The preservation of the system includes preserving or even improving both the safety and capacity of the existing system through the use of access management principles. The Transportation Research Board and Institute for Transportation Engineers have promulgated extensive research-based guidelines for access management that are used by local and NCDOT agencies in the review of land development proposals. Efforts are made for early collaboration between the local jurisdiction and NCDOT to ensure that the Thoroughfare Plan hierarchies are considered in access approvals.

The highest manifestation of this collaboration is the *NC 73 Transportation/Land Use Plan* and subsequent NC 73 Council of Planning formed to further the goals of the corridor plan. This 2004 plan, a first in North Carolina, covers a 35-mile long corridor of NC 73 with five municipalities, three counties and two NCDOT divisions. Developed collaboratively with the three Chambers of Commerce in the area, a key component of the plan is using access management to preserve the public's transportation investment in the corridor while furthering the land use goals of the individual communities. The NC 73 Council of Planning meets quarterly to share best practices and ensure that the document and collaboration can evolve and stay relevant.

The Mecklenburg-Union urban area is also committed to providing the necessary resources for maintaining and preserving the existing and future transportation system.

6.0

SAFETY AND SECURITY

Introduction

SAFETEA-LU, enacted in 2005, expanded the number of planning factors from seven to eight by splitting safety and security into two separate factors. Before SAFETEA-LU, the factor for safety and security read: “Increase the safety and security of the transportation system for motorized and non-motorized users.” Under SAFETEA-LU, the factor now reads: “Increase the safety of the transportation system for motorized and non-motorized users” and “Increase the security of the transportation system for motorized and non-motorized users.” The intent of this change was to emphasize the importance of safety, and to acknowledge the special concerns regarding security in the wake of the events of September 11, 2001.

In the past, discussions of safety and security were woven into the Long-Range Transportation Plan’s modal chapters (highway, transit, pedestrian, bicycle, freight and aviation). This *2035 Long-Range Transportation Plan* consolidates the safety and security components in a single chapter.

6.1 Safety

Safety has long been a primary concern of transportation system management, maintenance and system expansion. SAFETEA-LU places a greater emphasis on safety at the planning (LRTP) level.

One way this emphasis is reflected is in linkages to the North Carolina Strategic Highway Safety Plan (SHSP). In 2003, North Carolina found that regardless of the continuous enhancements that had been made in the area of highway safety, there was still a need to better address the issues. To further reduce fatalities and better coordinate with agencies outside of NCDOT, the North Carolina Executive Committee for Highway Safety (ECHS) was charged to identify, prioritize, promote and support all emphasis areas in the American Association of State Highway and Transportation Officials (AASHTO) Strategic Highway Safety Plan. The ECHS is comprised of experts in all disciplines related to highway safety.

Furthermore, North Carolina completed its Strategic Highway Safety Plan in 2006 (and updated it in 2007) as required by the federal SAFETEA-LU and based on AASHTO’s SHSP. As projects are developed, elements from the SHSP will be incorporated by using “access management strategies” to preserve capacity and enhance safety. Some typical access management strategies include shared curb cuts, use of medians, and paved shoulders. MUMPO and its member governments are aware of the value of these strategies and seek to include them in projects wherever possible.

The ultimate goal of the ECHS is to develop and implement short and long term, sustainable strategies that will reduce the number of fatalities and injuries on North Carolina highways. The key specific goal of the SHSP is to reduce the fatal rate to 1.0 fatality per 100 million vehicular miles traveled. This rate was to be accomplished by 2008. As recently as 1994 this rate was 1.99 fatalities per 100 million vehicular miles traveled. By 2003 this had fallen to 1.66, and has continued to decline, but North Carolina still has not met the goal. North Carolina is making progress in achieving this goal, but more work remains to be done.

MUMPO formally considers safety in its project ranking process (approved November 14, 2007) by looking to reduce or remove potential for crashes and to increase access control. This is accomplished by assigning points to projects that widen roads, install medians, replace intersections with interchanges or roundabouts, or provide other safety improvements.

AASHTO Strategic Highway Safety Plan: Key Areas of Emphasis

(American Association of State Highway and Transportation Officials)

* Provisions that are included or supported in the LRTP

Drivers

- graduated licensing for young drivers
- ensuring drivers are licensed and fully competent
- sustaining proficiency in older drivers
- curbing aggressive driving
- reducing the number of impaired drivers
- keeping drivers alert
- increasing driver safety awareness
- increasing seat belt usage

Special Users

- making walking and street crossing safer*
- ensuring safer bicycle travel*

Vehicles

- improving motorcycle safety and increasing motorcycle awareness
- making truck travel safer*
- Increasing safety enhancements in education and outreach activities

Highways

- reducing vehicle-train crashes
- keeping vehicles on the roadway
- minimizing the consequences of leaving the road
- improving the design and operation of highway intersections*
- reducing head-on and across-median crashes
- designing safer work zones

Emergency Medical Services

- enhancing emergency medical capabilities to increase survivability
- management
- improving information and decision support systems
- creating more effective processes and safety management systems*

6.1.1. Highways

The goal of the Strategic Highway Safety Plan is to reduce the number of fatalities and to decrease the economic impact from highway-related accidents. This goal is incorporated in this MUMPO 2035 Long-Range Transportation Plan.

■ Speed and Safety

The Charlotte Department of Transportation (CDOT) conducts a Speeding Awareness Campaign, and also identifies speed-related crash corridors to target and raise awareness of problem roadway segments and intersections.

Segments of roads identified as a result of higher-than-average accident rates may be included in Charlotte or NCDOT project development lists. The types of improvements implemented vary from small-scale steps, such installation of signs and/or markings, to intersection improvements and roadway corridor projects.

NCDOT implements a safety program as well, through coordination between Division 10, the Incident Management Assistance Program (IMAP), law enforcement, and MPO member communities. Such improvements are reflected in the Transportation Improvement Program as well as in the day-to-day work of field forces.

■ Congestion Management

The recently-approved MUMPO Congestion Management Process (CMP) examines the current and planned future roadway network, identifies causes of congestion, and explores options for reducing congestion. In addition to examining capacity constraints, it identifies methodologies for improving system efficiency and providing modal choices.

Safety is a consideration in the CMP, partly because roadway incidents are a significant source of traffic congestion. The CMP and LRTP recommend continued use of incident management patrols, coordination with law enforcement agencies, and implementation of safety and mobility projects by the MUMPO municipalities and the NCDOT to respond to safety trends and issues.

Additional municipal and NCDOT strategies aimed at increasing the efficiency of the transportation system without adding additional capacity to the roadways include:

- expansion of transit operations,
- Advance Traveler Information Systems and Variable Message Signs (VMS), and
- enforcement of “Move Over” (G.S. 20-157) and “Fender Bender” (G.S. 20-166(c2)) incident management laws

■ Traffic Safety Plan

MUMPO, in coordination with the Charlotte Area Transit System and Mecklenburg County, has implemented several other transportation demand management strategies to reduce the number of single-occupant vehicles on the roads. Since 1998, the Charlotte City Council has provided funding in the Capital Investment Plan (CIP) for a Pedestrian and Traffic Safety Plan and

its implementation. The goal of this Traffic Safety Plan is to integrate engineering, enforcement, and education activities into a comprehensive plan to:

- 1) reduce the number of motor vehicle crashes and injuries;
- 2) increase pedestrian safety;
- 3) improve traffic safety;
- 4) ensure traffic law compliance;
- 5) modify targeted behaviors of drivers, pedestrians, and bicyclists; and
- 6) research, evaluate, and implement new traffic safety technologies.

■ Pedestrian and Bicycle Safety

MUMPO has developed a plan to address the infrastructure and safety needs of bicyclists and pedestrians through several municipal bicycle, greenway, and pedestrian plans. The majority of MUMPO's population is covered by the 2008 Charlotte *Bicycle Master Plan* and Mecklenburg County. The City of Charlotte is nearing completion of a Sidewalk Master Plan. Together, these plans analyze the area's needs and include recommendations and action steps to enhance the safety of bicyclists and pedestrians. Actions taken to date include:

- implementation of prioritized sidewalk projects;
- a new bicycle map;
- bicycle routes;
- bicycle and sidewalk improvements included in local and state roadway projects;
- detailed recording and analysis of bicycle and pedestrian accidents; and
- local government/MPO participation in bicycle and pedestrian safety.

6.1.2 Transit

■ Mecklenburg County

The Charlotte Area Transit System (CATS) Office of Safety and Security oversees the security operations of the CATS transit facilities and vehicles and manages the safety review of all plans for CATS capital improvements such as light rail. Team members are certified in Crime Prevention Through Environmental Design (CPTED) procedures and conduct design reviews for all CATS capital facilities.

The General Manager for the Office of Safety and Security serves as the Chairperson of CATS' Safety and Security Review Committee. As such, the General Manager oversees the safety certification process with the FTA and ensures that the design criteria address the requirements of the **System Safety Program Plan (SSPP)**.

The SSPP for CATS was created in May 2002, and updated in November 2008, with approval in February 2009. Through this plan CATS complies with the State Rail Safety Oversight Rule for rail incidents/accidents (49 CFR 659) and the U.S. Department of Homeland Security Rule affecting transit systems (49 CFR 1580.)

The Office of Safety and Security is actively engaged in efforts to improve and reduce security threats to transit patrons and employees. The Office operates under a set of Standard Operat-

ing Procedures that are updated on an annual basis. All CATS employees are certified under a Transit Worker Identification Certification program and are identified with badges that provide access to the CATS facilities in which they work.

CATS set a safety objective as part of the City of Charlotte's FY 2008 Business Scorecard – and met that objective. It called for a vehicular accident rate target of 0.56 (all modes preventable per 100,000 miles); the actual FY 2008 rate was 0.40.

The CATS organization has a comprehensive **Emergency Response Plan (ERP)** referred to as Charlotte Area Transit System Emergency Response Plan. The plan is used to guide all activity and response during a system emergency or community event.

CATS will conduct or participate in two emergency drills annually. The drills may include a full scale evacuation of the system and a Table Top exercise. Community first-responders including the Charlotte Fire Department, Charlotte Mecklenburg Police Department, local FBI, NCDOT, and Charlotte Mecklenburg Emergency Management may assist the transit system in planning, coordinating, and training to prepare for the drills.

CATS has adopted the **Incident Command System (ICS)** structure to respond to and manage an emergency event. Management staff has been trained on ICS and will receive periodic refresher training. Vehicle operators may also receive training on ICS. Several CATS managers and supervisors have received certification for National Incident Management System (NIMS) training through Federal Emergency Management Agency (FEMA).

The SSPP will be reviewed and, if needed, updated annually or according to the following criteria:

- significant change in service, defined as system expansion, extended service, or change in the operation plan;
- significant change in service equipment, facilities, or vehicles;
- significant change in management or organizational change and reassignment of functional responsibilities which affect operations and/or safety;
- significant change in safety policies, goals or objectives;
- within 30 days of receiving change in regulatory requirements;
- occurrence of a significant event or incident that warrants possible revision of the SSPP; or
- audit results, on-site reviews, or changing trends in incident/accident data.

CATS Office of Safety and Security staff are also members of a number of committees that coordinate law enforcement and safety activities in the Charlotte-Mecklenburg region and within North Carolina, including: the Fire Life Safety Committee, the Federal Transit Administration's (FTA) roundtable related to transit and terrorism, and the North Carolina Joint Terrorism Task Force.

In addition to the transit facilities and vehicles under CATS' oversight, this LRTP also includes a safety goal under the *Freight Element* (Chapter 11.1.6). Specifically, the goal is to provide a safe freight transportation system that sustains or improves existing levels of freight access and mobility.

The LRTP advances this freight safety goal in two principal ways: (1) addressing roadway operational issues on routes receiving significant freight movement, including roadway geometry, intersection configurations and capacity; and (2) working closely with the NCDOT Rail Division on planning studies and project development activities for rail safety projects, including rail grade-separations at targeted locations.

■ Union County

The Union County Public Transportation System (UCPTS) is currently (as of late 2009) updating its safety plans to comply with state and federal regulations. The system is primarily involved in human-services delivery, with passengers picked up on a demand-response basis.

The 2009 Union County Emergency and Security Plan for Transit Vehicles plan is designed to cover various transportation emergencies, including: traffic accidents, fires, severe weather, bomb threat, civil disturbance, violence or a mechanical breakdown. These plan provisions cover events on or involving UCPTS vehicles, so their policies and procedures are not listed in detail in the plan document.

6.2 Security

When the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy For Users (SAFETEA-LU) became law in August, 2005, security became a separate planning factor required in the state and metropolitan transportation planning process. This was the first transportation reauthorization after the September 11, 2001 terrorist attack, and security of the nation's transportation infrastructure was a key goal.

The Charlotte region is a large urban area with important infrastructure facilities, utilities, and population and employment centers essential for security planning. Securing and managing incidents at these identified sites is addressed by a range of organizations throughout the region. These organizations include transportation and law enforcement agencies. Their relevant plans and responsibilities are described in detail in the following sections.

6.2.1 Highways

The Strategic Highway Network (STRAHNET) system of public highways provides access, continuity, and emergency transportation of military personnel and equipment. The 61,000 mile system, designated by the Federal Highway Administration in partnership with the Department of Defense, comprises about 45,400 miles of Interstate and defense highways and 15,600 miles of other highways. STRAHNET is complemented by about 1,700 miles of connectors — additional highway routes linking more than 200 military installations and ports to the network. Most large military convoys use the Strategic Highway Network.

STRAHNET roadways are designated for use in times of rapid mobilization and deployment of armed forces. In the MUMPO Urban Area there are four STRAHNET routes and no connectors. The STRAHNET routes are I-77, I-85, I-485, and US 74 from I-485 east in Union County. Any

incident response strategies for these facilities would be covered in the NCDOT SHSP, although these incident response strategies are not specific to STRAHNET facilities.

6.2.2 Disaster Preparedness

■ Mecklenburg County Office of Emergency Management

Charlotte-Mecklenburg Emergency Management Office (CMEMO) is a local governmental agency which coordinates large-scale emergency situations in Charlotte and Mecklenburg County. The agency assists emergency response departments with specialized needs and provides detailed planning procedures for incidents requiring multi-agency participation.

The CMEMO operates as a division of the Charlotte Fire Department, and develops and maintains disaster plans for the area. It also works to prepare residents, businesses, industries, and governmental agencies for all types of hazards and emergencies.

Disaster plans for the area are developed in coordination with transportation, law enforcement, and operational agencies. These plans address issues such as evacuation, containment, and first-responder actions, and are grouped under the heading of the **Charlotte-Mecklenburg All Hazards Plan** (CMAHP). This plan has identified critical facilities and transportation system elements for inclusion in the plan and its strategies for appropriate response to incidents.

The CMEMO does not have an evacuation plan covering the entire county with designated routes and operational control of the designated routes. The CMEMO has analyzed its transportation network and other evacuation plans and determined that an evacuation is not adversely affected if citizens simply use all available routes to vacate an area. The CMEMO will simply close off the affected area and instruct citizens to leave the area.

The specific section of the CMAHP most relevant to this LRTP is the Transportation Support Service Function, found in Annex D of the CMAHP. This service function has two basic areas of responsibility: (1) to provide transportation during times of major emergencies or disasters, and (2) to provide transportation for isolated conditions such as traffic accidents with multiple injuries or evacuation of day care facilities, etc. In either case, this function is to move people from a danger area or zone to a shelter or safe area. In addition, this function will provide assistance for the evacuation or movement of disabled persons.

The departments and agencies assigned this function and responsibility include:

- Charlotte Area Transit System (CATS) buses
- Charlotte-Mecklenburg School System (CMS) buses
- City of Charlotte vehicles
- Mecklenburg County vehicles
- City and County-special equipped vehicles

These operations will be coordinated by the CMEMO, which has established lines of communication and authority with CDOT, CATS, and NCDOT. The CMEMO conducts drills of these plans on as-needed basis to rehearse for specific events, which results in annual rehearsals at a minimum.

■ City of Charlotte

The City of Charlotte restricts access to design drawing plans, aerial photography, and similar documentation of public infrastructure to only those individuals and organizations that require this information in the conduct of their business with the City and upon demonstration of such need. Public infrastructure includes water and sanitary sewer systems, storm water systems, public buildings, roadways and roadway bridges, telecommunication and data communication networks, and public security plans. The NCDOT observes a similar infrastructure data policy.

■ Charlotte-Mecklenburg Police Department

The Charlotte-Mecklenburg Police Department (CMPD) has developed a **Charlotte Center City Evacuation Plan (CCCEP)** for the Charlotte Central Business District (CBD). This plan was created in 2004, and is currently being updated to reflect the recent addition of the CATS light-rail line. CATS and Charlotte Department of Transportation (CDOT) are both participating in the update. This plan currently identifies routes to use for an evacuation out of Center City. Evacuees may drive or walk out of Center City. There are identified assembly areas on the perimeter of the CBD for pick-up by CATS and CMS buses. The buses will then deliver evacuees to designated shelters.

■ Union County Office of Emergency Management

The Office of Emergency Management (OEM) has many of the same roles and responsibilities as the Charlotte-Mecklenburg Emergency Management Office. They conduct regular disaster exercises with area emergency management agencies, in coordination with FEMA.

Union County has an **Emergency Operations Plan**, adopted in 2004. This plan is maintained by the OEM, which is a department of Union County. This plan is scheduled to be updated in late 2009, which is required due to the five-year update schedule of the plan. This plan includes checklists for media contacts, inter-agency coordination, and command and control. This plan is tested at least tri-annually through table top or practical exercises.

Emergency situations may require evacuation of all or part of the County. Small-scale, localized evacuations may be needed as a result of a hazardous materials incident, major fire or other incident. Large-scale evacuation may be needed in the event of an impending hurricane.

The OEM has a pragmatic approach to an evaluation process. It has identified several highway routes allowing evacuation from various parts of the County. These include U.S. 74, U.S. 601, N.C. 16, N.C. 75, N.C. 84, N.C. 200, N.C. 205, N.C. 207, N.C. 218, and N.C. 522. The OEM expects the majority of residents to drive private vehicles during an evacuation, but Union County Transportation and Union County Public Schools will provide limited public transportation during emergency incidents.

Union County also serves as a "host" county to the Catawba Nuclear Site, located in York County, South Carolina. Should an accident occur at the Catawba Site, residents within a 10-mile radius of the site would be evacuated to host areas. Union County is responsible for receiving evacuees and making sure their needs are met. The 4,000 York County evacuees designated for Union County would use New Town Road (SR 1315) to travel to the host area, Marvin Ridge Middle School and High School.

Disaster Preparedness Recommendations

1. Continue use of incident management patrols, coordination with law enforcement agencies, and implementation of safety and mobility projects by the City of Charlotte, Mecklenburg County, Union County and the NCDOT to respond to safety trends and issues.
2. Address roadway operational issues on routes receiving significant freight movement, including roadway geometry, intersection configurations and capacity.
3. Encourage appropriate agency participation in any disaster exercises to strengthen communication and coordination protocols.
4. Work closely with the NCDOT Rail Division on planning studies and project development activities for rail safety projects, including rail grade separations at targeted locations.
5. Transportation and operational agencies should continue to coordinate consistent with the recommendations of the *Mecklenburg All Hazards Plan*, *Center City Evacuation Plan*, and the *Union County Emergency Operations Plan*.
6. Transportation agencies should ensure evacuation signage is consistent with current plan recommendations.

Source Documents:

- North Carolina Department of Transportation Strategic Highway Safety Plan, 2007
- Mecklenburg-Union Metropolitan Planning Organization Long-Range Transportation Plan Roadway Ranking Methodology, 2007
- Mecklenburg-Union Metropolitan Planning Organization Congestion Management Process, 2009
- Charlotte Area Transit System System Safety Program Plan, 2009
- Charlotte-Mecklenburg Police Department Center City Evacuation Plan, undated
- Charlotte-Mecklenburg All Hazards Plan, 2008
- Union County Emergency Operations Plan, 2004
- Union County General Operations Guidelines in Support of the Catawba Nuclear Site, 2004
- Union County Transportation Emergency and Security Plan for Transit Vehicles, 2009

7.0

CONGESTION MANAGEMENT

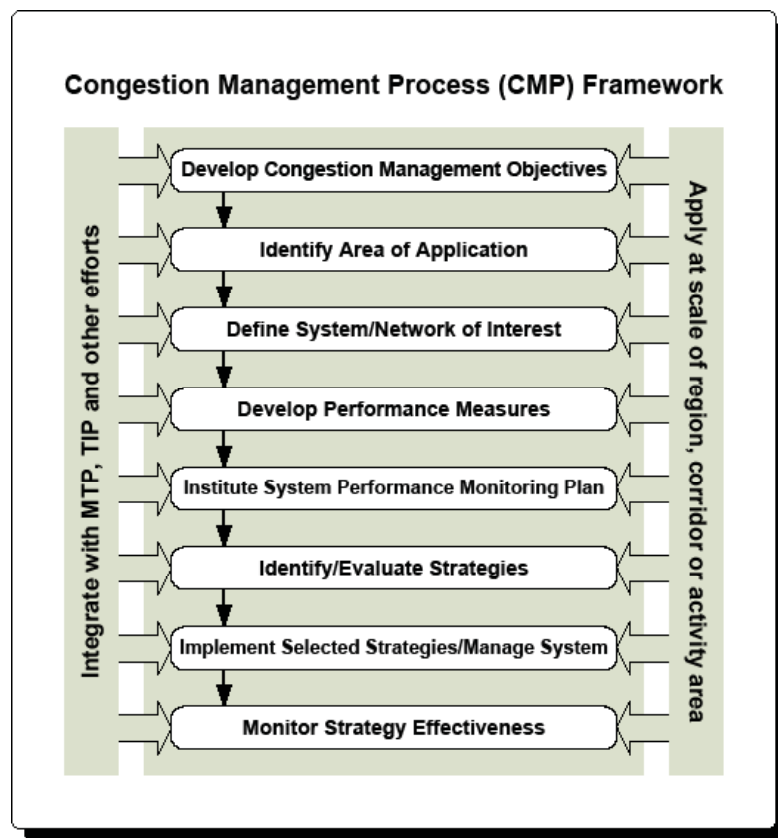
■ Overview

A Congestion Management Process (CMP) is a systematic way to identify, manage, and monitor congestion. It provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs.

Federal regulations require that a CMP be implemented as part of the Metropolitan Planning Organization (MPO) planning process for all Transportation Management Areas (TMAs), which are urban areas with populations greater than 200,000. As part of the MPO process, a CMP:

- helps direct federal funds to the most effective strategies for mitigating congestion;
- must outline serious consideration for the implementation of strategies that provide the most efficient and effective use of existing and future transportation systems;
- give consideration to strategies that reduce single occupant vehicles (SOV) travel and improve existing transportation system efficiency; and
- all capacity-adding transportation improvements, such as widened roadways and new roads, to be funded all or in part by federal funds must be identified in the CMP.

Figure 7-1



The recommendations from the CMP must then be incorporated in the regional planning process, including the Transportation Improvement Program (TIP) and the Long Range Transportation Plan (identified in Figure 7-1 as MTP).

Program elements of the MUMPO CMP comply with federally required elements for a CMP:

- definition of congestion, parameters for measuring the extent of congestion, the area of application, and a targeted CMP network;
- development and use of performance measures;
- establishment of a program for data collection and performance monitoring;
- identification and evaluation of the anticipated performance and expected benefits of appropriate traditional and non-traditional congestion management strategies; and
- identification of implementation responsibilities.

Five objectives governed the development of this Congestion Management Process and should be considered in future updates:

1. The CMP is to satisfy the federal requirements identified above.
2. The CMP is to be considered at the local, MPO and State levels when identifying, ranking, and recommending capacity expansion of either highway and/or transit systems.
3. The CMP should be flexible to meet the changing needs of the region.
4. The CMP should not be overly complex or cumbersome.
5. The CMP is incorporated in the MPO's existing LRTP project ranking system as a function of the Congestion Reduction component of the projects ranking/selection list.

The Congestion Management Program (CMP) is a component of the Metropolitan-Union Metropolitan Planning Organization (MPO) Long Range Transportation Plan (LRTP) as required by federal regulations.

LRTP Goals

The CMP is intended to be a component of the Long Range Transportation Plan and as such is focused on the goals set forth in the LRTP, summarized below.

- ▶ Provide a safe and efficient transportation system.
- ▶ Improve the quality of life for residents of the Mecklenburg-Union MPO area.
- ▶ Provide a transportation system that serves the public with mobility choices, including walking, bicycling and transit options.
- ▶ Provide a transportation system that is sensitive to significant features of the natural and human environment.
- ▶ Provide equitable transportation options for low income and minority neighborhoods.
- ▶ Provide meaningful opportunities for public involvement in the transportation planning process.

Congestion Management Objectives

Consistent with these goals, the objective of the CMP is to develop cost-effective recommendations to address congestion through prescribed mitigation strategies and to ensure that capacity-adding projects are warranted and prioritized through the planning process.

- ▶ Improve the efficiency of the transportation network for all modes.
- ▶ Utilize alternative modes to mitigate congestion where appropriate.
- ▶ Balance the movement of goods and people.
- ▶ Preserve and enhance the existing natural and built environments.

MUMPO will be revising and refining the goals and objectives in the 2012 update of the CMP and developing multi modal performance measures that relate directly to the new goals and objectives. During the development of the plan, the CMP will be incorporated into the plan's public involvement process.

■ Definition of Congestion

Congestion may be defined differently based on relative factors such as geography, population and employment density, recurrence, and travel time delays, to name a few. According to federal guidelines, congestion is defined as

“the level at which transportation system performance is no longer acceptable due to traffic interference. The level of system performance deemed acceptable by State and local officials may vary by type of transportation facility, geographic location (metropolitan area or sub-area, rural area) and/or time of day.”

Similarly, the Transportation Research Board has defined congestion as:

“travel time or delay in excess of that normally incurred under light or free-flow travel conditions.”

Identification of Congestion Problems and Causes

The following are examples of particular congestion problems and causes:

- **Intersection Delay**
Intermittent disruption to traffic flow can be caused by unsynchronized traffic signals, railroad grade crossings, and sign controlled intersections. Drivers experience stops, stop-delays, and longer travel times contributing to congestion, increased fuel consumption, and air pollution. Intersections that experience heavy right and/or left turn traffic movements without dedicated turn lanes contribute to congestion during peak hours.
- **Bottlenecks or Choke Points**
Congestion is often caused by a reduction in the physical capacity of the roadway; for example, the number and width of lanes and shoulders, merge areas at interchange ramps, and roadway alignment (grades and curves).
- **Incidents**
Crashes, breakdowns, debris in travel lanes, and spills can cause congestion during both peak and non-peak travel times.

- **Construction Work Zones**
Construction zones on or near the roadway result in reductions in posted speed limits, the number or width of travel lanes, lane “shifts,” lane diversions, reduction, or elimination of shoulders, and even temporary roadway closures.
- **Inclement Weather**
Weather conditions such as rain, snow, ice, fog, or other environmental factors can affect driver behavior such that traffic flow becomes congested.
- **Single Occupant Vehicle (SOV) Travel**
SOV is the predominant mode of travel within the MUMPO area, and is a major cause of congestion and deteriorating air quality.

Regional Definition of Congestion

For the purpose of establishing a framework and methodology that defines congestion in the MUMPO area, this Congestion Management Program identifies congestion as:

“an increase of 50 percent or greater in travel time between congested travel conditions and free-flow travel conditions along roadway links for the transportation network.”

Using the regional travel demand model, all of the links (roadway segments) that met this definition were identified and further grouped into “*corridors of critical concern*” which generally correspond with the major travel sheds in the region. These corridors are comprised of one or more (parallel) roadways and have a high density of segments that meet the travel time thresholds for the definition of congestion.

In future CMPs the threshold may be adjusted based on any number of dynamic variables including, but not limited to demographic changes, mass transit/rapid transit system improvements, land use restrictions, new congestion problems on recently widened roadways, local policy changes (ordinances, codes, regulations, etc.), and changes to local area planning documents and priorities. Similarly, the threshold could be adjusted based on increased tolerance for travel delay common in growing urban areas.

While there are two primary types of congestion — recurring and non-recurring — the MUMPO CMP focuses on recurring congestion by evaluating travel time changes between peak and non-peak traffic conditions.

“Recurring” congestion tends to be concentrated into short time periods, such as typical morning and evening “rush hours.” This type of congestion is evidenced by excessive traffic volumes resulting in reduced speed and flow rates within the network. Bottlenecks, seasonal traffic, and long-term construction also cause recurring congestion.

“Non-recurring” congestion is generally less predictable in that it is caused by unforeseen incidents that affect driver behavior such as crashes, disabled vehicles, spills, adverse weather conditions, special events, etc. It is recommended that future CMP’s include real time data collection of travel times on the corridors of critical concern and other roadways in the system. These travel time runs will shed light on non-recurring congestion problems and will be incorporated in the CMP accordingly.

■ Define Congested Locations

CMP Network

The planning area for the MUMPO Congestion Management Program (CMP) encompasses all of Mecklenburg and Union Counties which extends beyond the typical planning area for the MPO. This area corresponds to the geography of the region's travel demand model, the primary data source. The network consists of roads that are classified as minor thoroughfare or larger.

Identification of Congested Corridors

From the MUMPO CMP network, each link (or road) was analyzed to develop a universe of corridors of critical concern and "hot spots" where traffic congestion occurs during peak travel times. Congestion was determined by analyzing the travel demand model output data from TransCad to calculate the percent increase in travel time between peak and off-peak periods (congested speeds vs. free flow speeds) for each network link (road segment). This was calculated using the following formula:

$$\frac{\text{Congested Travel Time} - \text{Free Flow Travel time}}{\text{Free Flow Travel Time}} = \% \text{ Change in travel time}$$

In order to capture the most accurate representation of highly congested links in the network and across the various rural and urban regions within the planning area, two different methodologies were applied to the model output data. The model results were then displayed as a shapefile in a geographic information system (GIS). Individual road segments were combined to generate an electronic version of the previously identified corridors. Model results for each link in a corridor (i.e., free flow and congested travel time, traffic volumes) were used to generate descriptive corridors.

To account for network congestion differences between urban and rural conditions, several scenarios were run based on a 50 percent or greater increase in travel time and the top 10 percent of roads in the area with the highest percent change in travel time. The initial run identified corridors on the TransCad maps by connecting multiple road segments with greater than 50 percent increase in travel time. The second, preferred methodology yielded nearly identical results in the North, Southeast, and Southwest Mecklenburg regions as the initial methodology, but also broadened the group of locations represented in Union County. Similar to the initial methodology, corridors were developed by connecting multiple road segments on the TransCad maps. The difference is that *congested corridors* are defined as those ranking in the top 10 percent of all network links with the greatest percent increase in travel time and stratified across each of the four geographic regions.

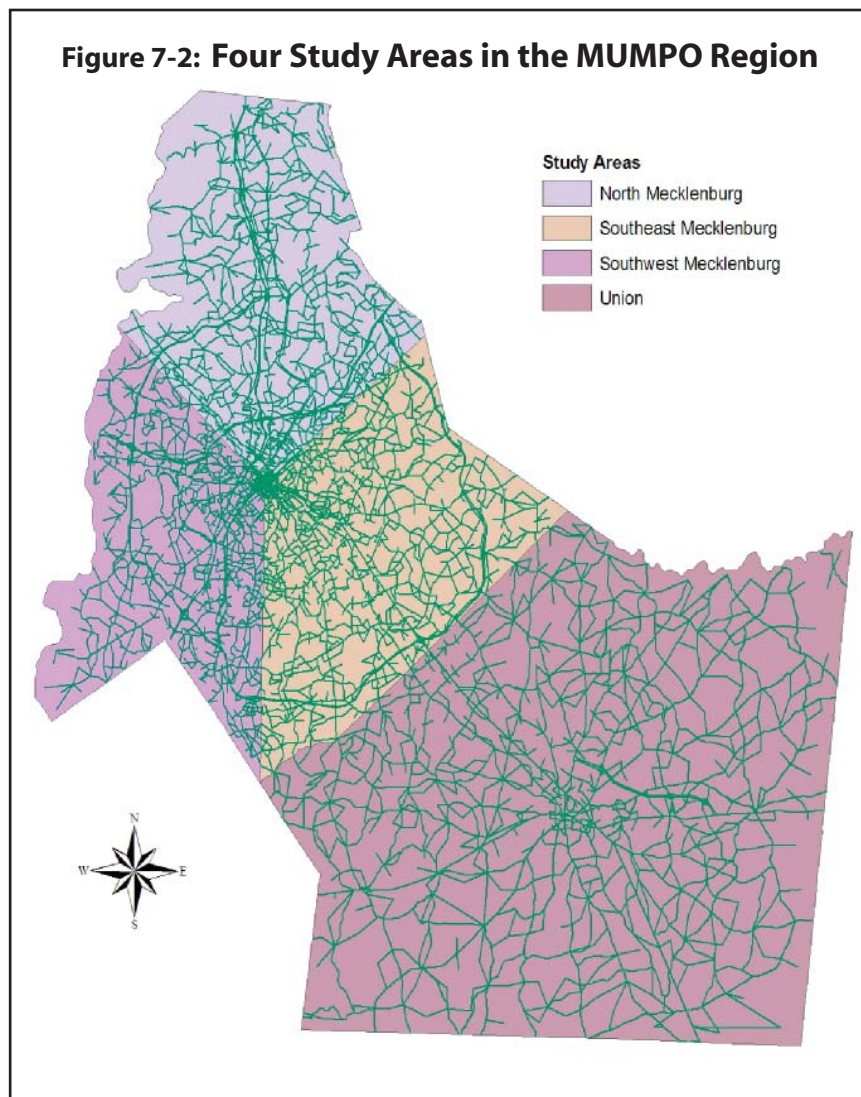
From the entire network of links, those identified as congested for the purpose of this CMP were selected based on the top 10 percent with the greatest increase of travel time for each of four specific geographic regions within the MUMPO planning area. In order to account for the varying physical, demographic, geographic, and development densities, the planning area was divided into the following four regions: Union County, North Mecklenburg County, Southwest Mecklenburg County, and Southeast Mecklenburg County, as shown in Figure 7-2, below.

The roadway network, TAZ data, and Census tract data were further separated into districts.

The TAZs for the study area were aggregated with the AM peak transit matrix (ODH-wyVeh_AMPeak.mtx) into 15 larger areas or districts for both 2010 and 2030.

These districts divide Mecklenburg County into ten equally sized districts and Union County into five equally sized districts.

Additionally, in order to maintain consistency across related planning study documents, the CMP assumes the corridor extents for the area's interstate Highway facilities to be identical to those defined in the Charlotte Region Fast Lanes Study.



Methodology for Calculating Percent Change in Travel Time

To calculate the percent change in travel time by flow, times were compared for free-flow travel and peak AM travel. The variables used for percent change in travel time come from the 2010 Road Network file (RegNet10.dbd) and the AM data file (Assn_AMPeak.bin). These data were joined on the ID field in the RegNet10 file and the data field in the Assn_AMPeak file. The TTfreeAB field was chosen for the free-flow AB travel time from the RegNet10 file, and AB_Time was chosen as the AM peak travel time from the Assn_AMPeak file.

The percent change was calculated using the formula:

$$(((y2-y1) / y1)*100)$$

The percent change in travel time AB flow formula:

$$(((AB_Time - TTfreeAB) / TTfreeAB)*100)$$

The fields used to calculate the BA percent change in travel time were TTfreeBA and BA_Time. The percent change in travel time BA flow formula:

$$(((BA_Time - TTfreeBA) / TTfreeBA) * 100)$$

Values for these areas were then plotted to the map using the two different travel time change thresholds described above. The same process was used for the 2030 road network. The only difference in the process occurred during the join, where the road network (RegNet30.dbd) was joined by the ID field in AM data (Assn_AMPeak.bin) ID field. To reiterate, upon application and analysis of both travel time change methodologies, *the preferred choice was the one yielding the top 10 percent of roads in the area with the greatest percent change in travel time.*

Congested Corridors

As part of the Congestion Management Process, the consultant team developed a list of congested corridors by analyzing travel time data for the roadway network using regional model data. The regional model data included links, volumes, travel times and mode links for each of the eight counties in the Charlotte region.

After reviewing the data, percent change in travel time was calculated to determine the level of congestion along each link. Links with significant travel change were labeled as congested corridors or *Corridors of Critical Concern* as shown in Figure 7-3 (next page). A listing of these corridors can be found in *Appendix C-1* at the end of this document.

The congested corridors are grouped into following areas: inbound corridors, cross town corridors, and interstate corridors.

- Inbound corridors are links that are traveling from outbound areas into downtown Charlotte.
- Crosstown corridors are links traveling in an east/west direction across the region.
- Interstate corridors are links with congestion along major interstates.

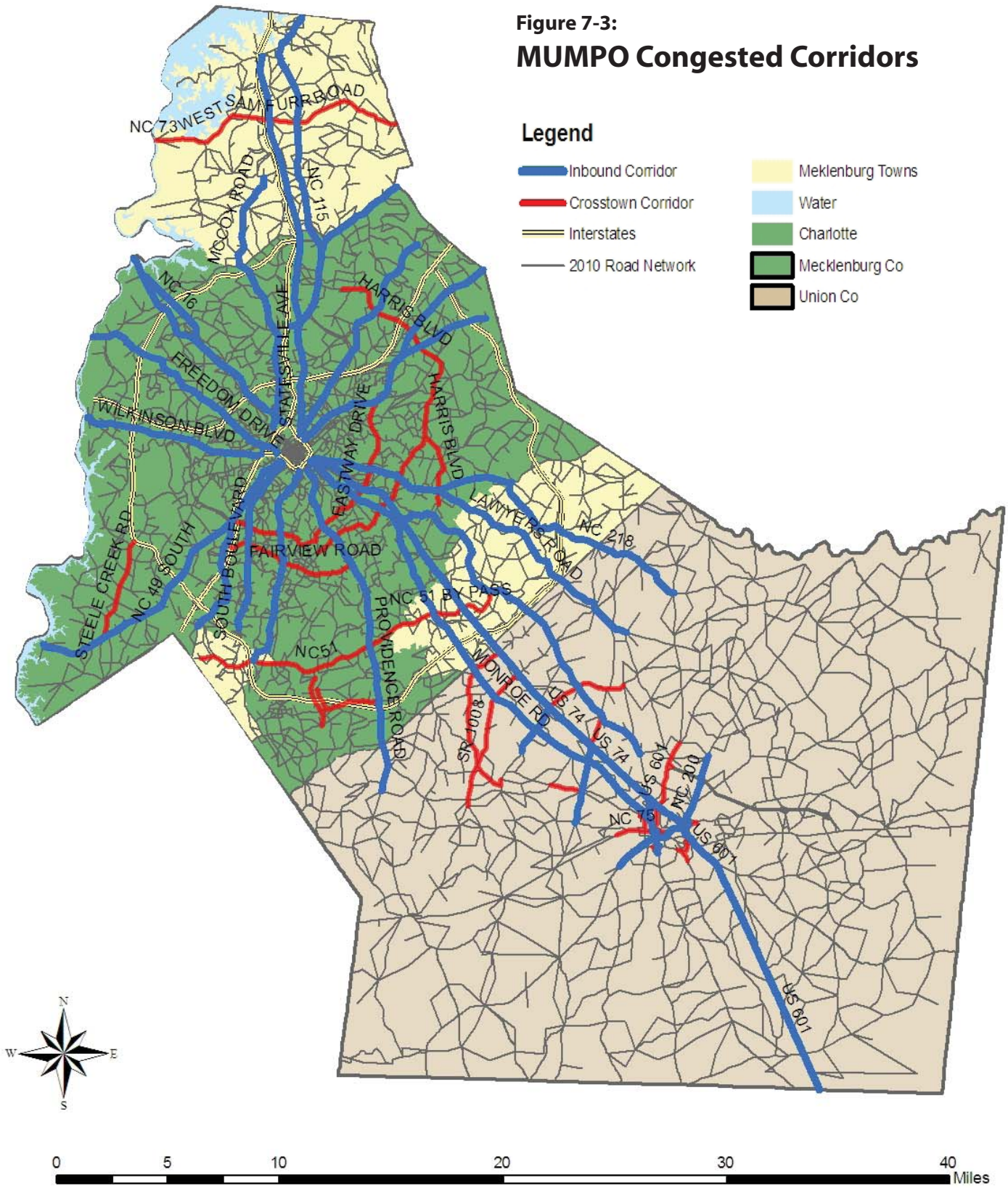
Hot Spots

Additionally, a listing of "Hot Spots" was developed using the same methodology as the congested corridors. However, the Hot Spots are congested areas or "spots" whose length in miles were not long enough to be considered an actual link. These areas or hot spots are possibly traffic congestion at a major intersection. The regional model identified over 100 hot spots across the region. For purposes of this report, the list was narrowed to the top 50 most congested hot spots. A list of the "Hot Spots" can be found in *Appendix C-2* at the end of this document.

■ Strategies Identified to Reduce Congestion

Many of the conventional strategies for managing congestion along corridors in the transportation network are currently in place in the MUMPO region. As this initial study addresses only the most fundamental of congestion management needs on the MUMPO network, not all of the strategies are relevant in all geographic jurisdictions at this time. Assuming the CMP develops as a more integral process for the LRTP and subsequent project planning, several of these strategies can grow into a more aggressive program.

**Figure 7-3:
MUMPO Congested Corridors**



Congestion Toolbox

A central component of the CMP is development of a toolbox of strategies to alleviate congestion and enhance mobility beyond traditional capacity adding efforts. The MUMPO CMP toolbox, included in *Appendix C-3* (at the end of this LRTP document), forms the basis of a screening methodology that is designed to identify, test, and effectively match mitigation strategies within identified congested corridors.

The first step in building the toolbox was review of the Institute of Transportation Engineers' (ITE) "Toolbox for Alleviating Traffic Congestion." Strategies included in the final toolbox were deemed appropriate for the region by local stakeholders and in general have been implemented successfully in the past.

The MUMPO CMP Toolbox is divided into five broad categories:

1. Highway
2. Transit
3. Transportation Demand Management
4. Intelligent Transportation System and Transportation System Management
5. Access Management

The MUMPO CMP Toolbox is restricted to mitigation strategies with potential impacts that can be measured at the regional level. There are additional strategies that are commonly applied in the Mecklenburg and Union County region but cannot be assessed using regional performance measures. These are outlined below.

Land Use Strategies

- Mixed-use development
- Infill and densification
- Transit-oriented development
- Develop special land use districts
- Develop Transportation Management Organizations
- Implement land use policies/regulations

Bicycle & Pedestrian Strategies

- Add new sidewalks and designated bicycle lanes
- Improve bicycle facilities at transit stations and other trip destinations
- Design guidelines for pedestrian-oriented development
- Improve safety of existing bicycle and pedestrian facilities
- Exclusive non-motorized ROW

Parking Strategies

- On-street parking and standing restrictions
- Employer/landlord parking agreements
- Preferential or free parking for HOVs
- Location-specific parking ordinances

Transportation Demand Management Strategies

- Alternative work hours
- Telecommuting

Screening Process

A Screening Process summarized in the matrix included in *Appendix C-1* (at the end of this LRTP document), was developed to identify appropriate strategies for mitigating congestion on the corridors of critical concern. There were two primary criteria dictating the types of appropriate strategies that are recommended for consideration prior to adding capacity.

- First, the type of facility plays a major role in screening strategies and strategies that are not generally appropriate for the type of facility were removed from further consideration. For instance, ramp metering, typically a strategy reserved for freeways, was eliminated from consideration for arterial roadways.
- The second criterion was based on inputs project committee members identified as the primary causes of congestion within each corridor. This effort went beyond the issues with volume of traffic and tried to be more specific about bottlenecks, parallel facilities, alternative modes and other issues contributing to the congestion of the identified roadways. From this information, the types of strategies still under consideration were reviewed for appropriateness to address congestion by attacking the cause.

During the course of developing the Congestion Management Program (CMP), the method for identifying congested corridors — which entailed the use of travel demand model results — led to the discovery that the methodology did not lend itself well to objectively analyzing the effect of the prescribed strategies over time. The travel demand model is neither a cost effective nor a precise enough tool to be used to test many of the prescribed strategies at the roadway corridor level. In addition, these strategies may have other impacts such as reducing the length of time for congested conditions that cannot be detected by a model.

The data collection efforts for future CMPs will include real time travel time runs and will be useful in monitoring the impact of prescribed congestion mitigation strategies. Therefore, the evaluation of strategies for this CMP is based on the more subjective analysis as described above.

■ Incorporation of Projects in the 2035 Long-Range Transportation Plan

LRTP Project Prioritization Process

According to this *2035 Long-Range Transportation Plan*, road projects are ranked according to the following criteria:

- ▶ Reduces congestion
- ▶ Provides benefits that outweigh project costs
- ▶ Improves safety and security
- ▶ Supports rapid and express bus transit
- ▶ Supports land use planning objectives and improves quality of life
- ▶ Improves accessibility to center city (Charlotte or Monroe)
- ▶ Increases accessibility to other economic centers in MUMPO and directly adjacent counties
- ▶ Reduces negative impacts on air quality
- ▶ Supports low income and minority communities

Roadway projects receive a ranking value for each of these criteria. The ranking values range from (+5), which means very high positive impact, to a (-5) which is very high negative impact. A (0) is given to projects that have no impact on improving congestion. After the project is assigned a ranking value for each criterion, the values are added up to equal a “total” score. Projects are then ranked or sorted numerically based on their total score. The projects with the highest total score are considered a higher priority and are added to the top of the Project Ranking/Selection List. Projects with the lowest scores are listed at the bottom of the selection list.

One of the key elements of the LRTP project prioritization process is to reduce congestion. Projects that significantly reduce daily vehicle miles per lane will receive a (5) ranking value in the prioritization process. Project sponsors are encouraged to submit projects, such as widening lanes or adding medians, which will help to eliminate and/or reduce congestion along major roadways in Charlotte.

■ The 2012 Update to the MUMPO Congestion Management Program

As the MUMPO CMP evolves over time, data collection methods will be improved and augmented in a multi-phased approach to refining the process. There are several critical components required by federal agencies that must be improved before the MUMPO CMP will be fully compliant. This section outlines the improvements to the CMP that will be incorporated in the 2012 MUMPO CMP prior to the subsequent update to MUMPO Long Range Transportation Plan. The updated CMP will be complete by December 2012.

Integration of CMP into the LRTP Project Prioritization Process

One bonus point will be assigned as a part of the LRTP ranking process under the “Reduces Congestion” criterion for those projects that are recommended by the CMP.

Develop Data Collection Program

MUMPO will continue to refine and evaluate congestion criteria and how the results of applied performance measures convey congestion problems throughout the planning area. Whereas this initial process centers on travel time delay, other factors will be considered as they relate to the definition of congestion within the region, the overall objectives developed for the CMP, prioritizing corridors of critical concern, evaluating mitigation strategies and monitoring the impact of the CMP on the transportation system.

To further analyze the congested corridors, the MPO will need to expand its data collection efforts to bridge the gap between traffic model output data and travel behavior assumptions applied for development of the congestion performance measures. MUMPO—in conjunction with the City of Charlotte, CATS, NCDOT, and other local jurisdictions—should establish a means for real-time data collection that includes the following:

- Travel Time Studies should be the primary means for data collection for the CMP because the change in travel time will remain the primary factor in determining congestion. There have been some travel time collection efforts by CDOT and other planning partners, but the

program should be formalized as soon as possible and funded through the MPO. The use of travel time studies will offer a number of advantages over the use of the travel demand model, including the ability to measure non-recurring congestion, test the length of time corridors are congested and the ability to monitor – in real time — the impact of applied mitigation strategies. Some MPOs utilize planning, engineering or statistical programs at local universities to help conduct CMP data collection. There is a possibility that a department at UNC-Charlotte may be interested in undertaking part or all of the data collection activities and may be a cost effective solution to facilitating the establishment of the regional CMP. Privately collected data will also be investigated and considered as an option if determined to be more cost effective than real time travel time runs.

- Traffic Counts are generally conducted by NCDOT on state-owned roadways, and CDOT collects counts on heavier traveled city-owned streets. The data generated by these efforts will be incorporated in the CMP to support the prioritization of congested corridors and to evaluate/monitor prescribed mitigation strategies. MUMPO will be subsidizing this program to perform counts that supplement NCDOT counts in the areas of the region not covered by CDOT.
- Transit Ridership and route productivity will continue to be monitored as part of the MUMPO CMP to assess the impact of transit strategies. As more fixed guideway comes on-line, the capacity on transit will reach a point where it will positively impact congested conditions of parallel roadways at a more measurable level (i.e. length of congested conditions, increased mode split during peak periods). Additionally, the region may want to consider a higher threshold for congestion or reduce the priority for capacity adding projects on corridors that have a viable transit alternative providing reasonably competitive travel times.
- Percent Truck Traffic is a critical performance measure for the prioritization of congested corridors given that the movement of goods is vital to the regional economy. The last truck count program was completed in 2000 in order to supply the regional travel demand model and will be completed on a more regular basis to support the CMP. MUMPO will incorporate truck counts in its count program in conjunction with CDOT, NCDOT and the suburban communities to identify those corridors serving a higher percentage of goods movement.
- Intersection Level of Service, similar to traffic counts, is not analyzed by the suburban municipalities at the same level as CDOT. MUMPO will support the suburban communities to conduct intersection LOS analyses in critical corridors to assist in monitoring the impact of mitigation strategies that relate to intersection improvements. This will only be implemented if the suburban communities are able to institute intersection LOS analysis programs at or near the level conducted by Charlotte DOT.

Refine the Definition of Congestion

The advent of improved data collection will afford the region the opportunity to refine the definition of congestion to accomplish a number of objectives.

1. As the region grows, the tolerance for congestion will naturally increase in highly traveled corridors which is a primary reason to base the region's definition of congestion on travel time.

2. Further stratification (multiple thresholds) of the definition of congestion based on geographic location of the congested corridor; corridor characteristics (such as the presence of transit); or other factors will be evaluated and incorporated in the CMP.
3. Applying the thresholds for congestion will inherently “level the playing field” between urban and suburban corridors.

Develop CMP Monitoring and Reporting

Improvements to the network can be achieved by obtaining and monitoring transportation data, developing projections, and implementing strategies for the existing and future proposed systems.

The CMP currently uses available sources of highway, transit and other data without demanding the development of new data needs specifically for this program. This is the weakest part of the CMP to date and future iterations of the process must include an objective and quantitative method for monitoring the impact of the CMP and its recommended strategies.

While additional data needs are necessary, they should be coordinated among the planning partners. In many instances, data collection improvements and intelligent transportation system technologies already in place or programmed for future implementation can benefit both their primary purpose as well as the CMP process.

Future CMP applications will include an ongoing program of data collection to identify and monitor system deficiencies, as well as to measure and analyze the effectiveness of alternative solutions for congestion management. This program can serve to augment the project selection process by the MPO for projects ranked in the LRTP. Projects with high congestion measures will gain “bonus points” as part of the project selection and ranking process based on their emergence in the CMP. The implementation of this component of the CMP will improve its capacity as a tool in the planning process and will move it closer to full federal compliance.

Prioritization of Congested Corridors

One of the main purposes of the CMP is to supply information for the long range plan about the priorities for congestion mitigation investment dollars. Data collection limitations for the initial CMP made it impossible to develop a methodology for prioritizing projects coming out of the process and into LRTP beyond a simple “in or out” designation. The TCC will negotiate a universally accepted methodology for prioritizing projects coming out of the CMP based on potential impact on congestion and the priority level of the targeted corridor.

The first criterion used in the LRTP project prioritization process established the framework for implementing prioritization within the CMP. In fact, it may be advisable to essentially “house” the first criterion from the LRTP process within the CMP and use that to establish the link between the CMP and the plan that is required by federal CMP guidelines. The CMP will identify those improvements that are highly recommended, recommended and not recommended and establish a ranking of improvements. A score corresponding to the ranking will serve as the starting point for the LRTP prioritization process.

The TCC and planning partners should recognize that this is not an attempt to override the LRTP process because the CMP will be incorporated in the rest of the LRTP evaluation at a same weight (+5 for highly recommended, 0 for recommended and -5 for not recommended). The primary difference centers on an alternative methodology for prioritization within the CMP that is travel time based rather than focused on volumes (current LRTP process) and a new method for ranking the corridors of critical concern and identifying the areas of congestion that should be addressed first.

► **See Appendix C** of this document for the following materials:

Congested Corridors **Appendix C-1**

Hot Spots **Appendix C-2**

Mitigation Toolbox **Appendix C-3**

8.0

ENVIRONMENT

MUMPO has many of the same environmental concerns as other similarly-sized metropolitan areas. Air quality and water quality issues are high priorities in the Mecklenburg-Union planning area and in our neighboring transportation planning jurisdictions.

The transportation systems and land use decisions that affect these issues are considered in the zoning and land development practices of the individual jurisdictions and in MUMPO's transportation planning process.

The following addresses these issues, as well as the consultation and mitigation requirements of the metropolitan planning regulations.

8.1 Air Quality

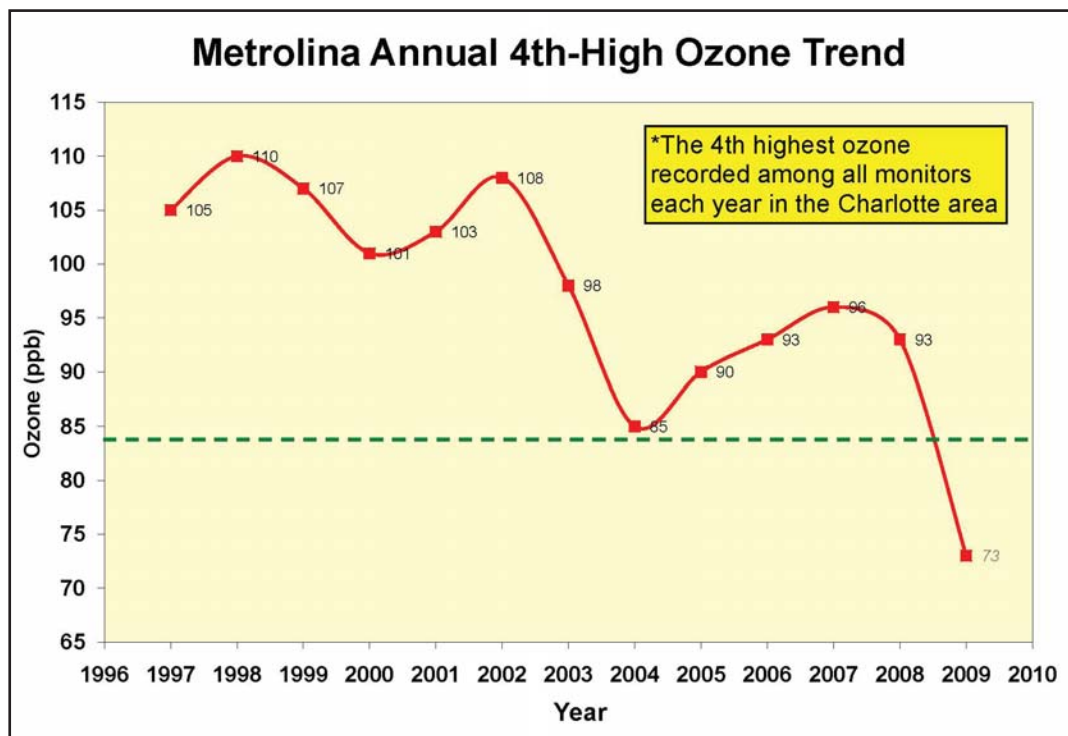
Ensuring that transportation sources contribute to attainment of clean air in the Mecklenburg-Union urban area and surrounding counties is one of the highest goals of MUMPO.

In 1995, the United States Environmental Protection Agency (EPA) designated Mecklenburg County a *maintenance area* for 1-hour ozone and carbon monoxide National Ambient Air Quality Standards (NAAQS). A "maintenance area" is an area which was formerly deemed to be in non-attainment for a specific pollutant, but is *now in attainment*, (i.e. now in compliance with EPA air quality standards).

As improvements in emission controls have resulted in significant reductions in carbon monoxide (CO) emissions from motor vehicles, attaining the air quality standards for CO has become easier during the past twenty years. Since June 15, 2005, the 1-hour ozone standard has ceased to exist.

In April, 2004, all of the MUMPO area was part of a multi-county region designated by EPA as a non-attainment area for the 8-hour ozone NAAQS of (effectively) 84 parts per billion (ppb). Air quality has steadily improved over the past 25 years for all pollutants, including ozone. *Figure 8.2* (top of the next page) shows the downward trend of 8-hour ozone from 1997 to 2009.

In March, 2008, EPA revised this 8-hour ozone NAAQS standard downward to 75 ppb. On January 6, 2010, the US Environmental Protection Agency (EPA) announced they would propose an even lower national 8-hour ozone standard, between 60 and 70 ppb. The EPA will issue a final decision by August 31, 2010.

Figure 8.2: Historical Trend of 8-Hour Ozone in the Metrolina Region

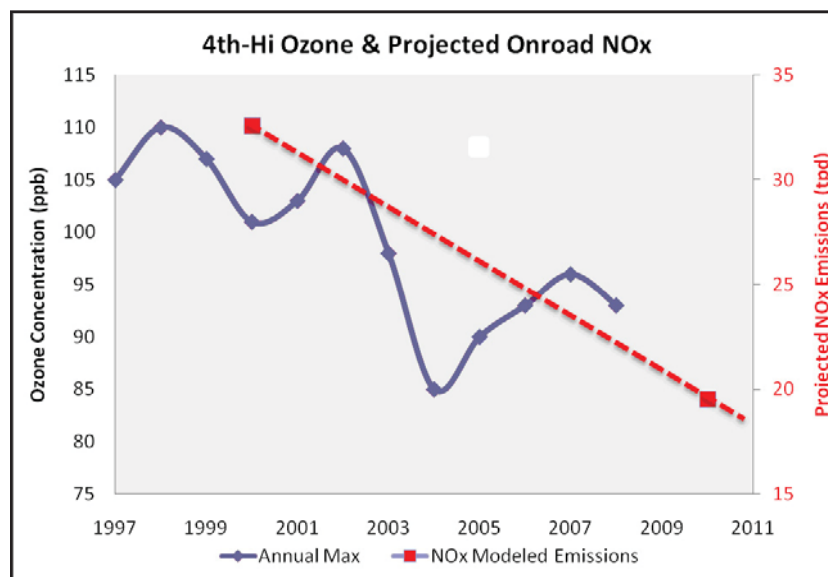
Note: The 2009 value includes ozone measurements through September 30, and has not been fully validated by the NC Division of Air Quality.

The geographic boundaries of the non-attainment area for this new ozone NAAQS will not be established until March 12, 2011 – and for this reason **the new ozone NAAQS does not impact the conformity requirements for the Metrolina non-attainment area for this 2035 LRTP. However, ozone will continue to be a major challenge.**

On a positive note, many new federal and state controls should continue to reduce emissions from autos and light duty trucks, in addition to emissions from heavy-duty diesel vehicles and point sources. Ozone emissions have generally trended downward since 1997. Technological improvements over the past decade have caused NO_x (nitrogen oxides) emissions to also trend downward. These two national trends are shown in *Figure 8.3*, at the top of the next page.

However, these **technological improvements** designed to reduce the formation of ozone precursors **are at risk of being overcome** by rapid growth and an even faster increase in vehicle miles of travel (VMT).

Another area of potential attention is the 2.5-micron particulate matter standard. In April, 2005, EPA designated Mecklenburg-Union as an “attainment” area. The extra controls on diesel vehicles listed above and continued improvement at the coal-fired power plants in the surrounding counties have been important actions in addressing this emerging pollution concern and preserving Mecklenburg-Union’s attainment designation.

Figure 8.3: 4th-Hi Ozone and Projected Onroad NOx

The State, MUMPO and local jurisdictions are taking other **proactive measures to improve air quality in the Charlotte region.**

- ▶ The “Air Awareness Program” of the North Carolina Department of Environment and Natural Resources (NCDENR) was created to educate the public about air pollution and the individual actions that can make a difference during forecasted peaks.
- ▶ “Clean Air Works!” is a project of the Regional Air Quality Board, in collaboration with the Regional Planning Alliance, the City of Charlotte, Mecklenburg County Air Quality, Charlotte Area Transit System (CATS), Charlotte Chamber of Commerce, Union County Chamber of Commerce, Centralina Council of Governments, and Catawba Regional Council of Governments. This program encourages employers and workers to change behaviors during the ozone season to reduce single-occupant vehicle travel.

Major commitments to **strategies that encourage higher vehicle occupancy and lower VMT** are also part of this region’s plans to improve air quality. These commitments include:

- the construction of major rapid transit projects,
- extensive expansion of local and express transit services,
- construction of lanes for high-occupancy vehicles, and
- continued integration of land use and transportation planning.

Mecklenburg County has begun focusing on **non-road sources for ozone reductions**, primarily through the Grants to Replace Aging Diesel Engines (GRADE) program. This project specifically targets nitrogen oxides (NOx) that contribute to the ozone problem in the Charlotte region.

This program is particularly effective because off-road equipment historically has not had emissions controls on its engines, and emits many times the pollution of similarly powered on-road

equipment. Any company that operates off-road construction equipment in the North Carolina portion of the Charlotte Non-Attainment Region is eligible to apply for funding to clean up that equipment. Funding is provided by the U.S. Environmental Protection Agency, North Carolina Division of Air Quality and the Mecklenburg County Board of County Commissioners.

MUMPO considers air quality benefits as a part of its current project ranking process in the development of the LRTP. The objective of the criterion in the ranking process is to improve air quality by reducing vehicle miles traveled (VMT) by increasing vehicle occupancy, encouraging non-motorized travel, or creating new roadway connections. More specifically, candidate projects are awarded additional points to their scores for the following types of projects:

- managed (HOT/HOV) lanes,
- significantly reducing VMT by improving connectivity,
- accommodating bicyclists and/or pedestrians in roadway projects.

Projects that are determined to greatly induce sprawl can receive negative points in the project ranking analysis.

8.2 Water Quality

The transportation system affects water quality through atmospheric emissions and runoff from development.

- **MUMPO's roadway project ranking process** includes an environmental factor that seeks to assess the environmental impact of each project nominated for inclusion in the LRTP. An environmental features map was used extensively in the project ranking process, and includes features such as floodplains, watersheds and resources ranked by the North Carolina Division of Water Quality. Local knowledge of the community was used to supplement information that may not have been incorporated into the environmental features map.
- **Mecklenburg County** has taken a proactive role in establishing buffers around creeks, streams, and rivers. Particular attention has been paid to protecting the drinking water supply by addressing development issues in sensitive watershed areas.
- **Union County**, in "Vision 2020," has also committed to build infrastructure that promotes commercial, industrial, and agricultural growth and supports residential development while producing a sustainable living environment.

As a result of the Environmental Protection Agency's (EPA) Phase II National Pollutant Discharge Elimination System (NPDES) Program—and the Goose Creek Watershed Site Specific Water Quality Management Plan—Indian Trail, Lake Park, Monroe, and Stallings implement stormwater management programs that establish buffer requirements along jurisdictional creeks and streams for new development.

The North Carolina Division of Water Quality (NCDWQ) administers the Post-Construction Stormwater Management regulations and the Goose Creek Watershed Site Specific Water Quality Management Plan for new development in the remainder of Union County. The

Phase II and Post-Construction regulations regarding buffers, at a minimum, require built-upon areas to be located at least 30 feet landward of all perennial and intermittent surface waters. New developments located within the Duck, Goose, Six Mile, and Waxhaw Creek Watersheds require an undisturbed riparian buffer within 200 feet of waterbodies within the 100-year floodplain and within 100 feet of jurisdictional waterbodies not within the 100-year floodplain. Certain activities in the buffer areas are exempt or potentially allowable with NCDWQ approval.

- **Local and county governments** are working with the Centralina Council of Governments and the North Carolina Ecosystem Enhancement Program to develop a watershed protection plan for the Goose Creek and Crooked Creek watersheds. The Goose Creek watershed supports populations of a federally endangered freshwater mussel, the Carolina heelsplitter. MUMPO staff has been involved with the process due to the effects the transportation system can have on watersheds and water quality.

The efforts to lower air pollution from the transportation system will have positive impacts on water quality. **The integration of land use and transportation will benefit water quality** by ensuring that proposed transportation facilities are balanced to the appropriate level of development in sensitive watershed areas.

8.3 Consultation

Section 23CFR450.322g of the metropolitan planning regulations states:

“The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate: (1) comparison of transportation plans with State conservation plans or maps, if available; or (2) comparison of transportation plans to inventories of natural or historic resources, if available.”

At the start of the development of this *2035 Long Range Transportation Plan*, MUMPO developed a document entitled “**Consultation Process Procedures**” to ensure that the appropriate agencies were provided the opportunity to take an active role in the LRTP’s preparation.

The first step in the “Consultation Process Procedures” was to assemble a database of all federal, state and local agencies with responsibilities in the areas mentioned in the planning regulations. Once the database was established, the identified contacts within the agencies were contacted and requested to provide MUMPO with their latest “maps, inventories, plans and strategies.” The contact persons were also invited to request one-on-one meetings with MUMPO staff if that were the preferred method of contact. Information received through this process was compiled in a single map.

All agencies in MUMPO’s database were invited to attend the LRTP development kick-off meetings held in February 2008. Three agencies—US Fish & Wildlife Service, NC Natural Resources Commission and the NC Division of Water Quality—sent representatives to one of the two meetings.

Following the February kick-off meetings, the “Consultation Process Procedures” focused on engaging the agencies through participation in MUMPO’s roadway project ranking process. All agencies were invited to participate in the Technical Coordinating Committee’s work to rank over 300 roadway projects that had been nominated for inclusion in the LRTP. Representatives of the US Environmental Protection Agency, US Fish & Wildlife Service and the NC Natural Resources Commission requested a meeting with MUMPO staff to discuss the ranking process and to discuss their concerns.

Furthermore, MUMPO created a “Resource Agency Consultation” section on its website and posted all appropriate information to allow agencies unable to take part in the ranking process, or who lacked adequate staff to become actively involved with the LRTP’s development, to access the information.

Upon completion of the project ranking process, the “Consultation Process Procedures” gave significant emphasis to ensuring that the agencies were kept up-to-date on MUMPO’s work to prepare its fiscally-constrained project lists. Contact was made with the agencies at each milestone in that process and a request was made to provide comments on the projects.

See *Appendix D* for full documentation of MUMPO’s Consultation efforts and to read the comments that were received.

8.4 Mitigation

Section 23 CFR 450.322f7 of the metropolitan planning regulations states that Long Range Transportation Plans must include:

“a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation.”

MUMPO’s regional perspective — combined with the 20-year planning horizons required of Long Range Transportation Plans — does not permit *project-level* discussion of environmental mitigation. Instead, the information presented discusses existing activities that seek to mitigate environmental impacts, potential mitigation activities, and the mitigation-related challenges faced by MUMPO.

Exiting Mitigation Activities

MUMPO has in place a series of activities that will assist in future project development through the early identification of potential environmental constraints. Continued employment of these activities can result in actions such as scope changes that will result in the avoidance of resources at the planning level, thereby limiting the need for, and the expense of, design changes and/or environmental mitigation efforts.

- At the beginning of the LRTP development process, staff requested environmental “maps, inventories, plans and strategies” from its Consultation partners as a part of the overall Consultation process. The information received, along with data previously acquired, resulted in the preparation of **an environmental features map** (*Figure 8.1 in the Map Gallery at the end of this document*) that identified a wide-range of environmental constraints that could potentially affect future project development. As in the past, this map will not be a static document, but will be updated as new information is made available.
- The development of MUMPO’s fiscally-constrained road project list began with the nomination of over 300 projects for possible inclusion in the LRTP. Each project is subjected to **MUMPO’s rigorous project ranking process** that includes an environmental factor that has as its objective the assessment of the anticipated effect a nominated project may have on a documented environmentally sensitive area. (The definition of “documented environmentally sensitive area” is broad; for example, it would include a wetland area not officially-mapped, but known to exist by local officials or residents.)
- The environmental features map was used extensively throughout the ranking process to determine if projects would have a negative environmental impact. In recognition of the fact that all the data collected by MUMPO and shown on the map may not have captured every possible environmental constraint, the **detailed knowledge of local planners and engineers** was used to supplement the map’s information to ensure that a proper assessment of each project was made. Inclusion of the environmental factor in the project ranking process allows for early flagging of various potential environmental impacts.
- **MUMPO regularly conducts analyses of projects on its Thoroughfare Plan** to determine if the proposed alignments are viable. These analyses include an environmental screening component to identify potential constraints that may have to be addressed at the project development stage. In some cases, the result has been a modification to the Thoroughfare Plan when the screening has determined that the constraints are significant enough to warrant such action. In addition, MUMPO’s local governments conduct similar analyses that include an environmental screening, and such activities have also resulted in Thoroughfare Plan modifications.

Various agencies within MUMPO’s planning area also play a significant role in mitigation-related activities:

- **Mecklenburg County and its municipalities** have taken a proactive role in establishing buffers around creeks, streams, and rivers. Particular attention has been paid to protecting the drinking water supply by addressing development issues in critical watershed areas.
- **The Catawba Lands Conservancy and the Davidson Land Conservancy** have augmented the government efforts mentioned above by working to conserve environmentally sensitive land and preserving open space.
- **In Union County, Indian Trail, Lake Park, Monroe, and Stallings** implement stormwater management programs that establish buffer requirements along jurisdictional creeks and streams for new development. The North Carolina Division of Water Quality (NCDWQ)

administers the Post-Construction Stormwater Management regulations and the Goose Creek Watershed Site Specific Water Quality Management Plan for new development in the remainder of Union County.

In addition to activities of MUMPO and its local partners, the North Carolina Ecosystem Enhancement Program (EEP) implements off-site mitigation projects for NCDOT where on-site mitigation is not possible. NCDOT is responsible for implementing on-site mitigation projects.

Potential Mitigation Activities

Listed below are potential reasons why mitigation might be necessary on a project, along with possible activities that could be considered when a project faces environmental constraints.

Archaeological

- Conduct archaeological excavations to ensure artifacts are not lost.
- Realign and/or relocate the project to avoid the affected resource.

Community Impacts

- Construct a bridge to help maintain community cohesiveness.
- Construct sidewalks and bike lanes.
- Install traffic calming devices.
- Construct sound barriers.

Farmland

- Work with local land conservancies or the North Carolina Agricultural Development and Farmland Preservation Trust Fund to determine ways to preserve the resource.

Fragmented Animal Habitats

- Build overpasses with vegetation or underpasses to allow animals to cross project safely.
- Realign and/or relocate the project to avoid the affected habitat.

Historic Sites

- Realign and/or relocate the project to avoid the affected site.
- Install landscaping to reduce visual impacts.
- Relocation

Noise

- Erect noise barriers.
- Depress the facility.
- Install landscaping to reduce impacts.

Off Site Mitigation

- Work with local land use agencies, park departments, land conservancies, etc., to identify potential sites where off site mitigation can occur if on site mitigation is not feasible.

Threatened and Endangered Species

- Realign and/or relocate the project to avoid the affected species.
- Enhance or restore degraded habitat.
- Create new, off site habitats.

Challenges to Mitigation

Rapid growth is a key challenge to mitigation activities. MUMPO is located in one of the fastest growing regions of the nation, resulting in a rapidly shrinking inventory of locations where effective mitigation activities can be located.

Limited financial resources are a further challenge. Effective mitigation efforts are always difficult to fund, but as overall resources become more and more limited, the willingness to implement mitigation projects may become harder.

8.5 Future Issues

■ Climate change

Climate change is an increase in the near surface temperature of the earth most often as a result of increased Greenhouse Gases (GHS).

Climate change can be addressed in transportation planning with mitigation and adaption efforts. "Mitigation of climate change means reducing the major causes of climate change: GHG released by human activity. Adaptation to climate change means minimizing the potential impacts on the transportation system from climate changes such as rising temperatures, increased intensity of storms, rising sea levels and increases in overall climate variability." (Federal Highway Administration, *Highways and Climate Change*)

Many federal, state and local transportation agencies are incorporating climate change issues in their various plans and processes. The Federal Highway Administration has identified four **primary strategies to reduce GHG emissions from transportation:**

1. *Improve system and operational efficiencies* – traffic flow, fuel efficiency, and maintenance, etc.
2. *Reduce growth in vehicle miles traveled (VMT)* – land use strategies, HOV lanes, transit options, connectivity, pedestrian and bicycle facilities, etc.
3. *Transition to lower GHG fuels* – use of biodiesel and natural gas
4. *Improve vehicle technologies* – more fuel efficient-vehicles; hybrids, Corporate Average Fuel Economy (CAFE) standards.

MUMPO and its partners have already employed a number of noteworthy activities which would reduce GHG emissions, several of which are described below:

1. Charlotte Region Fast (Managed) Lanes Study

The Fast (Managed) Lanes Study was a multi-county evaluation of the feasibility of implementing managed lanes, including high occupancy vehicle (HOV) and high occupancy toll (HOT) lanes, throughout the Charlotte region. The study was initiated in part because of the public's acceptance of the HOV lanes along ten miles of I-77 between Charlotte and Huntersville. HOV and HOT lanes emphasize person movement rather than vehicle movement, thereby improving a roadway's ability to transport more people in fewer vehicles.

2. Charlotte Urban Street Design Guidelines

The Charlotte City Council adopted the Urban Street Design Guidelines (USDG) in 2007. The USDGs are built upon the “complete streets” philosophy, which emphasizes that the transportation network should be multi-modal, thereby making alternative modes more viable and lessening the community’s reduction on every trip requiring the use of a car.

3. Connectivity Policy

Many communities have established a connectivity policy that emphasizes a system of streets providing multiple routes and connections between origins and destinations. Connectivity is important because a highly connected street network can greatly reduce trip lengths, thereby reducing vehicle miles travel which in turn results in reduced emissions.

4. Transit Planning

Mecklenburg County adopted a 1/2 cent sales tax for transit in 1998 to support a vision outlined in the *2025 Integrated Transit/Land Use Plan*. The result has been the opening of North Carolina’s first light rail line, significant increases in bus service (including regional service to outlying cities), and strong efforts to promote transit-oriented development (TOD) at existing and future rapid transit stations. The emerging transit system, and the concurrent land use planning efforts, will provide residents with options to traditional transportation and land use patterns.

5. Congestion Mitigation & Air Quality (CMAQ) Funds

MUMPO member jurisdictions have used CMAQ funds for a variety of purposes that will result in a reduced use of GHG fuels, including:

- intersection improvements-to assist in congestion and idling;
- street connectivity-to reduce trip length;
- bus replacement-to purchase vehicles that are more fuel efficient;
- traffic signal priority-to decrease travel time for buses, thereby making transit a more viable transportation option;
- diesel engine retrofits-to eliminate old, highly-polluting engines from off-road construction vehicles; and
- greenways-to promote alternative forms of transportation.

This plan does not include a quantitative assessment of Greenhouse Gases. However, as more consistent methods to measure GHG emissions are developed, and as legislative and regulatory mandates emerge (i.e., SAFETEA-LU reauthorization), MUMPO will address them accordingly. In the meantime, MUMPO will work on providing more education about transportation and its effects on climate change.

■ Greenhouse Gases

In December, 2009, the US Environmental Protection Agency (EPA) issued two findings that will have an impact on MUMPO’s transportation planning process in the future.

Endangerment Finding

The mix of atmospheric concentrations of six, well-mixed greenhouse gases threatens both the public health and the public welfare, both now and in the future. The six greenhouse gases are:

- carbon dioxide (CO₂)
- methane (CH₄)
- nitrous oxide (N₂O)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF₆)

The EPA states that these greenhouse gases in the atmosphere constitute “air pollution” and that they threaten the public health and welfare. This finding is called the “Endangerment Finding.”

● **Cause or Contribute Finding**

The combined greenhouse gas emissions from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases and hence to the threat of climate change. This finding is called the “Cause or Contribute Finding.”

The greenhouse gas emissions from the six sources mentioned above account for just over 23 percent of total U.S. greenhouse gas emissions. Greenhouse gas emissions from on-road vehicles are the second largest greenhouse gas emissions source in the United States, behind the electricity generating sector. EPA’s determination treats the emissions of the six key greenhouse gases collectively as an “air pollutant” under the Clean Air Act and paves the way for regulating emissions from cars.

Prior to this announcement, the EPA announced in May, 2009, that it would coordinate with the Department of Transportation (DOT) to set the first ever federal emissions standards for greenhouse gases by proposing standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. These vehicle categories are responsible for almost 60 percent of all U.S. transportation-related greenhouse gas emissions.

▶ **See the Map Gallery** at the end of the document for:
[Environmental Features Map](#) [Figure 8.1](#)

▶ **See Appendix D** for the following materials:

Consultation Process Procedures	Appendix D-1
Consultation Process Documentation	Appendix D-2
Comments Received	Appendix D-3

9.0

POPULATION AND LAND USE

9.1 Existing Land Use and Economic Activity

The Mecklenburg-Union (MUMPO) planning area includes all of the local governments in Mecklenburg County and the western and central portions of Union County (for a map of the planning area, see [Figure 1-1](#) in the Map Gallery at the end of the document).

Located in the Piedmont region of south central North Carolina, the MUMPO planning area serves as the demographic and economic focal point of the eleven county, bi-state modeling region—which included nearly 2 million people in 2005¹. The MUMPO planning area accounted for about half of the region’s population, with just under 979,000 people, and about 65 percent of the region’s estimated 1 million jobs in 2005 (Table 9-1 below).

Table 9-1: MUMPO and Mecklenburg County Population and Employment, 2005

	Region	(MUMPO)		Mecklenburg County	
		Total	Share of Region	Total	Share of Region
2005 Population	1,993,700	978,800	49.1%	837,900	42.0%
2005 Employment	1,002,700	652,100	65.0%	610,700	60.9%

Source: Metrolina Regional Travel Demand Model

Mecklenburg County (which includes Charlotte, the largest city in the Carolinas) contains the vast majority of both people (85.6%) and jobs (93.6%) in the MUMPO planning area. Charlotte remains the economic engine not just of the MUMPO planning area, but of the broader region as well.

Population growth in the MUMPO planning area has been driven by strong economic growth, with an economy traditionally dominated by producer services, wholesale industries, and transportation-related industries. The latter categories reflect the area’s historic ability to capitalize on strong transportation connections to major east coast and midwest markets via Interstates 85 and 77, which intersect in Charlotte.

¹ **Note:** For the purpose of this discussion, the “current year” is 2005, reflecting the base year data used for the Regional Travel Demand Model. The previous *2030 Long Range Transportation Plan* used 2000 base year data based on the 2000 Census.

Charlotte/Douglas International Airport is the major hub of USAirways and provides direct flights to many domestic and international destinations, with an average 652 daily departures on all airlines (June 2009). In 2008, Charlotte/Douglas ranked 8th nationwide in operations, 14th nationwide in passengers, and 34th nationwide in cargo (*Airports Council International*).

Charlotte Douglas International Airport contributes nearly \$10 billion in annual total economic impact to the Charlotte region, according to a November 2005 report prepared by the Center for Transportation Policy Studies at the University of North Carolina at Charlotte (UNCC), in partnership with the Charlotte Chamber of Commerce.

In addition, the UNCC Urban Institute reported that over 100,000 jobs in the region are directly or indirectly related to the airport and its services (calculated by the Urban Institute, using the accepted standard developed by the Federal Aviation Administration).

Charlotte's economy historically has been more diversified than those of its regional neighbors whose job markets have been dominated by relatively low wage manufacturing sectors, such as textiles. This relative diversity, coupled with the rapid growth of major employers such as Bank of America and Duke Energy, and the general economic expansion of the 1990s, resulted in rapid employment and population growth.

Much of that previous growth was in producer services, FIRE (finance, insurance and real estate) and other, related services. More recent estimates suggest that Mecklenburg's economy remains diverse, even as the spinoffs from previous rapid growth in the financial sectors continue. (*Dr. Thomas Hammer, "Demographic and Economic Forecasts for the Charlotte Region," 2003*)

Mecklenburg's annual population growth rate between 2000 and 2005 (an estimated 3.2 percent) was third in the region behind Union County—now North Carolina's second fastest-growing county—and York County, South Carolina's second fastest-growing county.

Union's estimated 4.6 percent annual population growth rate in that period was dramatic, but Union's growth resulted in just an 8.5 percent share of the region's population in 2005, compared to Mecklenburg's 42.0 percent share. The majority of the population (87 percent) and employment (89 percent) in Union County is located within the MUMPO portion of the county. York's estimated 5.9 percent annual population growth rate resulted in just a 10.2 percent share of the region's population in 2005.

Mecklenburg County's relative dominance in population and employment is consistent with findings that the county, unlike central counties in similar metropolitan areas across the U.S., has maintained a centralized growth pattern relative to its region (*Hammer, 2003*), with the core county of Mecklenburg growing more rapidly than most of the surrounding counties throughout the previous decade.

Hammer suggests that this results, in part, from an established structure of small urban places around Charlotte, each with an existing population base (albeit low when compared to Charlotte), which makes large increases difficult without concomitant employment increases. The historic dependence of these towns on slow-growth industries, such as textiles, made such employment-driven population increases difficult to achieve.

9.2 Development Patterns within the MUMPO Planning Area

Growth and development patterns within the MUMPO planning area generally reflect the fact of more people and jobs in the Mecklenburg portion versus the Union County portions of the area.

Mecklenburg County's development pattern reflects a strong historical preference for residential and office development in the southern sectors of the county and a more recent surge of growth in the north and northeast portions of Mecklenburg. Union County has remained a bedroom community for Mecklenburg County, with a significant amount of commuting into Mecklenburg County by Union County workers. This status is expected to remain true into the future.

In terms of employment, Charlotte's Center City (downtown business district and surrounding neighborhoods) has enjoyed a strong position, reinforced by private-sector investment and public sector policies and planning during the 1980s and 1990s, and into the first decade of the 21st century. The Center City remains the single highest concentration of employment in Mecklenburg County, with approximately 63,000 employees. The second highest concentration of service employment (office and retail) is found in the SouthPark area, located in the mid-south portion of Charlotte.

Other major employment concentrations include the Airport area (west of the Center City), the University area in the northeast, and the Arrowood area (industrial/ distribution/ office) in the southwest portion of the County.

Rapid development in the University area can be tied to the initial establishment and growth of the University Research Park and University City in the late 1970s and early 1980s. The Arrowood area, in contrast, has historically consisted of large manufacturing and distribution complexes in a mostly rural or suburban environment.

Following completion of the former Charlotte Coliseum in 1988, and continued growth and expansion of Charlotte/Douglas International Airport, there has been continued outward development pressure along the I-77 corridor. More recently, with the completion of the southern and western portions of I-485, the Arrowood area and southwest Mecklenburg County have seen substantial growth. Much of the development in this area is campus style, single tenant office space. As mentioned, Charlotte/Douglas International Airport is itself a major employment concentration.

Employment densities for the Mecklenburg-Union planning area (*Figure 9-1* in the Map Gallery at the end of the document) reflect the influence of these major concentrations in the Center City, South Park (southern sector), Airport (western sector), Arrowood (southwest sector) and the University area in the northeast. Additionally, southern areas of the County, at the convergence of I-485 and Highway 51, continue to emerge as employment and economic concentrations.

Completion of the southern portions of I-485 resulted in new retail and office development around key interchanges. Construction of additional sections of I-485 has led other areas, mostly in the west and north, to experience heightened development activity. Much of this development is retail/office, while most industrial and wholesale employment is now and historically has been concentrated along major transportation arteries in the northern and western portions of Charlotte and Mecklenburg County.

In the Union County portion of the MUMPO planning area, most employment is concentrated in Monroe or along the Highway 74 corridor. As previously mentioned, though, employment in the entire MUMPO planning area is heavily concentrated in Mecklenburg, rather than Union County. The vast majority of land development changes in Union county occurred because of residential development, with employment-related development lagging far behind. The airport, other intermodal facilities, headquarters sites, and the office parks with freeway access are all in Mecklenburg County.

Residential land use patterns in the MUMPO planning area generally reflect the types of low-density development common to U.S. urban areas that grew quickly during the “Sunbelt Shift” era beginning in the 1970s ([Figure 9-2](#) in the Map Gallery at the end of the document).

In addition to this generally low-density pattern, growth in the Mecklenburg portion of MUMPO traditionally has been highly sectoral in its development pattern. High-end residential development historically has been attracted to the southern sector of Charlotte, beginning with the first streetcar suburbs (which have remained highly attractive neighborhoods), and including the relatively high density, high-priced development in the SouthPark area. The continued development in the Ballantyne area farther south is a significant continuation of this trend.

Development pressures in the southern sector of Charlotte resulted in considerable activity during the 1990s and early 2000s, with relatively low density residential and retail development extending beyond the City limits and into Union County. The southeastern portion of MUMPO’s planning area has also grown, as the towns of Matthews and Mint Hill tapped into development pressure moving outward from the southern sector, as did the western portion of Union County which captured a significant share of Union’s rapid growth.

Surrounding Charlotte’s Center City are some of Charlotte’s most stable residential areas (again, in the southern sector), as well as many fragile neighborhoods north and west of the Center City. These areas are established neighborhoods with relatively little recent growth, though they are beginning to experience higher density, infill-type development.

Additionally, areas like the South End, located between the Center City and the established neighborhoods to the south, have experienced recent residential and non-residential development. This development has been spurred by their advantageous location relative to Center City, adjacent high-priced neighborhoods, and the South Corridor Light Rail Line that opened in November, 2007. The Center City itself has also experienced a resurgence of residential development, and there were approximately 7,000 people living within the I-277 freeway loop in 2005.

Other recent residential development trends have included a housing boom in the north and northeast sectors of Mecklenburg County, and emerging development in the interchange areas near the new I-485 outer loop. Growth in the north can be attributed to the attraction of Lake Norman, the relative “small town” attractiveness of the northern towns of Davidson, Cornelius, and Huntersville, and the large amount of available vacant land.

The overall development pattern in northern Mecklenburg County is also related to the recent expansion of I-77, which has made the area more attractive to developers and residents. Residential growth in the northeast, as well as some in the north, is also related to increasing em-

ployment and shopping opportunities in the University area. Except for the University area, the north and northeast sectors are still relatively low-density areas.

As is the case with employment, the completion or anticipated construction of I-485 has created residential development pressures in the interchange areas. This is reflected in new development in both the north and south sectors, as well as increased interest in the west and northwest sectors. The latter areas historically have experienced less residential development than in the south. The southwest portion of Mecklenburg County, from Arrowood to Lake Wylie, has grown rapidly over the past 20 years and the completion of I-485 through the southwest sector continues to produce significant development pressure.

9.3 Land Use and Demographic Projections

Population and employment projections for the MUMPO planning area were derived using both a top-down approach (starting with projections for the eleven-county modeling region) and a bottom-up approach, using local staff input and a variety of locally-available data sources including:

- goals outlined in the City of Charlotte *Transportation Action Plan* (May 2006);
- the Centers and Corridors Growth Framework analysis of centers, corridors and station areas documented in the “City of Charlotte Estimated Development Potential for Transit Corridors & Activity Centers 2008-2035” (Noell Consulting Group, April 2009); and
- local “pipeline” data regarding permitted development.

The following discussion reviews the general patterns reflected in the land use and demographic projections used to produce travel forecasts analyzed for this plan.

The MUMPO planning area currently accounts for approximately 49 percent of the population and 65 percent of the employment in the eleven-county modeling region (see [Figure 1-1](#) in the Map Gallery at the end of the document). MUMPO is projected to continue to dominate the region, with continued, though slowing, growth rates through 2035 (Table 9-2 on the next page).

- ▶ MUMPO’s projected population of approximately 1,669,000 people in 2035 will still account for about 49 percent of the region’s projected population.
- ▶ MUMPO will also continue to dominate the region’s employment, with a projected 1,193,500 jobs by 2035, representing 63 percent of the region’s total employment.

Mecklenburg County will continue to represent the largest percentage of population and employment in the MUMPO planning area, even though Union County is projected to have higher growth rates for both population and employment over the planning period (Table 9-2).

- ▶ By 2035, Mecklenburg County’s population is projected to grow by 61 percent, to about 1.35 million people.
- ▶ Union County, North Carolina’s fastest growing county for the past two decades, is projected to grow to just over 373,000 people by 2035, an increase of 121 percent over the same time period.

- ▶ Approximately 87 percent of Union County's 2035 population will reside within the MUMPO portion of the County, which includes Monroe.

While Union County's population growth rate is projected to exceed that of Mecklenburg County's, the total amount of population growth in Mecklenburg County will be much larger than that projected for Union County. Just the growth in Mecklenburg County's population between 2005 and 2035 is projected to exceed Union County's total population for 2035.

Mecklenburg County will also continue to be the dominant employment concentration in the region, as well as in the MUMPO planning area. Employment in Mecklenburg County will continue to grow substantially, from roughly 610,000 jobs estimated in 2005 to roughly 1.1 million jobs in 2035, a 74 percent increase. While the employment growth rate, per decade, is projected to remain steady over the first two decades and decrease during the last decade (Table 9-2), Mecklenburg County will continue to account for the majority of jobs in the region.

Union County is projected to more than triple its total employment to almost 148,000 jobs by 2035, but that total future number of jobs represents only about 22 percent of the increase in employment projected for Mecklenburg County between 2005 and 2035. As with population, Union County's rate of employment growth is projected to continue to exceed Mecklenburg's. However, the 128,000 employees projected for 2035 in the MUMPO portion of Union County will account for only about 11 percent of MUMPO employment by 2035.

**Table 9-2:
MUMPO, Mecklenburg County and Union County Population and Employment, 2005-2035**

	Mecklenburg	Union ¹	MUMPO ²	Mecklenburg	Union	MUMPO
	Total			Percent Change from Previous Horizon Year		
Population						
2005	837,900	168,700	978,800			
2015	1,025,000	232,000	1,223,800	22.3%	37.5%	25.3%
2025	1,197,000	301,000	1,459,300	16.8%	29.8%	19.2%
2035	1,345,100	373,400	1,669,400	12.4%	24.0%	14.4%
Employment						
2005	610,700	46,400	652,100			
2015	745,100	75,900	813,300	22.0%	63.6%	24.7%
2025	911,500	113,000	1,011,000	22.3%	48.8%	24.3%
2035	1,065,200	147,200	1,193,500	16.9%	30.3%	18.1%

Source: Metrolina Regional Travel Demand Model

¹ All of Union County is included in this column for comparative purposes, rather than just the portion within MUMPO

² Includes Mecklenburg County, plus that portion of Union County within the MUMPO planning area

9.4 Growth Patterns in the Mecklenburg-Union Urban Area

Over the next 30 years, growth—and the density of that growth—is expected to intensify in centers, corridors, and transit station areas. Even so, two-thirds of Mecklenburg County’s population growth will remain in the wedges (the areas between corridors) and in surrounding suburban towns. Maps in the Map Gallery at the end of the document (*Figures 9-3 to 9-6 — see list of links on the next page*) show projected population (household) and employment patterns within the MUMPO area.

- ▶ The northern towns of Davidson, Cornelius, and Huntersville, and areas along Lake Norman, are expected to grow significantly, as are the Northlake and University Research Park centers.
- ▶ In the southwest and west areas of Mecklenburg County, the fast growing areas will include those along major transportation corridors, particularly near the interchanges with I-485 and along the streetcar line. The Whitehall area is expected to intensify with office employment. Steele Creek is expected to remain strong in office, retail, and residential.
- ▶ In the southern and eastern portions of Mecklenburg County, the area along the Union County line is expected to be one of the most rapidly growing areas. Much of this growth will be around I-485 interchanges and in the areas between Monroe, Matthews, and Mint Hill. In addition, the southeast corridor is expected to intensify with employment towards the end of the projected growth period. SouthEnd is expected to continue to show strong growth.

Many of the future residential high-growth areas are not currently heavily populated and, therefore, their high growth rates will not necessarily equate to high population densities by 2035, particularly as they will likely continue to attract relatively low-density residential development. By 2035, the highest density residential areas within MUMPO’s planning area will continue to be in and surrounding Charlotte’s Center City, and in other established areas in the southern and eastern sectors (*Figures 9-3 and 9-4 — see list of links on the next page*), as well as in the south and northeast corridors.

The far southern and northern areas of Mecklenburg County will experience some higher density residential development, reflecting development in and around transit stations, but the very high growth areas in the east, southeast, and west will continue to be of relatively low-density when compared with the established higher density areas closer to the Center City. These more central areas are projected to experience some increased density through continued infill and redevelopment opportunities.

Employment density patterns projected for 2035 reflect the continuation of recent trends and show intensification in the current employment areas, as well as emerging concentrations along I-77, I-85, I-485 and the transit corridors and station areas.

- ▶ Charlotte’s Center City and other current activity centers will continue to be the largest and densest employment concentrations. The SouthPark and University areas, for example, are projected to continue to grow and, as shown in [Figure 9-6](#), will be major employment concentrations in 2035.

- ▶ Areas in and near the northern towns (particularly along I-77 and I-485) are expected to show significant employment increases, and at some of those locations this will result in relatively high employment densities by 2035. Huntersville, Davidson and Cornelius are each projected to at least double their employment by 2035. (Refer to *Figures 9-5 and 9-6*.)
- ▶ The MUMPO portion of Union County is projected to achieve high employment growth, but with a relatively low density employment pattern overall by 2035. Jobs in this area are likely to continue to concentrate along U.S. 74 and in Monroe, and to reflect employment growth emanating from major interchanges along eastern portions of I-485.

▶ See the Map Gallery of the end of this document for the following maps:

<u>Household Density, 2005</u>	<u>Figure 9-1</u>
<u>Employment Density, 2005</u>	<u>Figure 9-2</u>
<u>Change in Households, 2005-2035</u>	<u>Figure 9-3</u>
<u>Household Density, 2035</u>	<u>Figure 9-4</u>
<u>Employment Change, 2005-2035</u>	<u>Figure 9-5</u>
<u>Employment Density, 2035</u>	<u>Figure 9-6</u>

10.0

FINANCIAL PLAN

Federal regulations require a financial plan as an element of the MPO's Long Range Transportation Plan. The purpose is to demonstrate that proposed investments are reasonable in the context of reasonably anticipated future revenues over the life of the plan and for future network years (2015, 2025, and 2035). Meeting this test is called "fiscal constraint."

The *2035 Long Range Transportation Plan* is fiscally constrained based on the analysis of revenues and costs. The transportation investments proposed to meet metropolitan transportation needs over the planning period are consistent with revenue forecasts. This chapter provides an overview of the forecasted cost and revenue assumptions, along with the detailed research results used to derive these values. The following sections provide more detailed assumptions regarding revenue, capital costs, maintenance costs, and future revenue needs.

10.1 Existing Revenue Forecasts

Revenue forecasts were developed after a review of previous state and local expenditures, current funding trends, and likely future funding levels. The revenue forecasts involved consultation with NCDOT and the local partners. All dollar figures discussed in this section were escalated to future-year dollars as noted below.

MUMPO and its staff discussed the impacts of upcoming increases in the nation's vehicular fuel efficiency standards, scheduled to take effect in 2015. Assuming no other changes, this will reduce revenues for the NCDOT. MUMPO and its staff still assumed slight increases (approximately two percent per year) for revenue into the future by assuming that some future modifications to the existing tax structure would occur to keep the revenue system "whole." Available resources will likely decline after 2015 without changes to the existing revenue sources.

Overall Assumptions for the 2035 LRTP

- ▶ The annual transfer of Highway Trust funds to the General Fund will fill the funding gap on future Turnpike Authority projects.
- ▶ North Carolina's donor state status regarding return of federal highway dollars increases from 92.5 cents to 95 cents by 2015.
- ▶ Urban Loops funds will be made available for retrofitting I-485.
- ▶ The Garden Parkway from I-485 across the Catawba River into Gaston County (STIP # U-3321) will be built as a toll facility.

continued next page

Overall Assumptions (continued)

- ▶ The Monroe Parkway (formerly Bypass/Connector) project (STIP #'s R-2559/R-3329) will be built as a toll facility.
- ▶ The level of maintenance of the transportation system will remain constant through the Plan lifespan.
- ▶ Local municipalities will continue to contribute funding towards LRTP projects at the same rate as past years.

10.1.1 Highway Federal and State Revenues (Equity)

The federal and state revenue forecasts were developed based on past, current, and expected future funding levels reflected in NCDOT's 2009-2015 Transportation Improvement Program. A key assumption is the expected modest growth of federal and state revenue for roadway projects in the MUMPO area. Highway, rail, safety, bridges, resurfacing, and enhancement projects listed in the TIP were considered in the calculation of an annual allocation of future revenues.

Bicycle and pedestrian projects that are a component of a roadway project are traditionally funded as part of the roadway project. Stand-alone projects are funded through enhancement funds but due to the recent expiration of the federal transportation authorization bill (SAFETEA-LU), no estimate of future enhancement funds was calculated. It was assumed that MUMPO's policy of including bicycle and pedestrian accommodations on all non-highway projects will still be implemented, however.

Likewise, MUMPO receives Congestion Mitigation and Air Quality (CMAQ) funds to address air quality issues, but a projection of funds available through 2035 was not estimated as part of this Plan for the same reason. After a new federal authorization bill is passed, future LRTP updates will include these funding sources in estimating available revenues.

Specific Revenue Assumptions for Each Horizon Year

- ▶ **2009-2015**
Revenues are based on average annual revenues (approximately \$50 million/year) reflected in the 2009-2015 TIP.
- ▶ **2016-2025**
Revenues are based on the average annual amounts reflected in the 2009-2015 TIP. State revenue sources are assumed to grow at 2.5% annually.
- ▶ **2026-2035**
A 2.0% annual growth rate is assumed throughout the remainder of the period. State Highway Trust funds are assumed to decrease by 30% by 2026 as a result of a majority of the urban loop projects being completed, with the Trust funds being re-allocated to Equity projects.

Table 10-1: Summary of Equity Funds 2009-2035

Equity	2009-2015	2016-2025	2026-2035	Total
Total	\$295,000,000	\$484,000,000	\$643,000,000	\$1,422,000,000

- Equity funds for 2009-15 have been reduced by \$20.5 million to reflect Equity funds needed for tolls (See Section 10.1.4).
- Equity funds for 2016-25 have been reduced by \$33 million to reflect Grant Anticipation Revenue Vehicles (GARVEE) Bond repayment (2016-2022). GARVEE bonds are issued with anticipated payback from future federal transportation funding receipts.

10.1.2 STP-DA Revenues

Federal Surface Transportation Program Direct Apportionment (STP-DA) funds are for areas with an urbanized population greater than 200,000. The MPO has the authority to direct the STP-DA funds to various TIP projects within the urban area. MUMPO receives approximately \$10 million per year in STP-DA funds.

The funding levels were projected to increase 1.6% annually based on current federally authorized levels. These revenues were analyzed separately from the state and federal revenues but are included in the totals shown for Equity Funds in Table 10-1.

10.1.3 Loop Funds

For at least the last twenty years, MUMPO has received much of its highway funding through the Urban Loop Fund. When the Charlotte Outer Loop (I-485) is complete, including improvements to the existing sections currently over capacity, this funding source will be used by NCDOT to complete other urban loops in North Carolina. As stated earlier, an assumption is being made that Loop Funds will be used for I-485 widening projects.

Table 10-3: Summary of Loop Funds 2009-2035

Loop	2009-2015	2016-2025	2026-2035
I-485 from NC 115 to I-85 (R-2248E)	\$185,000,000	0	0
I-485/I-85 Interchange (R-2123CE)	\$155,000,000	0	0
I-485 Widening from I-77 to Johnston (6 lanes)	0	\$130,000,000	0
I-485 Widening from Johnston to Providence	0	\$110,000,000	0
I-485 Widening from Providence to U.S. 74	0	\$155,000,000	0
I-485 Widening from I-77 to Johnston (8 lanes)	0	0	\$495,000,000
I-485 Widening from U.S. 74 to Albemarle Road	0	0	\$320,000,000
Total	\$340,000,000	\$395,000,000	\$815,000,000

10.1.4 Toll Gap Funds

“Gap Funding” is that money necessary to help pay for a toll project after anticipated toll revenues are assigned to pay for the project. Toll roads seldom pay for themselves, and a supplemental source is required for the difference, called the “Gap”.

The two toll projects in the 2035 LRTP (Monroe Parkway and Garden Parkway) are expected to need gap funding. These gap funds will be a combination of TIFIA Loans and Revenue Bonds. In addition, \$20.5 million from Equity funds are assumed to be needed for the Monroe Parkway. The Equity amount for FY 2009-2015 has been reduced by this amount in Table 10-1.

Table 10-4: Summary of Toll Gap Funds 2009-2035

Toll Gap	2009-2015	2016-2025	2026-2035
Monroe Parkway (R-2559/R-3329)			
TIFIA	\$313,000,000	0	0
Bond	\$480,000,000	0	0
Equity	\$21,000,000	0	0
Garden Parkway (U-3321)			
TIFIA	\$85,000,000	0	0
Bond	\$175,000,000	0	0
Total	\$1,074,000,000	0	0

10.1.5 Local Funds

The City of Charlotte has regularly asked its voters to approve transportation bonds for street and road improvements since 1962. Charlotte voters have acknowledged the need to locally fund transportation projects, and have approved almost \$1 billion through 2009. Since 2002, the citizens of Huntersville and Matthews have also approved transportation bonds. For the most part, these bonds have been used for improvements on municipal roadways, but bond funds have been used to finance improvements to several state streets. To date no bonds have been proposed by Union County or its municipalities to pay for transportation projects.

MPO analysis assumes future bonds will be proposed and approved to meet future demands for some transportation projects. The local revenue forecast assumes enough funding to meet current and future project costs.

Table 10-5: Summary of Local Funds 2009-2035

Local	2009-2015	2016-2025	2026-2035	Total
Charlotte	\$100,000,000	\$200,000,000	\$200,000,000	\$500,000,000
Huntersville	\$6,000,000	\$10,000,000	\$10,000,000	\$26,000,000
Matthews	\$5,000,000	\$5,000,000	\$5,000,000	\$15,000,000

continued next page

Table 10-5 (continued)

Local	2009-2015	2016-2025	2026-2035	Total
Cornelius	\$90,000,000	0	0	\$90,000,000
Total	\$201,000,000	\$215,000,000	\$215,000,000	\$631,000,000

10.1.6 State Roadway Maintenance Revenues

State roadway maintenance funds were set to equal expected expenditures based on previous levels of revenues and expenses dedicated to this purpose. State road maintenance costs are based on historical NCDOT funding from 2000 to 2009 in the MUMPO area. A conservative 2.0% growth factor was applied to forecast revenues through 2035.

Table 10-6: Summary of State Maintenance Funds, 2009-2035

State Maintenance	2009-2015	2016-2025	2026-2035	Total
Total	\$80,000,000	\$140,000,000	\$170,000,000	\$390,000,000

10.1.7 Powell Bill Funds

Powell Bill funds are funds that are annually provided to municipalities to maintain local roads within their jurisdictions. These funds are drawn from state motor fuel tax revenues. NCDOT returns these funds to eligible cities and towns for maintaining, repairing, constructing, reconstructing, or widening municipal streets. Powell Bill funds are also eligible for the construction and maintenance of sidewalks and bikeways located within the rights-of-way of public streets and highways.

Although some consideration had been given to the potential over the long term to redirect some amount of Powell Bill resources to construction activities, this plan makes the conservative assumption that this will not be the case. The amount of these funds distributed to a municipality is based on the number of street-miles maintained and the City's population. The Powell Bill funding for the planning area was reviewed for the years 2004-2009, with the amount received in 2008 being \$24.8 million.

A conservative assumption of 2.0% annual growth was applied to \$25 million to forecast the Powell Bill funding through 2035 based on the average annual funding level. This relatively flat trend reflects an increase in City-maintained lane-mileage and stagnation in state gas tax revenues.

Table 10-7: Summary of Powell Bill Funds, 2009-2035

Equity	2009-2015	2016-2025	2026-2035	Total
Total	\$185,000,000	\$315,000,000	\$385,000,000	\$885,000,000

10.1.8 Total of All Existing Revenue Sources

Table 10-8: Anticipated Revenues, 2009-2035

	2009-2015	2016-2025	2026-2035	Total
CAPITAL				
Equity Funds	\$295,000,000	\$484,000,000	\$643,000,000	\$1,422,000
Loop Funds	\$340,000,000	\$395,000,000	\$813,000,000	\$1,548,000
Toll Gap Funds	\$1,074,000,000	0	0	\$1,074,000,000
Local/Private Funds	\$201,000,000	\$215,000,000	\$215,000,000	\$631,000,000
Capital Sub-Total	\$1,909,000,000	\$1,094,000,000	\$1,671,000,000	\$4,675,000,000
MAINTENANCE				
State Maintenance	\$80,000,000	\$140,000,000	\$170,000,000	\$390,000,000
Powell Bill Fund	\$185,000,000	\$315,000,000	\$385,000,000	\$885,000,000
Maintenance Sub-Total	\$265,000,000	\$455,000,000	\$555,000,000	\$1,275,000,000
TOTAL	\$2,174,000,000	\$1,549,000,000	\$2,226,000,000	\$5,950,000,000

Notes:

- Equity for 2009-15 reduced by \$20.5 million to reflect Equity funds needed for tolls.
- Equity for 2016-25 reduced by \$33 million to reflect GARVEE Bond repayment (2016-2022)

10.1.9 Public Transportation Funds

A description of funding available for public transportation in the MUMPO area through 2035 is included in the Public Transportation chapter (Chapter 11.2). MUMPO does not operate public transportation or select projects, except for some limited funds through New Freedom and Jobs Access and Reverse Commute programs, so it relied on information provided by CATS and Union County in development of the LRTP. These funds and future projects were not included in the fiscally-constrained project lists as the two entities have separate project funding and implementation processes.

CATS recently had to delay project completion dates due to escalating costs and declining or stagnant revenues. Because of these issues there is discussion of Tax-Increment Financing (TIF) near selected North Corridor stations and through a special tax district along the Charlotte Streetcar corridor. These options are preliminary at this time.

10.2 New Revenue Forecasts

In order to evaluate the impact of additional revenues on the *2035 Long Range Transportation Plan*, MUMPO staff considered several different funding scenarios (see below) that assumed additional revenues, with varying project lists that resulted from the additional revenues. MUMPO staff developed project lists that were evaluated for effectiveness in reducing congestion and air pollution.

- ▶ Due to the limited effect the additional funds would have on the project list, as well as the economic downturn still in effect in late 2009, **the MUMPO Board decided to approve the “No New Revenue” scenario** on November 18, 2009.

Revenue Forecast Scenarios

1. No New Revenue

The first scenario assumed no additional revenues beyond those in existing revenue assumptions through 2035. Both the roadway and transit project lists would be financially-constrained by horizon year based on existing revenue assumptions.

2. Additional ¼ Cent Sales Tax for Roads for both Mecklenburg and Union Counties

The second scenario assumed an additional \$30 million per year in Mecklenburg County and \$4 million per year in Union County for highways. This additional revenue would fund an additional \$914 million (\$344 million (2016-2025) and \$462 million (2026-2035) in Mecklenburg County and \$46 million (2016-2025) and \$62 million (2026-2035) in Union County) for highway projects. The transit project list would be the same as the first scenario.

3. Additional ¼ Cent Sales Tax for Transit in Mecklenburg County

The third scenario assumed an additional \$30 million per year in Mecklenburg County for transit. This additional revenue would fund an additional \$806 million (additional \$344 million (2016-2025) and \$462 million (2026-2035) in Mecklenburg County for transit projects. The roadway project list would be the same as the first scenario.

4. Additional ¼ Cent Sales Tax Split Between Roads and Transit in Mecklenburg and Union Counties

The fourth scenario assumed an additional \$30 million per year in Mecklenburg County for highways and transit and \$4 million per year in Union County for highways. This additional revenue would fund the financially-constrained highway project list PLUS approximately \$457 million for highway projects in Mecklenburg and Union Counties and approximately \$403 million for transit projects in Mecklenburg County.

11.0

TRANSPORTATION PLAN COMPONENTS

- 11.1 Regional Travel Demand Model
- 11.2 Streets and Highways
- 11.3 Public Transportation
- 11.4 Bicycle
- 11.5 Pedestrian
- 11.6 Greenway
- 11.7 Freight
- 11.8 Other Modes

11.1 Regional Travel Demand Model

The Metrolina Regional Travel Demand Model was used to predict magnitudes and flows of travel based on land use projections and characteristics of highway and transit networks. More people and more jobs mean more trips will be made. In the model, trips are classified by trip purpose. Broadly, trips can be grouped into three purposes:

- **Home-based Work:** These trips are from work to home and from work back to home. They occur more heavily in peak hours and are a large component of congestion.
- **Home-based Other:** These trips begin or end at home and cover the range of other trips that people make – those to or from school, shopping, visiting friends, or appointments.
- **Non-home-based:** These are the trips made while people are out of their residence, either at work (e.g. a trip to lunch), or between stops while running errands (e.g. a trip from the grocery store to the cleaners). Generally, given their nature, non-home-based trips are shorter than home-based trips.

Trips can be made on highways, either driving alone or carpooling/vanpooling with others; by riding transit; or by walking or biking. Two other major groups of travelers use the highway system:

- **Commercial vehicle and truck trips,** and
- **External / Internal trips:** these are the trips that start in the region and end somewhere outside the region (e.g. a trip to the beach) or are trips that begin outside the region

with a destination inside (e.g. a trip by a resident of Catawba county traveling to a job in uptown Charlotte). This group of trips also includes trips that pass through the region without stopping.

Tables 11.1 and 11.2 (below) show the growth in the number of person trips for Mecklenburg County and the portion of Union County within MUMPO, respectively. A person trip is made by any person traveling on any of the highway or transit modes that exist or are projected to exist within MUMPO's planning area.

Table 11-1:

Mecklenburg County Person Trips

Mecklenburg County	2005	2010	2015	2025	2035
Home-based Work	643,600	712,800	785,100	939,500	1,076,300
Home-based Other	1,949,000	2,164,400	2,374,900	2,803,700	3,200,800
Non-home-based	1,551,500	1,725,600	1,892,100	2,265,800	2,625,800
Commercial/Truck	325,200	345,500	374,900	434,000	489,200
Internal-External	123,400	137,100	147,900	176,000	203,400
Total Trips	4,592,700	5,085,400	5,574,900	6,619,000	7,595,500
Annual Pct. Change		2.1%	1.9%	1.7%	1.4%

Table 11-2:

Union County (MUMPO portion only) Person Trips

Union County (MUMPO Portion Only)	2005	2010	2015	2025	2035
Home-based Work	63,200	78,800	97,400	136,600	173,100
Home-based Other	247,300	303,100	367,400	507,800	637,200
Non-home-based	146,400	179,700	219,400	312,100	392,900
Commercial/Truck	39,300	48,900	60,700	83,800	99,100
Internal-External	8,300	10,600	13,400	20,100	25,700
Total Trips	504,500	621,100	758,300	1,060,400	1,328,000
Annual Pct. Change		4.2%	4.1%	3.4%	2.3%

In order to keep pace with the projected growth in person trips, more highway and transit capacity will need to be provided. The location and amount of capacity added will determine how many trips can be served adequately by highways or transit.

The projects listed in Chapter 11.2 (Streets and Highways) will add freeway and thoroughfare capacity to the network. The best way to measure the quantity of capacity provided by these projects is by the statistic of lane miles. Lane miles are the length of a street segment multiplied by the number of lanes. By measuring lane miles, both new facilities and road widening projects (adding lanes) are reflected in the totals.

In addition to the capacities of thoroughfare miles, many miles of local streets are added annually through the land development process. The local street system serves primarily to connect parcels / sites with the thoroughfare system. Over the past ten years, local street miles have grown roughly at the same rate as population. Tables 11.3 and 11.4 (below) show the projected growth in lane miles included in this long-range plan.

Table 11-3:
Roadway Lane Miles in Mecklenburg County

Mecklenburg County	Roadway Lane Miles ¹				
	2005	2010	2015	2025	2035
Freeway	617	705	765	798	834
Expressway	38	38	54	66	80
Class II Major	107	107	98	87	75
Major Thoroughfare	1,541	1,556	1,612	1,628	1,662
Minor Thoroughfare	585	588	593	596	598
Collector Street	430	440	450	445	448
Local Street (estimated) ²	2,332	2,580	2,835	3,322	3,743
Ramp	86	92	100	101	103
Freeway Ramp	34	43	50	50	50
HOV	15	15	26	26	26
Total Lane Miles	5,785	6,165	6,583	7,121	7,618
Annual Pct. Change		1.3%	1.3%	0.8%	0.7%

Table 11-4:
Roadway Lane Miles in Union County (MUMPO portion only)

Union County (MUMPO Portion Only)	Roadway Lane Miles ¹				
	2005	2010	2015	2025	2035
Freeway	0	0	74	74	74
Expressway	0	0	2	2	2
Class II Major	85	85	81	81	81
Major Thoroughfare	372	381	387	391	391
Minor Thoroughfare	357	358	362	362	362
Collector Street	167	167	167	169	169
Local Street (estimated) ²	1,681	1,860	2,198	2,898	3,567
Ramp	1	1	6	6	6
Freeway Ramp	0	0	1	1	1
HOV	0	0	0	0	0
Total Lane Miles	2,664	2,852	3,278	3,982	4,653
Annual Pct. Change		1.4%	2.8%	2.0%	1.6%

¹ Lane Miles = length of roadway segment, times number of lanes

² Local Street Miles are estimated using travel demand model and Urban Area Security Initiative (UASI) regional centerline coverage. Growth rates are based on population growth (see Tables 11-1 and 11-2)

Roadway usage is best measured by the number of vehicle miles traveled (VMT). VMT is the sum of all miles of vehicular trips made over all segments of the roadway system. Table 11.5 and Table 11.6 show the estimates of average daily VMT in Mecklenburg County and the MUMPO portion of Union County, respectively.

Table 11-5:
Daily Vehicle Miles Traveled in Mecklenburg County

Mecklenburg County	Vehicle Miles Traveled (000)				
	2005	2010	2015	2025	2035
Freeway	9,240	10,512	12,244	14,032	15,602
Expressway	386	415	663	933	1,295
Class II Major	1,185	1,300	1,174	1,134	966
Major Thoroughfare	9,532	10,207	10,909	12,419	13,881
Minor Thoroughfare	2,397	2,597	2,799	3,361	3,815
Collector Street	972	1,049	1,158	1,430	1,673
Local Street (estimated) ²	4,538	5,005	5,522	6,572	7,525
Ramp	548	620	709	806	889
Freeway Ramp	310	378	482	550	596
HOV	25	25	130	163	193
Total VMT (000)	29,131	32,109	35,792	41,401	46,435
Annual Pct. Change		2.0%	2.2%	1.5%	1.2%

Table 11-6:
Daily Vehicle Miles Traveled in Union County (MUMPO portion only)

Union County (MUMPO Portion Only)	Vehicle Miles Traveled (000)				
	2005	2010	2015	2025	2035
Freeway	0	0	518	625	757
Expressway	0	0	28	29	31
Class II Major	626	683	559	664	743
Major Thoroughfare	1,269	1,488	1,674	2,097	2,443
Minor Thoroughfare	777	948	1,076	1,446	1,759
Collector Street	135	175	192	305	413
Local Street (estimated) ²	823	1,033	1,273	1,874	2,419
Ramp	3	4	15	19	23
Freeway Ramp	0	0	0	0	0
HOV	0	0	0	0	0
Total Lane Miles	3,624	4,330	5,334	7,058	8,588
Annual Pct. Change		3.6%	4.3%	2.8%	2.0%

Improvements to the transit system are an important component of the long range plan. These improvements are described in Chapter 11.3 (Public Transportation) of this plan. Light rail service began in Charlotte in 2007. Ridership has been strong, and the Charlotte Area Transit System (CATS) plans to extend the light rail line, open a commuter rail line and a streetcar line during the next 25 years (please see Chapter 11.3). In addition to building new premium transit lines, CATS will continue to expand the bus system that serves other areas and supports the premium lines.

Vehicle service miles – the miles traveled by transit buses and trains operating on routes picking up or dropping passengers – is a good measure of estimating the level of transit service. Table 11.7, below, shows the daily vehicle service miles, by transit mode, projected to be provided during the period of this long-range plan. Table 11.8 shows the number of passengers projected to use the transit services during each average weekday.

Table 11-7:
CATS Daily Transit Vehicle Service Miles

CATS Transit Vehicle Miles	2005	2010	2015	2025	2035
Light Rail		1,700	1,700	4,100	4,100
Streetcar					1,700
Commuter Rail				1,200	1,200
Regional Express Bus	3,800	3,800	3,800	3,700	3,700
Express Bus	7,800	6,900	6,900	6,600	6,600
Feeder Bus	4,500	4,100	4,100	5,500	5,500
Local Bus	25,500	28,600	28,600	31,500	32,400
Shuttle Bus	1,100	800	800	800	800
Total VMT (000)	42,700	45,900	45,900	53,400	56,000
Annual Pct. Change		1.5%	0.0%	1.5%	0.5%

Table 11-8:
CATS Daily Transit Rides

CATS Total Riders	2005	2010	2015	2025	2035
Light Rail		15,800	18,200	46,700	55,800
Streetcar					12,500
Commuter Rail				4,200	5,600
Regional Express Bus	1,400	1,300	1,400	2,000	2,200
Express Bus	5,800	6,300	6,900	7,500	8,400
Feeder Bus	2,500	2,800	3,100	6,900	9,300
Local Bus	40,600	55,000	60,700	84,400	98,400
Shuttle Bus	3,100	3,600	4,300	7,400	9,400
Total Lane Miles	53,400	84,800	94,600	159,100	201,600
Annual Pct. Change		9.7%	2.2%	5.3%	2.4%

11 Transportation Plan Components

11.2 Streets and Highways

The Mecklenburg-Union MPO planning area consists of a broad network of roadway corridors, ranging from local streets serving the needs of a neighborhood to multi-lane freeways and expressways serving regional and national trip purposes.

This network is the primary means by which people and goods are transported within and through the region. The network includes about 5,800 total miles, with approximately 55% (3,137 miles) maintained by municipalities in the urban area.

Table 11-9:
Maintenance Responsibility for Roadways in Urban Area

Area	Classification	State Maintained	Locally Maintained
MUMPO	Interstate	103 (miles)	--
MUMPO	Primary	480	--
MUMPO	All	2,620	3,137
Mecklenburg County	All	1,029	2,851
Union County	All	1,591	286
City of Charlotte	All	--	2,368
Other Towns	All	--	769

11.2 Streets and Highways

11.2.1 Programmed Roadway Projects

Several highway and roadway projects, now in various stages of implementation, will provide additional capacity to meet the continuing growth projected for the Mecklenburg-Union MPO. These committed projects—presently in various stages of planning, design, land acquisition and construction—will help meet intra-regional and interstate travel demand generated by the population, employment and travel growth expected in upcoming years .

The planned roadway projects are funded either by the North Carolina Department of Transportation (NCDOT), Federal Highway Administration (FHWA), or municipalities. Some roadway improvements, such as expansion of the local/collector street system, will continue to be accomplished by developers through the rezoning, subdivision and permitting process within the various MUMPO jurisdictions.

The roadway projects for which funding has been committed through 2015 are listed in *Table 11-10* (facing page) and shown in [Figure 11-2](#), Funded and Committed Projects, found in the Map Gallery at the end of this document. Minor intersection and safety projects are not included in the table or map because those projects are not deemed to be regionally significant projects within the context of the *2035 Long-Range Transportation Plan*.

■ Street and Highway Plan

MUMPO's approach to planning for highways and streets has been to balance competing interests when deciding how or when to expand or extend the existing thoroughfare network.

The underlying premise of this approach is that it is not financially or politically possible to build our way out of congestion by constructing more through lanes along every congested roadway. The best way to respond to the increasing demand on the road network is to look at options from a network perspective, meaning that changes to one part of the network will impact other portions of the network, either positively or negatively.

■ Relationship to the Thoroughfare Plan

MUMPO has identified a roadway system that, in conjunction with local streets, is expected to serve the area's future traffic levels. The Mecklenburg-Union Thoroughfare Plan, which was last adopted in November 2004, identifies the future major roadways.

The Thoroughfare Plan map, [Figure 11-1](#) in the map gallery at the end of the document, shows the alignments of the major roadways based on the following facility types: minor thoroughfares, major thoroughfares, commercial arterials, and freeways and expressways.

Implementation of the Thoroughfare Plan is accomplished through federal, state or local highway construction projects, or by directing private interests to fund or build improvements through the land development process. Larger scale projects are most often built by the public sector, with the private sector building smaller scale projects. Local funding is typically used on streets that are part of a local network, with federal and state funds being the primary source for improvements to the roadways maintained by the North Carolina Department of Transportation's (NCDOT) roadway system.

The Thoroughfare Plan is the primary inventory of roadway projects evaluated for construction prioritization, and serves as the starting point from which MUMPO begins the process to determine which roadways require upgrades in ten or twenty years. The project ranking process used to develop the long-range transportation plan (LRTP) establishes project construction priorities for thoroughfares in both the local and NCDOT construction programs. (The project ranking system is described in *Appendix A*, along with a list of rankings received by roadway projects.)

While the Thoroughfare Plan's focus traditionally has been on facilitating vehicular travel, it also serves as a framework for the implementation of the pedestrian and bicycle transportation network. Roads are not simply a means by which vehicles travel from point to point; they are transportation corridors allowing people to travel by a variety of modes. Not every segment of the Thoroughfare Plan is capable of permitting bicycle or pedestrian travel; however, the vast majority of the network can be part of a multimodal transportation network.

FUNDED AND COMMITTED PROJECTS
Table 11-10: 2035 MUMPO 2035 LRTP Funded and Committed Roadway Projects

Index No.	Ranking	NCDOT STIP #	Regionally Significant	Exempt	Funding Type	Project Name	Project Description / Limits	Existing Facility	Length (mi.)	Jurisdiction	Project Cost (inflated)	Federal Classification
3121	E + C	R-211EC	Y	N	Equity	I-485/Weddington Road	New interchange	n/a	n/a	Char/Matt	\$ 18,250,000	Interstate/Minor Arterial
3159	E + C	U-2507A	Y	N	Equity	Mallard Creek Road	Widening and relocation (4 lanes) from Sugar Creek Road to Harris Boulevard	2-lane road	2.23	Charlotte	\$ 27,924,000	Minor Arterial
3054	E + C	U-2547	N	Y	Equity	Charles Street	Widening (3 lanes) from Sunset Drive to Franklin Street	2-lane road	0.60	Union	\$ 7,336,000	Collector
3146	E + C	U-3809	N	N	Equity	Indian Trail Road	Widening (4 lanes) from Old Monroe Road to Independence Boulevard (US 74)	2-lane road	1.50	Union	\$ 5,900,000	Minor Arterial
3141	E + C	U-209B	Y	N	Equity	Independence Boulevard (US 74)	Improvements (6-in + Managed or Bus Lanes); Sharon Amity Road to Conference Drive	6-lane road, median divided	1.40	Charlotte	\$ 152,700,000	Principal Arterial
3267	E + C	U-3825	N	N	Equity	Stallings Road	Widening (4 lanes)from Old Monroe Rd to Independence Boulevard (US 74)	2-lane road	1.40	Union	\$ 14,271,000	Minor Arterial
3311	E + C	U-3411	Y	N	Equity	West Boulevard Extension	New road (2 lanes) from Steele Creek Road to I-485	n/a	0.62	Charlotte	\$ 1,700,000	Principal Arterial
3239	E + C	U-4401	N	N	Equity	Reedy Creek Road	Relocation (2 lanes) north of Harrisburg Road	2-lane road	0.81	Charlotte	\$ 3,050,000	Collector
3112	E + C	U-3850	Y	N	Equity	I-277/I-77	Add one lane to westbound I-277 bridge over I-77	4-lane bridge	0.50	Charlotte	\$ 3,550,000	Interstate
3165	E + C	U-4713B	N	N	Equity	McKee Road Extension	New road (2 lanes) from John St to Campus Ridge Road	n/a	1.10	Matthews	\$ 3,000,000	Minor Arterial
3205	E + C	R-2632AA	Y	N	Equity	NC 73 East	Widening (4 lanes) from US 21 to NC 115	2-lane road	1.21	Huntersville	\$ 12,109,000	Principal Arterial
502	E + C		N	N	Local	Dixie River Road/NC 160 Connector	New road (2 lanes) from NC 160 to Dixie River Rd	n/a	1.30	Charlotte	\$ 5,200,000	Local
3003	E + C		Y	N	Local	Freedom Drive (NC 27)	Widening (4 lanes) from Edgewood Road to Toddville Road	2-lane road	1.50	Charlotte	\$ 20,250,000	Principal Arterial
3157	E + C	U-5116	N	N	Local	Little Rock Road	Relocation (4 lanes) from Flintrock Road to Freedom Drive (NC 27)	n/a	0.55	Charlotte	\$ 7,500,000	Collector
3238	E + C		N	N	Local	Rea Road	Improvements (3 lanes) from Colony Road to NC 51	2-lane road	1.18	Charlotte	\$ 21,300,000	Collector
22	E + C		N	N	Local	Fred D. Alexander Boulevard	New road (4 lanes) from Freedom Drive (NC 27) to Brookshire Boulevard (NC 16)	n/a	1.88	Charlotte	\$ 36,700,000	Collector

E+C = Existing and Committed

11.2 Streets and Highways

11.2.2 Horizon Year Recommendations

Federal law requires that projects in the long-range transportation plan (LRTP) be categorized in financially constrained horizon years for air quality analysis. Horizon years are no more than ten years apart (and are based on calendar years, beginning January 1, rather than fiscal years).

The projects recommended for implementation in this LRTP respond directly to projected travel demand, MPO policy decisions and available funding. In the following pages, tables with detailed information about each roadway project are presented for each of the three horizon years – 2015, 2025 and 2035 – as well as a map for each horizon year that highlights the location of each major roadway.

■ 2015 Roadway Network

This network includes all of the existing major streets and highways, and over 30 new roadway widening and new construction projects that will be completed and open for traffic by December 31, 2015 (see **Figure 11-3** in the Map Gallery at the end of this document). **Projects completed between now and December 31, 2015** are said to be included in the 2015 Horizon Year. Most of these projects have been or will be fully or partially funded by either the 2009-2015 *State Transportation Improvement Program* (STIP) or by the City of Charlotte *Capital Investment Plan* (CIP). The remainder will have funds appropriated from the City of Charlotte, NCDOT, private developers, or other local governments, to complete them prior to the end of 2015. *Table 11-11* below (found on page 11.2-6) provides information about each project. Notable projects for Horizon Year 2015 include:

- ▶ Completion of I-485, from NC 115 to I-85 near Concord Mills
- ▶ Widening of I-77 from Hambright Road to Catawba Avenue
- ▶ Completion of the Monroe Connector/Bypass from I-485 to Wingate
- ▶ Widening of Statesville Road from Starita Road to Keith Drive
- ▶ Widening of Charles Street from Franklin Street to Sunset Drive
- ▶ Widening of I-85 into Cabarrus County

■ 2025 Roadway Network

The roadway projects in the network include 20 roadway widening and new construction projects that are **proposed for completion between January 1, 2016 and December 31, 2025**, known as the 2025 Horizon Year (see **Figure 11-4** in the Map Gallery at the end of this document). Revenues anticipated from federal, state and local sources will be used to fund these projects. *Table 11-12* below (found on page 11.2-7) summarizes information on each project. Selected notable projects are:

- ▶ Further conversion of Independence Boulevard (US 74) to an expressway from Conference Drive to Krefeld Drive
- ▶ Extension and widening of the West Blvd. from Airport Drive to I-485
- ▶ Widening of John Street/Old Monroe Road from I-485 to Indian Trail Road

- ▶ Widening of I-485 from I-77 to US 74
- ▶ Extension of Clanton Rd. from West Boulevard to Wilkinson Boulevard

■ **2035 Roadway Network**

This network includes ten roadway widening and new construction projects **proposed for completion between January 1, 2026, and December 31, 2035**, known as the 2035 Horizon Year (see **Figure 11-5** in the Map Gallery at the end of this document). All of these projects will be funded by anticipated revenue from federal, state and local sources. *Table 11-13* below (on page 11.2-8) provides project-related information for the 2035 network. Notable projects include:

- ▶ Further conversion of Independence Boulevard (US 74) to an expressway from Krefeld Drive to NC 51
- ▶ Widening of I-485 between US 74 East and Albemarle Road (NC 24-27)
- ▶ Widening of West Catawba Ave. from Jetton Road to NC 73
- ▶ Widening of NC 51 from Matthews Township Parkway to Lawyers Road

▶ **The following pages contain these Tables**

Table 11-11: 2015 Horizon Year **Page 11.2-6**
MUMPO 2035 LRTP Funded Projects for 2010-2015

Table 11-12: 2025 Horizon Year **Page 11.2-7**
MUMPO 2035 LRTP Funded Projects for 2016-2025

Table 11-13: 2035 Horizon Year **Page 11.2-8**
MUMPO 2035 LRTP Funded Projects for 2026-2035

▶ **See the Map Gallery at the end of the document for the following maps:**

[Thoroughfare Plan](#) [Figure 11.1](#)

[Funded and Committed Projects](#) [Figure 11.2](#)

[2015 Horizon Year Projects](#) [Figure 11.3](#)

[2025 Horizon Year Projects](#) [Figure 11.4](#)

[2035 Horizon Year Projects](#) [Figure 11.5](#)

**2015 Horizon Year
Table 11-11: MUMPO 2035 LRTP Funded Projects for 2010-2015**

Index No.	Rank	NC DOT STIP #	Regionally Significant	Funding Type	Project Name	Project Description / Limits	Existing Facility	Length (miles)	Jurisdiction	Project Cost (inflated)	Federal Classification
3121	E + C*	R-2111EC	Y	Equity	I-485/Weddington Rd	New interchange	n/a	n/a	Char/Matt	\$ 18,250,000	Interstate/Minor Arterial
na	E + C	R-2248H	Y	Equity	I-485/Garrison Road	New interchange	n/a	n/a	Charlotte	\$ 1,150,000	Interstate/Local
3159	E + C	U-2507A	Y	Equity	Mallard Creek Road	Widening and relocation (4 lanes) from Sugar Creek Rd to Harris Blvd	2-lane road	2.23	Charlotte	\$ 27,924,000	Minor Arterial
3054	E + C	U-2547	N	Equity	Charles Street	Widening (3 lanes) from Sunset Dr to Franklin St	2-lane road	0.6	Union	\$ 7,336,000	Collector
3146	E + C	U-3809	N	Equity	Indian Trail Road	Widening (4 lanes) from Old Monroe Rd to Independence Blvd (US 74)	2-lane road	1.5	Union	\$ 5,900,000	Minor Arterial
3141	E + C	U-209B	Y	Equity	Independence Blvd (US 74)	Improvements (6-in + Managed or Bus Lanes); Sharon Amity Rd to Conference Dr.	6-lane road, median divided	1.4	Charlotte	\$ 152,700,000	Principal Arterial
3267	E + C	U-3825	N	Equity	Stallings Road	Widening (4 lanes) from Old Monroe Rd to Independence Blvd (US 74)	2-lane road	1.4	Union	\$ 14,271,000	Minor Arterial
3311	E + C	U-3411	Y	Equity	West Blvd Extension	New road (2 lanes) from Steele Creek Rd to I-485	n/a	0.62	Charlotte	\$ 1,700,000	Principal Arterial
3239	E + C	U-4401	N	Equity	Reedy Creek Road	Relocation (2 lanes) north of Harrisburg Rd	2-lane road	0.81	Charlotte	\$ 3,050,000	Collector
3112	E + C	U-3850	Y	Equity	I-277/I-77	Add one lane to westbound I-277 bridge over I-77	4-lane bridge	0.16	Charlotte	\$ 3,550,000	Interstate
3165	E + C	U-4713B	N	Equity	McKee Rd Extension	New road (2 lanes), John St to Campus Ridge Rd	n/a	1.1	Matthews	\$ 3,000,000	Minor Arterial
3205	E + C	R-2632AA	Y	Equity	NC 73 East	Widening (4 lanes), US 21 to NC 115	2-lane road	1.21	Huntersville	\$ 12,109,000	Principal Arterial
502	E + C		N	Local	Dixie River Rd/NC 160 Connector	New road (2 lanes), NC 160 to Dixie River Rd	n/a	1.3	Charlotte	\$ 5,200,000	Local
3003	E + C		Y	Local	Freedom Drive (NC 27)	Widening (4 lanes), Edgewood Rd to Toddville Rd	2-lane road	1.5	Charlotte	\$ 20,250,000	Principal Arterial
3157	E + C	U-5116	N	Local	Little Rock Road	Relocation (4 lanes) from Flintrock Rd to Freedom Dr (NC 27)	n/a	0.55	Charlotte	\$ 7,500,000	Collector
3238	E + C		N	Local	Rea Road	Improvements (3 lanes) from Colony Rd to NC 51	2-lane road	1.18	Charlotte	\$ 21,300,000	Collector
22	E + C		N	Local	Fred D. Alexander Boulevard	New road (4 lanes) from Freedom Dr (NC 27) to Brookshire Blvd (NC 16)	n/a	1.88	Charlotte	\$ 36,700,000	Collector
3067	17	R-2420A	N	Local	City Boulevard Extension	New road (4 lanes) from Neal Rd to Mallard Creek Rd	n/a	0.78	Charlotte	\$ 9,854,000	Local
3000	19		N	Local	Beatties Ford Road	Widening (4 lanes), Capps Hill Mine Rd to Sunset Road	2-lane road	1.23	Charlotte	\$ 13,327,000	Minor Arterial
3032	37	U-5130	N	Local	Jim Cooke Road	New road (2-3 lanes), Northcross Dr. Ext. to Bailey Road	n/a	0.20	Cornelius	\$ 5,000,000	Local
3214	45	U-5131	N	Local	Northcross Drive Extension	New road (3 lanes) from end of Northcross Dr to Westmoreland Road	n/a	1.35	Cornelius	\$ 3,000,000	Local
3133	88	I-5127	Y	Local	I-77/Westmoreland Rd	New Interchange, SPUJ	n/a	n/a	Cornelius	\$ 35,000,000	Interstate/Local
3132	93	I-5126	Y	Local	I-77 Widening (North)	Adding Managed lanes (1, each way)(6 lanes) from Hambright Rd to Catawba Ave.	4-lane road, median divided	5.72	Corn/Hunt/Char	\$ 22,000,000	Interstate
3289	103	U-5128	N	Local	Statesville Road (US 21)	Widening (4 lanes) from Northcross Center Ct to Boat House Ct	2-lane road	1.83	Cornelius	\$ 10,000,000	Minor Arterial
3317	122	U-5129	N	Local	Westmoreland Road	Widening (4 lanes) from W. Catawba Ave to US 21	n/a	1.03	Cornelius	\$ 15,000,000	Local
3268	130		N	Local	Statesville Road	Widening (4 lanes) from Starita Rd to Keith Dr	2-lane road	1.92	Charlotte	\$ 21,280,000	Minor Arterial
3340	160		N	Local	S. Trade Street	Widening (4 lanes), Fullwood Ln to Weddington Rd	2-lane road	0.75	Matthews	\$ 8,775,000	Minor Arterial
3008	188		N	Local	Idlewild Road	Widening (4 lanes), Piney Grove Rd to Drifter Dr	2-lane road	0.50	Charlotte	\$ 8,000,000	Minor Arterial
3316	201		N	Local	Westmoreland Road	Widening (4 lanes), US 21 to Washam-Potts Rd	3-lane road	0.24	Cornelius	\$ 2,149,000	Local
3019	7	R-2248E	N	Loop	Alexanderana Rd.	New road (4 lanes) from NC 115 to Eastfield Rd	n/a	0.91	Char/Hunt	\$ 21,456,000	Local
3005	92	R-2248E	Y	Loop	I-485	New freeway (8 lanes) from NC 115 to I-85	n/a	5.40	Char/Hunt	\$ 167,500,000	Freeway/Expressway
3135	186	R-2123CE	Y	Loop	I-85 / I-485	Construct new interchange	n/a	n/a	Charlotte	\$ 80,000,000	Freeway/Expressway
3169	1	R-3329/ R-2559	Y	Toll	Monroe Connector/Bypass	New freeway (4 lanes), I-485 to Hwy 74 (Wingate) -- (toll road)	n/a	19.70	Union	\$ 813,500,000	Principal Arterial
3094	243	U-3321	Y	Toll	Garden Parkway	New freeway (4 lanes), I-485 to Gaston County line -- (toll road)	n/a	1.90	Charlotte	\$ 260,000,000	Freeway/Expressway

For a map of the projects, see Figure 11-3 in the Map Gallery at the end of this document

2025 Horizon Year
Table 11-12: MUMPO 2035 LRTP Funded Projects for 2016-2025

Index No.	Rank	NC DOT STIP #	Regionally Significant	Funding Type	Project Name	Project Description / Limits	Existing Facility	Length (miles)	Jurisdiction	Project Cost (Inflated)	Federal Classification
3010	2		Y	Equity	Independence Blvd (US 74)	Improvements (6-in + HOV or Bus Lanes) from Conference Dr to Village Lake Dr	6-lane road	1.53	Charlotte	\$ 107,853,000	Principal Arterial
3009	3		Y	Equity	Independence Blvd (US 74)	Improvements (6-in + HOV or Bus Lanes) from Village Lake Dr to Krefeld Dr	4/6-lane road	0.46	Charlotte	\$ 58,974,000	Principal Arterial
3006	4	I-4733	Y	Equity	I-77 / Catawba Avenue	Convert interchange from simple diamond to urban diamond	simple diamond interchange	n/a	Cornelius	\$ 115,413,000	Interstate/Principal Arterial
3192	5		Y	Equity	Old Statesville Rd (NC 115)	Widening (4 lanes) from Bailey Rd to Potts St	2-lane road	1.65	Cornelius	\$ 48,306,000	Principal Arterial
3191	9		Y	Equity	Old Statesville Rd (NC 115)	Widening (2 lanes) from Potts St to County line	2-lane road	3.69	Corn/Dav	\$ 40,869,000	Principal Arterial
3012	11	U-4714	N	Equity	John St / Old Monroe Road	Widening (4 lanes) from I-485 to Indian Trail Rd	2-lane road	2.76	Matt/Union	\$ 70,219,000	Collector
3312	15		Y	Equity	West Blvd Extension	Widening (4 lanes) from Steele Creek Rd to I-485	2-lane road	0.66	Charlotte	\$ 12,860,000	Principal Arterial
3096	18		Y	Equity	Gilead Road	Widening (4 lanes) from US 21 to NC 115	2-lane road	0.67	Huntersville	\$ 13,655,000	Minor Arterial
3016	24		N	Equity	Airport Road	Widening (4 lanes) from Goldmine Road to NC 84	2-lane road	1.12	Union	\$ 23,145,000	Principal Arterial
3313	16		Y	Local	West Boulevard Relocation	New road (4 lanes) from Yorkmont Rd to Steele Creek Rd	n/a	1.3	Charlotte	\$ 29,985,000	Principal Arterial
3314	29		Y	Local	West Boulevard Relocation	New road (4 lanes) from Airport Dr to Yorkmont Rd	n/a	2.52	Charlotte	\$ 14,196,000	Principal Arterial
3068	50		N	Local	Community House Rd Extension	New road (4 lanes) from Endhaven Ln to south of I-485	n/a	0.31	Charlotte	\$ 16,678,000	Local
3002	55		N	Local	Clanton Road Extension	New road (2 lanes) from West Blvd to Wilkinson Blvd	n/a	0.86	Charlotte	\$ 29,827,000	Local
3225	74		N	Local	Pavilion Boulevard Extension	New road (2 lanes) from Salome Church Rd to N. Tryon St (US 29)	n/a	0.17	Charlotte	\$ 7,204,000	Local
3279	87	U-5008	N	Local	Sugar Creek Rd/ Norfolk Southern Railroad	Grade separation with new railroad bridge	at-grade intersection	n/a	Charlotte	\$ 77,182,000	Minor Arterial
3217	172		N	Local	Northeast Parkway Extension	New road (2 lanes) from NC 51 to Matthews-Mint Hill Rd	n/a	0.66	Matthews	\$ 9,406,000	Local
3118	113	R-4902	Y	Loop	I-485	Widening (6 lanes) from I-77 to Johnston Rd	4-lane road, median divided	6.6	Charlotte	\$ 128,002,000	Freeway/ Expressway
3120	131		Y	Loop	I-485	Widening (6 lanes) from Johnston Rd to Providence Rd	4-lane road, median divided	4.33	Charlotte	\$ 109,402,000	Freeway/ Expressway
3116	134		Y	Loop	I-485	Widening (6 lanes) from NC 16 (Providence Rd) to US 74	4-lane road, median divided	5.94	Char/Matt	\$ 155,207,000	Freeway/Expressway

For a map of the projects, see Figure 11-4 in the Map Gallery at the end of this document

**2035 Horizon Year
Table 11-13: MUMPO 2035 LRTP Funded Projects for 2026-2035**

Index No.	Rank	NC DOT STIP #	Regionally Significant	Funding Type	Project Name	Project Description / Limits	Existing Facility	Length (miles)	Jurisdiction	Project Cost (inflated)	Federal Classification
3011	6		Y	Equity	Independence Blvd (US 74)	Improvements (6-ln + HOV or Bus Lanes) from Krefeld Dr to Hayden Way	4-lane road, median divided	1.19	Charlotte	\$ 192,779,000	Principal Arterial
3142	10		Y	Equity	Independence Blvd (US 74)	Improvements (6-ln + HOV or Bus Lanes) from Hayden Way to NC 51	4-lane road, median divided	1.50	Char/Matt	\$ 115,268,000	Principal Arterial
3013	12	U-5007	Y	Equity	NC 51	Widening (4 lanes) from Matthews Township Pkwy to Lawyers Rd	2-lane road	3.93	Matt/Mint	\$ 97,253,000	Principal Arterial
3270	13		N	Equity	Statesville Road (US 21)	Widening (4 lanes) from Harris Blvd to Gilead Rd	2-lane road	4.48	Char/Hunt	\$ 142,403,000	Minor Arterial
3300	20	R-2555B	Y	Equity	W. Catawba Avenue	Widening (4 lanes) from Jetton Rd to NC 73	2-lane road	2.37	Cornelius	\$ 57,011,000	Principal Arterial
3337	28		N	Equity	Bridgford/Northdowns Connector	New road (2 lanes) from Bridgford Lane to Northdowns Lane	n/a	0.4	Huntersville	\$ 25,335,000	Local
3040	42		Y	Equity	Billy Graham Pkwy/Morris Field Drive	New Grade Separation	at-grade intersection	n/a	Charlotte	\$ 8,534,000	Freeway/Expressway
3026	57		N	Local	Arequipa Drive Extension	New road (2 lanes) from Margaret Wallace Rd to Sam Newell Rd	n/a	1.30	Char/Mint	\$ 35,929,000	Local
3108	61		N	Local	Hucks Road Extension	New road (4 lanes) from Old Statesville Rd (NC 115) to Statesville Rd (US 21)	n/a	1.06	Charlotte	\$ 33,022,000	Local
3077	90		N	Local	Eastern Circumferential	New road (4 lanes) from University City Blvd (NC 49) to Rocky River Rd	n/a	2.86	Charlotte	\$ 146,429,000	Collector
3119	226		Y	Loop	I-485	Widening (8 lanes) from I-77 to Johnston Rd (including Johnston Road Flyover)	6-lane road, median divided	4.33	Charlotte	\$ 496,470,000	Freeway/Expressway
3117	253		Y	Loop	I-485	Widening (6 lanes) from US 74 to Albemarle Road	4-lane road, median divided	9.40	Matt/Mint	\$ 316,464,000	Freeway/Expressway

For a map of the projects, see Figure 11-5 in the Map Gallery at the end of this document

11 Transportation Plan Components

11.3 Public Transportation

11.3.1 Existing System

Fixed-route transit service in the MUMPO area is available primarily within Mecklenburg County. The only fixed-route, fixed-schedule transit service in Union County is one express route connecting Uptown Charlotte and Marshville.

11.3.1.1 Mecklenburg County Public Transportation

Mecklenburg voters passed a half-cent sales tax in 1998 to fund both long- and short-range improvements to transit service in the region. The Charlotte Area Transit System (CATS) was formed in 2000 as a result.

The CATS mission is to enhance the quality of life by “providing outstanding community-wide public transportation services, while proactively contributing to progressive, sustainable regional growth and development.”

CATS is a department of the City of Charlotte, but its policy board is the Metropolitan Transit Commission (MTC). The MTC is comprised of the chief elected official of each member jurisdiction and the Board of Transportation member from NCDOT’s Tenth Division. The MTC sets policy, approves CATS’ detailed work plans and budgets, and prioritizes transit projects for the system.

CATS provides:

- light rail rapid transit service;
- fixed-route local, express and regional express bus services;
- paratransit service;
- community/neighborhood-based shuttle services; and a
- multi-county vanpool program for work trip origins/destinations in Mecklenburg County.

■ Light Rail Service

After several years of planning, design and construction, the LYNX Blue Line began revenue service in November, 2007. The line is 9.6 miles long with 15 stations along its length.

Ridership quickly exceeded first-year projections of 9,600 passengers per day, with 16,000 passengers per day for several months of the first year of operation. Over the entire course of 2009, daily boardings averaged slightly less than 15,000 passengers. Total ridership in FY 2009 was 5,237,244, with 37,789 revenue hours of service.

Service is available from 5:25 a.m. to 1:12 a.m. The LYNX Blue Line operates at 10-minute headways in the morning and afternoon peaks, 15-minute headways during midday, and 20-minute headways at night. Fares are the same as local bus service: \$1.50 per one way trip.

CATS also operates the Charlotte Trolley service along a portion of this same corridor, from Atherton Mill to 9th Street.

The Historic Charlotte Trolley uses replica electric trolleys manufactured by GAMACO and serves both a transportation and tourism role. The Trolley operates scheduled service only on Saturday (10:00 a.m. to 5:00 p.m.) and Sunday (10:30 a.m. to 5:30 p.m.).

■ Fixed-Route Service

The fixed-route service operated by CATS includes 39 local routes, 13 express routes, and 8 regional commuter routes. Ridership in FY 2009 was approximately 21 million boardings and CATS delivered 11.6 million revenue miles of service.

The fixed routes operated by CATS—local and express—are shown on the *CATS Existing System Map* ([Figure 11-6](#) in the Map Gallery at the end of this document). Express bus service during weekday periods is provided to Cabarrus, Gaston, Iredell, Lincoln, Union and York counties.

The transit fleet includes 252 forty-foot buses, 40 thirty-foot buses for shuttles and community/neighborhood services, 15 rubber-wheeled trolleys for the Gold Rush downtown circulator service, and ten over-the-road coaches for commuter services. Buses for the local and express route services are accessible (low floor or lifts) and are equipped with bicycle racks.

Services are available in varying frequencies, seven days a week, from about 5:00 a.m. to 2:00 a.m. Fares are \$1.50 for local service, \$2.00 for express service and \$3.00 for out-of-county commuter service.

■ Sprinter Service

In September, 2009, CATS introduced Sprinter, an enhanced bus service that provides a direct connection from Center City Charlotte to the Charlotte-Douglas International Airport. Enhanced bus service includes several passenger amenities such as frequent service (20 minutes on weekdays, 30 minutes on nights and weekends), efficient stop locations and signature shelters. The service uses specially-designed hybrid fueled buses and is branded as a specialized service with a different logo and paint scheme.

■ Paratransit Service

Paratransit service to qualified disabled residents in Mecklenburg County is provided by CATS Special Transportation Services (STS). Ridership in FY 2009 was 243,123, with 130,881 revenue hours of service.

STS is a demand response service, aided by mobile data terminals (MDCs), Automatic Vehicle Location (AVL) and computer dispatching and scheduling software. The active fleet includes 85 vehicles.

STS provides the paratransit service required by the Americans with Disabilities Act of 1990. The ADA requires that paratransit service be provided to people who request pickups and drops-offs within three-quarters of a mile of all local bus routes during the same days and times that local buses operate. All requests for rides within Mecklenburg County beyond the ADA requirements are provided as capacity allows.

STSII is an expansion of the Special Transportation Service that provides limited service to the Towns of Mint Hill, Huntersville, Cornelius, Davidson and the unincorporated areas of the County with reduced operating hours and a premium fare.

STSII is not required by the Americans with Disabilities Act (ADA), so the service operates differently than CATS regular STS service. STSII is provided as capacity allows. Ride requests that meet the requirements of the ADA take priority over STSII rides.

■ **Community Circulators/Neighborhood Services**

CATS provides several services to cover smaller geographic areas with fixed-route or demand-response options.

There are seven shuttle routes that serve the general area around designated transit centers in the service area, as well as targeted neighborhoods located in-between the traditional line haul routes. In addition, there are three Village Rider routes serving the northern Mecklenburg towns and surrounding area. The fare for all of these services is \$0.60.

The Gold Rush Circulator is a no-fare shuttle service that includes two routes served by rubber-wheeled trolley vehicles in downtown Charlotte.

■ **Vanpool Program**

The CATS Vanpool Program coordinates approximately 80 vanpools serving a 100-mile radius around Charlotte. FY 2009 ridership was 260,604. The CATS Vanpool program eliminated an estimated 15 million commuter miles from the regional roadway system in FY 2009.

These vanpools operate seven days a week and provide service to patrons working first through third shifts.

CATS has a database that allows customers to identify vanpools and potential carpool matches by cross-referencing home and work location, and matching those with similar origins and destinations. This feature is described more fully on www.sharetheridenc.com.

▶ Please see the Map Gallery at the end of the document for this map:
[CATS Existing System Map](#) [Figure 11.6](#)

11.3.1.2 Union County Public Transportation

Union County operates a demand-response public transportation system for the residents of Union County. Transportation services are provided to the clients of contracting human service agencies such as the Department of Social Services, Mental Health, ARC of Union County, Vocational Rehabilitation and Veterans. Other eligibility requirements:

- a senior citizen at least 60 years of age,
- a developmentally disabled adult,
- Medicaid client ,
- a veteran eligible for medical treatment at a VA Hospital or clinic,
- physically disabled.

Clients sponsored by a human service agency pay no fare. Residents are able to request service from 7 a.m. to 4:30 p.m., Monday through Friday.

Limited transportation is also available to residents of Union County who are not eligible for transportation service through a human service agency. This is called Rural General Public (RGP) transportation. Such service is available 7 a.m. to 5 p.m., Monday through Friday. Fares range from \$2 for a one-way trip within Union County to \$20 for a round-trip to Charlotte.

According to the most recent information (Fiscal Year 2006-2007), Union County operates 21 vehicles and carries approximately 73,000 passengers per year. Union County provided 648,527 total service miles and 39,544 vehicle service hours. These figures are similar to prior year totals.

In FY 2006-07, Union County had total expenses of \$1,052,000, with revenue of approximately \$940,000. Both of these figures were up, compared to the prior year totals. Expenses increased 13.4 percent due to fuel costs, increased software maintenance costs, insurance expenses, property management costs and salary adjustments. The \$110,465 deficit was covered by local government funds.

11.3 Public Transportation

11.3.2 Public Transportation Plan

Expansion of public transportation within the Mecklenburg-Union MPO continues to be a high priority. Increases in service of varying modes, both short-term and long-term, are being studied and implemented in the plans described below.

A comprehensive Corridor System Plan was completed in 2002 and revised in 2006. The plan calls for the development of enhanced transit service in the five corridors defined in the *2025 Integrated Transit/Land Use Plan*. This comes in the form of light rail (South and Northeast); commuter rail (North); bus rapid transit or light rail (Southeast); and streetcar (West). In addition, the plan calls for development of a Center City streetcar system to serve transit and circulation needs in Charlotte's Uptown, as well as a streetcar route along Central Avenue, Trade Street and Beatties Ford Road to enhance transit service along some of the city's most used transit routes.

The City of Charlotte and other Mecklenburg municipalities have used land use regulations to help implement the *2025 Integrated Transit/Land Use Plan*, primarily through Transit-Oriented Development (TOD) zoning classifications along the South Corridor light-rail line. The North Mecklenburg communities of Cornelius, Davidson, and Huntersville have also implemented zoning regulations that support dense, walkable development near future commuter rail stations.

A Countywide Transit Services Plan was adopted in 2001 by the Metropolitan Transit Commission (MTC) to identify and implement short-term transit improvements (up to five years). The plan advanced these primary objectives:

- Improve service to complement rapid transit corridors.
- Strengthen core routes.
- Serve new areas—particularly Derita, Pineville, Matthews, Cornelius—and create new crosstown routes.
- Consider changes to other routes, areas or services as the need becomes apparent.

The plan identified specific service improvements and included a recommended phasing plan.

The current revenue service fleet for CATS consists of over 300 buses. The vehicles are replaced at the end of their useful life per federal guidelines, and the fleet is expanded in conjunction with service demand as defined in the Countywide Transit Services Plan and reflected in the long range financial plan.

Enhanced Bus Service, similar to the current Sprinter service on Wilkinson Boulevard, will be studied and considered along various high volume transit corridors such as Route 9 (Central Avenue), Route 7 (Beatties Ford Road) and others. These services are best suited for routes in corridors with high existing ridership, significant potential to attract new choice riders and multiple and/or significant origin/destination nodes.

11.3.2.1 Programmed Projects 2009-2015

The following series of projects has been included in the 2009-2015 TIP to carry out Charlotte Area Transit System's commitment to the implementation of both the *2025 Integrated Transit/Land Use Plan* and *Corridor System Plan*. Funding of these projects is anticipated from the Section 5307 Urban Allocation, Section 5309 Capital Program, North Carolina Department of Transportation Full Funding Grant Agreements, statewide earmarks, and other funding sources. A summary of the projects follows.

■ North Davidson Street Bus Renovation and Expansion

CATS is utilizing an American Recovery and Reinvestment Act grant to renovate and expand our existing North Davidson Bus Operations Division complex. This project includes the renovation of the existing bus garage, administration building and the construction of a new parking deck.

■ Bus Facility Improvements

CATS continues to invest in the planning, design and construction of numerous bus facility improvements. This work ranges from coordinating new stop and shelter installations through the land development/capital improvement process, to the installation of new signs, shelters and other passenger amenities through CATS' Transit Amenities program.

■ Intelligent Transportation Systems

CATS proposes the installation of various Intelligent Transportation System components, including automated interactive voice response systems, customer information technology at transit hubs, trip planning software, and other software licenses to improve the operating efficiency of the system.

■ **Miscellaneous Equipment**

This includes the purchase of support equipment, including shop, maintenance and office equipment; schedule racks; and materials necessary for the upkeep of the Davidson Street bus garage.

■ **Neighborhood Transit Centers**

CATS' Development Section works closely with Operations to monitor and assess changing market demands and service needs for new Neighborhood Transit Centers. This ongoing program provides funding to continue the planning, design and construction of neighborhood transit centers identified in the *Countywide Transit Services Plan*. Funding to continue the implementation of these Neighborhood Transit Centers has been programmed.

■ **Park and Ride Lots**

CATS monitors the travel demand and market for drive approach passengers to determine park and ride needs and locations. CATS' goal is to implement park and rides at locations that provide a high capture rate for choice riders and minimize travel time and operational costs to the transit system. The cost of this program is reflected in the capital portion of CATS' long range financial plan.

■ **Transit Right Of Way Protection**

This project provides funds for the protective purchase of future transit corridors, the lease or purchase of existing rail rights-of-way, and participation in public-private joint developments.

■ **Charlotte Gateway Station**

The terminus of the North Transit Corridor project in Charlotte is the planned site of a joint-use multimodal facility that will include a CATS bus transfer facility, Amtrak service and inter-city bus service. Located along the Norfolk-Southern Rail line in the Gateway development of Center City Charlotte, this project will link several local, state and national transit modes in one facility. This facility, near the newly relocated Johnson & Wales University Campus, will become an indispensable node in the region's transportation system.

11.3.2.2 Horizon Year Recommendations

As noted in the preceding Street and Highway Plan (Chapter 11.2), federal law requires that projects in the long-range transportation plan (LRTP) be categorized in financially constrained horizon years for air quality analysis. Horizon years are no more than ten years apart (and are based on calendar years, beginning January 1, rather than fiscal years).

This *2035 Long-Range Transportation Plan* uses the horizon years **2015**, **2025** and **2035**. The transit service improvements for these horizon years are based on the updated financial plan for the MTC-adopted *2030 Transit Corridor System Plan*.

The 2007-2009 economic recession has dramatically reduced CATS' primary revenue source, the half-percent sales tax in Mecklenburg County. This has resulted in significant delays in the

implementation of the *2030 Transit Corridor System Plan*. The following represents the rapid transit projects that CATS believes it can achieve under the current financial conditions.

2015 Transit Improvements

■ Corridor System Planning and Design:

CATS will continue to advance the planning of the *Transit Corridor System Plan* and the design of the LYNX Blue Line Extension and the LYNX Red Line through the 2015 Horizon Year. In addition, studies to advance the Streetcar and to re-evaluate the rapid transit technology for the Southeast Corridor will be completed. However, budget constraints will prevent the completion of another Rapid Transit Corridor by this Horizon Year unless additional funding is identified in the near future.

■ Bus Fleet Expansion:

CATS will continue to expand and optimize fixed route bus transit service throughout the region. Our current plans call primarily for the replacement of older buses that have reached their federal useful life and expansions as needed to meet system demand.

2025 Transit Improvements

■ North Corridor Red Line

The Red Line is planned as a commuter rail service that will use the Norfolk Southern “O” line from the Charlotte Gateway Station on West Trade Street in Uptown Charlotte (central business district) to a station serving southern Iredell County. This project is slated for revenue service to begin by the 2025 Horizon Year.

■ LYNX Blue Line Extension

Formerly the Northeast Corridor, this project is in the federal “New Starts” pipeline for assistance with construction and is currently in the Preliminary Engineering phase of development. The project will extend the current LYNX light rail from 7th Street in Center City Charlotte northeast, through UNC Charlotte’s main Campus to I-485 at North Tryon Street. The project will be complete and open for revenue service by the 2025 Horizon Year.

■ Bus Fleet Expansion

CATS will continue to expand and optimize fixed route bus transit service throughout the region. Our current plans call primarily for the replacement of older buses that have reached their federal useful life and expansions as needed to meet system demand.

2035 Transit Improvements

■ Streetcar

A “Portland, Oregon-type” streetcar service is proposed eastward along Central Avenue to Eastland Mall, westward to Johnson C. Smith University and then north along Beatties Ford Road to I-85. The proposed streetcar route would extend along Trade Street through the

Table 11-14:

CATS Horizon Year Budget Projections, 2010-2035 (inflated dollars)

	2010-2015	2016-2025	2026-2035
Operating Revenue			
Fares, Service Reimbursements, Interest and Other Revenue	319,548,180	903,428,069	1,788,801,867
Maintenance of Effort	111,596,196	185,993,660	185,993,660
Sales Tax (1/2%)	433,937,630	1,155,600,813	1,973,933,126
State Maintenance Assistance	0	0	0
<i>Operating Revenues Sub-Total</i>	865,082,006	2,245,022,543	3,948,728,652
Operating Expenses			
Operating Expenses	737,233,143	1,898,096,453	3,276,731,620
OPERATING BALANCE	\$127,848,862	\$346,926,089	\$671,997,032
Capital Revenue			
Federal/State	381,482,710	1,536,279,382	1,720,219,139
CATS Operating Balances	127,848,862	346,926,089	671,997,032
COPS	0	370,000,000	1,075,000,000
<i>Capital Revenues Sub-Total</i>	509,331,572	2,253,205,472	3,467,216,172
Capital Expenses			
Bus Acquisitions	74,890,005	339,797,913	708,480,501
Other General Capital Outlays	81,028,042	111,534,278	151,109,182
Rail Facilities and Equipment	4,167,000	7,142,193	10,572,190
Corridor Construction	232,166,827	1,597,733,349	1,663,018,538
Debt Service Expense	84,481,408	228,455,297	521,846,874
<i>Capital Expenses Sub-Total</i>	476,733,282	2,284,663,030	3,055,027,285
CAPITAL BALANCE	\$32,598,290	\$(31,457,558)	\$412,188,187
CUMULATIVE BALANCE	\$134,121,098	\$102,663,540	\$514,852,426

center of Uptown Charlotte and will provide another transit link between the Charlotte Gateway Station and the Charlotte Transportation Center in Uptown Charlotte.

■ **Bus Fleet Expansion**

CATS will continue to expand and optimize fixed route bus transit service throughout the region. Current plans call primarily for the replacement of older buses that have reached their federal useful life, and expansions as needed to meet system demand.

▶ Please see the Map Gallery at the end of the document for this map:
[CATS System Corridor Plan](#) [Figure 11.7](#)

Project Identification and Prioritization

CATS and Union County public transportation do not submit projects for evaluation against traditional road projects in the LRTP development process. Both typically operate through their own respective public transportation funding systems, and approve projects through their respective governing boards. CATS does submit smaller eligible projects for funding through CMAQ, Jobs Access and Reverse Commute (JARC), and New Freedom Funds, which require MUMPO approval or endorsement.

MUMPO does currently give points to projects that encourage multi-modal transportation, so public transportation is currently referenced in the current MUMPO project ranking and evaluation process, although it is still largely peripheral.

Recommendation
MUMPO should continue to work with CATS, and increase coordination with Union County, to ensure all public transportation and road projects are developed to complement each other and minimize duplication of efforts.

▶ Please see the Map Gallery at the end of the document for these maps :
[CATS Existing System Map](#) [Figure 11.6](#)
[CATS System Corridor Plan](#) [Figure 11.7](#)

11 Transportation Plan Components

11.4 Bicycle

11.4.1 Bicycle Planning

■ Charlotte-Mecklenburg Bicycle Transportation Plan

Prior to 1999, the North Carolina Department of Transportation and local communities had done little to support bicycling as a mode of transportation.

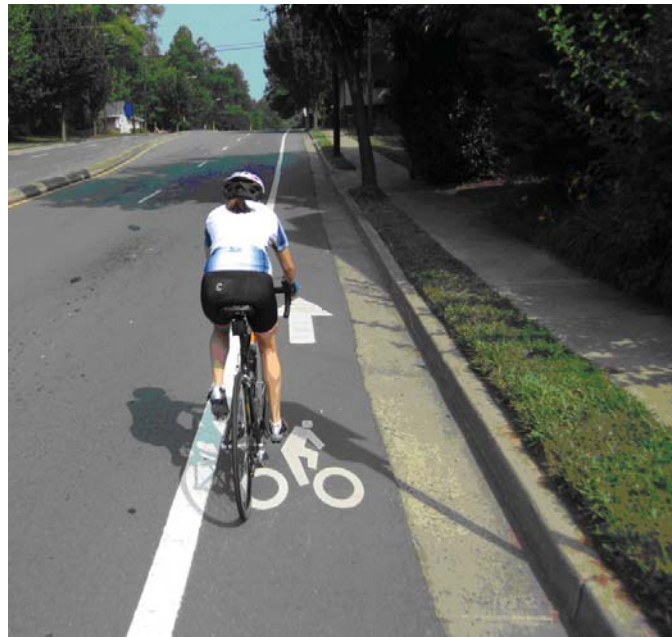
There were no bike lanes, few thoroughfares with wide outside lanes, and no signed bike routes. City streets throughout the MUMPO area were designed, built and maintained with little regard for modes of transportation other than motorized transportation. In some locations, sunken drainage grates (some with unsafe slot layouts), asphalt ridges at gutter edges, tire trapping pavement cracks, and other impediments, were some of the hazards encountered by bicyclists.

Adoption of the Charlotte-Mecklenburg Bicycle Transportation Plan (in 1999 by the Charlotte City Council and the Mecklenburg Board of County Commissioners) marked the start of significant change.

This plan was developed by CDOT with funding from the City and Mecklenburg County and was the first bicycle specific plan in the region. There was a great deal of public input in the planning process, including four public forums and citizens serving on a Bicycle Plan Steering Committee.

The Bicycle Plan called for the addition of bike facilities (bike lanes, wide outside lanes, signage, etc.) when streets are newly constructed, reconstructed, or resurfaced.

The plan also included elements such as education on bicycling issues, bike facilities tied to public transit, and connectivity between neighborhoods and off-street trails.



Since 2000, Charlotte has been striping bicycle lanes to provide designated roadway space for cyclists on some busy roads.

In June, 2000, Charlotte hired a Bicycle Coordinator and began implementation of the 1999 Bicycle Plan. As suggested in the plan, the Bicycle Coordinator established an eleven member Bicycle Advisory Committee (BAC). Appointments to the BAC are made by the City Council (six members), Mayor (three members) and County Commission (two members). The Bicycle

Coordinator works to ensure the needs of bicyclists are given due consideration within normal planning and design processes for roadway projects.

In May, 2006, Charlotte adopted the Transportation Action Plan, the city's first comprehensive transportation planning document addressing multiple transportation modes and its integration with land use. This document detailed policies and goals for bicycle transportation, including the development of a new city plan devoted exclusively to bicycle transportation.

In October, 2007, the City of Charlotte adopted the Urban Street Design Guidelines (USDG's). The USDG's implement the Transportation Action Plan by providing a process to design streets that fit within the context and accommodates all users, including bicyclists, by providing a safer and more comfortable street.

In September, 2008, Charlotte adopted the 2008 City of Charlotte Bicycle Plan. This new plan builds upon the lessons of the 1999 plan and updates bicycle transportation policies and recommendations. Development of the plan was guided by a twenty-member stakeholder group and included well-attended public meetings and workshops. Roadway project managers and Planning Commission staff now refer to the Charlotte Bicycle Plan when roadway and streetscape projects are being planned and designed.

Communities have also promoted bicycling as an alternative to automobile trips, especially for commuting to work and short trips for errands, social visits and recreation. Charlotte's promotional effort is highlighted by "BIKE!Charlotte," a weeklong series of events.



More people are discovering the bicycle provides health benefits while providing convenient transportation for short trips.

The Charlotte Department of Transportation also developed a video that instructs motorists how to share roads with cyclists. This video is available for driver education programs. Other activities include bicycle awareness campaigns, printed materials and a bicycle program page on the CDOT website.

The City of Charlotte has constructed over fifty miles of bike lanes throughout the city, reflecting several measures that have expanded Charlotte's bicycle facilities:

- There are additional bike lanes on projects now in the design phase that will be completed in upcoming years.

- As streets are routinely resurfaced, it has become standard practice to provide a bike lane or additional space in the outside lane when practical.
- Charlotte recently installed signage for three signed routes, with plans to sign five more routes before the end of 2009, totaling almost forty miles.
- The City installed numerous bicycle parking racks – an essential component of a bicycle transportation system – in the center city area and the area known as NoDa. The City is also developing a partnership program with local businesses to further increase the inventory of bicycle parking.
- Mecklenburg County Greenways now offer about 30 miles of off-street pathways, including Mallard Creek Greenway (3.6 miles), upper McAlpine Creek Greenway (8.9 miles), lower McAlpine/McMullen Creek Greenway (5 miles), Torrance Creek Greenway (1.3 mile), Irwin Creek Greenway (1.3 mile) and Little Sugar Creek Greenway (2.4 miles).
- Charlotte is planning other bikeway projects in conjunction with development of future light rail corridors
- Bicycle parking requirements have been adopted as part of the City's zoning ordinance.
- In the spring of 2008, Charlotte was named a Bicycle Friendly Community at the bronze level by the League of American Bicyclists, in recognition of the City's efforts to improve the local bicycle transportation environment.

■ MUMPO Region

Other communities in the MUMPO area have also undertaken bicycle initiatives.

- Matthews and Davidson have adopted bicycle specific master plans. Indian Trail will begin developing a bicycle plan in the fall of 2009,
- Other communities, including Cornelius, Huntersville and Pineville, have included bicycle components as part of a larger or more comprehensive plan, such as greenway/bikeway or development overlay plans.
- Davidson, Huntersville, Cornelius and Matthews have striped dedicated bicycle lanes.
- Bicycle parking requirements have been adopted in Davidson, Huntersville, Indian Trail, Pineville and Waxhaw.
- Several communities, including Cornelius, Davidson, Huntersville, Indian Trail, Matthews and Waxhaw, have appointed a board or commission that considers bicycling issues.

Bicycle Component continued next page

11.4 Bicycle

11.4.2 Bicycle Facilities

Bicycle facilities continue to be included in the early stages of design, and in the next few years there will be many more miles of facilities added to the bicycle network. There are several ways to accommodate bicycle transportation. Below is a brief description of the most commonly used methods.

■ Bicycle Lane

Perhaps the most obvious type of facility is the bicycle lane. This widely recognized road treatment provides an exclusive space for cyclists to ride on a roadway with other traffic. The lane is identified with signs and road markings, and separated from the other travel lanes by a wide painted stripe. Cyclists, especially the casual or recreational rider, may be intimidated by sharing the roadway with faster motor vehicle traffic and often prefer this type of facility. The lane provides cyclists with a sense of roadway space where they can ride adjacent to the flow of traffic in a lane acknowledged and respected by motorists.

Bike lanes generally are used on roadways with a greater volume of traffic, such as arterials and collectors. They are typically not needed on streets of low volume, such as local residential streets, where traffic speeds are lower due to on-street parking and narrower street widths.

■ Wide Outside Lane

The wide outside lane is the result of striping two or more travel lanes to provide additional space in the outside lane. Using this technique, a 48-foot wide four-lane roadway can be striped with a ten foot lane and a fourteen foot lane in each direction, rather than four twelve foot lanes. The resulting wider outside lane will provide sufficient width for overtaking motorists to pass a cyclist without having to merge into the adjacent lane.

■ Edge Stripe

It is a common situation that enough space will not be available to designate a bicycle lane. In cases where there are two or three feet of roadway width available beyond the minimum needed for a travel lane, a painted line designating the right edge of the travel lane could be considered.

Bicyclists can benefit from this line in a number of ways. The line narrows the perception of lane width, which encourages slower vehicle speeds. Also, even though it should not be marked as a



bike lane and cyclists should not feel restricted to the space between the painted line and the edge of pavement, it does provide some space for cyclists. Lastly, a painted edge line can help steer cyclists away from dangerous drop-offs or other hazards along the gutter seam, especially during periods of low light conditions. Along with the edge stripe, "Share the Road" signs should be erected in areas of significant or anticipated bicycle use.

■ Signed Route

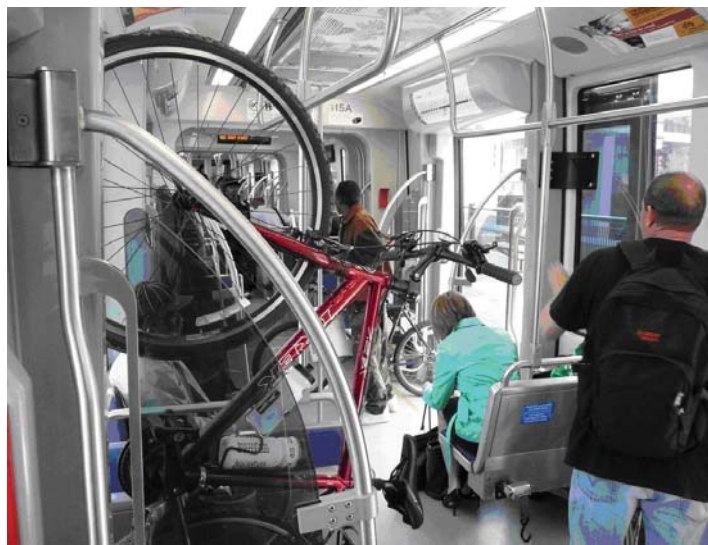
Many cyclists ride on busy high-speed thoroughfares even though they may prefer to take low volume, low speed streets where they feel safer. This is because they, like motorists, are aware of where the thoroughfare goes. While they may consider a low volume street for their journey even though it may be longer and less direct, they are unaware of what route to take and therefore select the one they know. Route signage can assist cyclists in locating routes more suitable for bicycle transportation by providing them with visual cues primarily along the low volume, low speed streets they prefer. Bike route signage may include specific route identifiers such as a number or route name.



Signed and numbered bike routes help cyclists identify routes on more comfortable streets with lower traffic volumes.

■ Bikes on Transit

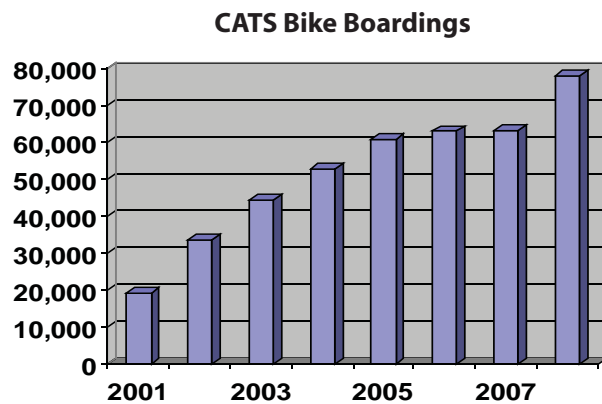
Providing bicycle accommodations on public transit benefits transportation in at least four ways. First, it provides access to destinations that some cyclists may consider too distant for cycling the entire way. Many destinations in Mecklenburg, Union and other counties can be accessed by combining bikes and buses in a single trip. Second, it enables cyclists to bypass intimidating or unsafe trip obstacles, such as free-way interchanges or narrow bridges. Third, it serves as an alternate means of transportation for cyclists in cases of sudden adverse weather, mechanical malfunction or darkness. Finally, bike racks on buses can benefit transit by increasing the service area of each individual route, because some transit users may be willing to bike distances they consider too far for walking.



Many cyclists take advantage of bicycle access to the LYNX light rail to combine bicycle trips with transit for more distant destinations.

All Charlotte Area Transit System (CATS) buses are equipped with bicycle racks. Use of the racks has been growing and experienced a significant peak during record gas prices in 2008. Also, the LYNX light rail line, which opened in 2007, permits bicycles on board the train during all operating hours.

For cyclists that do not need to take their bicycles on transit, many transit access points such as park and ride lots and light rail stations provide bicycle parking facilities such as bicycle racks and lockers.



Bicycle Boardings on CATS Buses by Calendar Year

■ Connectivity

For cyclists, street connectivity is very important. As bicycles are human-powered vehicles, cyclists generally prefer the most direct route to their destinations. Unfortunately, the most direct routes are often the most intimidating, with high traffic volumes, high speeds and relatively narrow lanes shared by all users. Therefore, many cyclists seek alternative routes that may be less direct, but balanced by a greater feeling of security, such as local streets. However, if those streets are characterized by many instances of cul-de-sacs or other terminal features, the cyclist is forced to take a winding route of much longer total distance. These longer routes, should they even exist at all, create a significant obstacle to bicycle transportation.

Such situations discourage cycling for transportation even though destinations may be within easy cycling distance had a less circuitous route been available. Street connectivity provides the



Connectivity before and after: on the left, a cyclist is barred from connecting with the street in the foreground. A simple pathway connecting the streets improves connectivity and helps cyclists identify routes that avoid busy streets.

shorter trip distance important to cyclists. This connectivity can be accomplished by extending streets, by providing short bike path connections between streets, or by bike/pedestrian bridges over obstacles such as streams.

The provision of facilities and programs to support local bicycling has improved in the past few years. More communities are recognizing the practical nature of the bicycle as a transportation choice and are responding to citizen demands that planning for bicycles be a critical component for transportation planning. This will help further develop throughout the MUMPO region a greater network of bicycle accommodations.

11.4 Bicycle

11.4.3 Programmed Bicycle Projects

The City of Charlotte and some other MUMPO communities are incorporating bicycle facilities in the design of their roadways. Several bicycle projects have been completed in the past few years. Examples include:

- Bicycle lanes were striped on Old Pineville Road and Cindy Lane as components of larger construction projects.
- Other bicycle lanes were striped by taking advantage of resurfacing opportunities, such as along Ballentyne Commons Parkway and Barrington Drive.
- Additional bike lanes were provided through comprehensive redesign of the street for improved safety and livability, such as East Boulevard and Tuckaseegee Road in Charlotte and Griffith Street in Davidson.
- Additionally, there are other projects currently under design or construction which will have bicycle facilities when complete, such as Freedom Drive or the Dixie River Road realignment.

Bicycle facilities continue to be included in the early stages of design, and new facilities will be added to the bicycle transportation inventory in the coming years. There are 30.9 miles of programmed roadway projects that incorporate bikeways, primarily bike lanes and wide outside lanes.

The table below identifies the programmed roadway projects that include bicycle improvements. **Programmed projects** have funding identified and are anticipated to begin construction within the next few years.

Table 11-15:

Programmed Roadway Projects with Bikeways

PROJECT NAME	TYPE OF BIKEWAY	FUNDING SOURCE	Length (Miles)
Ballantyne Commons Parkway (NC 16 to Annalexa)	Bike Lanes	Local	0.6
Beatties Ford Road Widening (Capps Hill Mine to Sunset)	Bike Lanes	State or Local	0.7
Bicycle Facilities - Program Funds	n/a	Local	n.a
Catawba Avenue (Jetton Road to Torrence Chapel Road)	WOL*	State	4.1
Central Avenue (Sharon Amity to Reddman)	Bike Lanes	Local	0.5
Charles Street (Sunset Drive to Franklin Sreet)	Bike Lanes	State	0.6
City Boulevard Extension (Neal Road to Mallard Creek Ext)	Bike Lanes	Local	0.8
Dixie River Road/NC 160 Connector	Bike Lanes	Local	0.7

Table continued on next page

Table 11-15 continued

Programmed Roadway Projects with Bikeways

PROJECT NAME	TYPE OF BIKEWAY	FUNDING SOURCE	Length (Miles)
East Boulevard (Dilworth Road West to South Boulevard)	Bike Lanes	Local	0.7
Fred Alexander Boulevard (NC 27 to NC 16)	Bike Lanes	Local	2.5
Freedom Drive Widening (Edgewood Rd to Toddville Rd)	Bike Lanes	Local	1.6
Garden Parkway (I-485 to Gaston County Line)	Bike Path	State	1.9
Idlewild Road Widening (Harris Boulevard to Drifter Drive)	Bike Lanes	Local	0.7
Indian Trail Road (US 74 to Old Monroe Road)	Bike Lanes	State	1.5
Jim Cooke Road (Northcross Drive Ext to Bailey Road)	Bike Lanes	Local	0.6
Little Rock Road Relocation (Flintrock Rd to Freedom Drive)	Bike Lanes	Local	0.7
Mallard Creek Road (Sugar Creek to Harris Boulevard)	Bike Lanes	State	2.4
McKee Road (John Street to Campus Ridge Road)	Bike Lanes	State or Local	0.5
NC 73 East (US 21 to NC 115)	WOL*	State	1.0
Northcross Drive Ext (Northcross Dr to Eagleridge Way Ln)	Bike Lanes	Local	0.9
Rea Road (Colony Road to NC 51)	Bike Lanes	Local	1.0
Stallings Road (Old Monroe Road to Independence Blvd)	Bike Lanes	State	1.3
Statesville Road (Starita Road to Keith Road)	Bike Lanes	Local	1.7
Statesville Road (Northcross Center to Boat House Court)	Bike Lanes	Local	1.4
West Boulevard Ext (Steele Creek Road to I-485)	Bike Lanes	State	0.5
Westmoreland Road (Statesville Rd to Washam-Potts Rd)	Bike Lanes	Local	1.0
Westmoreland Road West (Catawba Ave to Statesville Rd)	Bike Lanes	Local	1.0

*WOL = Wide Outside Lane

Total Miles = 30.9

11.4 Bicycle

11.4.4 Horizon Year Recommendations

■ Bicycle Plan

There are 36.6 miles of roadway projects with bikeways that are proposed in this *2035 Long-Range Transportation Plan* (LRTP)—primarily bicycle lanes and wide outside lanes. *This list is comprised of projects which may be undertaken by the year 2035.*

The 2030 LRTP advanced the implementation of bicycle facilities, and the 2035 LRTP continues to recognize the importance of bicycle transportation as a component of the area's mobility network. This advances the goals of local bicycle transportation plans and other plans adopted by the transportation planning organizations and local governments in the Charlotte-Mecklenburg region.

The development of bikeways in recent years has indicated the growing importance being placed on the bicycle as a transportation mode. This is illustrated by the significant number of proposed projects which include bikeways in the 2035 LRTP.

Table 11-16:

Proposed Miles of Bikeway Improvements

Type of Bikeway Improvement	2015	2025	2035	Total
Bike Lanes	23.9 miles	20.7 miles	15.9 miles	60.5 miles
Wide Outside Lanes	5.1 miles	0	0	5.1 miles
Other	1.9 miles	0	0	1.9 miles
Total	30.9 miles	20.7 miles	15.9 miles	67.5 miles

Table 11-17:

Summary of 2035 Programmed and Proposed Bikeway Improvements

Type of Bikeway Improvement	Programmed Improvements	Proposed Improvements	Total
Bike Lanes	23.9 miles	15.9 miles	60.5 miles
Wide Outside Lanes	5.1 miles	0	5.1 miles
Other	1.9 miles	0	1.9 miles
Total	30.9 miles	15.9 miles	67.5 miles

The 2035 LRTP includes the following types of bikeway facilities:

► **Roadway with bicycle lanes**

Bike lanes are a minimum of four feet in width and are striped next to the gutter lip or edge of shoulder. These lanes are exclusively for the use of bicycles.

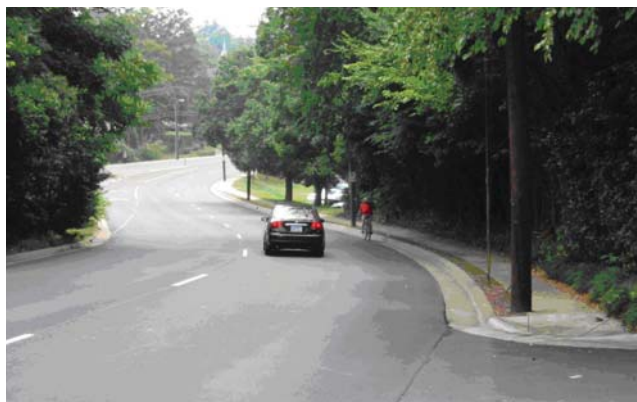
A high majority of MUMPO road projects include bicycle lanes instead of other type of bikeway improvements, indicative of the greater importance given to bike lanes as a bicycle treatment.



► **Roadway with wide outside lanes**

Wide outside lanes are curb lanes that measure at least fourteen feet from the edge of gutter or shoulder to the striped lane line.

These wide lanes allow an automobile and a bicycle to share the same lane more safely. Wide outside lanes are proposed where there is not sufficient pavement width to accommodate bicycle lanes.



► **Other bikeway improvements**

Other improvements could include a separate bike path or paved shoulders suitable for cycling.

► **Lake Norman Bicycle Trail**

The Lake Norman Bicycle Trail is an initiative being pursued within the four county region which surrounds Lake Norman. This initiative will create a bikeway around the lake's entire perimeter. While most of this initiative is outside of the MUMPO planning area, a portion of the bikeway will include northern Mecklenburg County. The Lake Norman Bicycle Trail will consist of a variety of continuous and connected bikeway types to facilitate bicycle transportation around the lake.

Table 11-18:
2035 Long-Range Transportation Plan (LRTP) Proposed Bicycle Facilities

PROJECT NAME	TYPE OF BIKEWAY	FUNDING SOURCE	LENGTH (Miles)	HORIZON YEAR
Airport Road (Goldmine Road to NC 84)	Bike Lanes	State	0.8	2025
Alexanderana Road (NC 115 to Eastfield Road)	Bike Lanes	State	0.9	2025
Clanton Road Ext (West Boulevard to Wilkinson Blvd)	Bike Lanes	Local	1.9	2025
Community House Road Ext (Endhaven Ln to (I-485)	Bike Lanes	State	0.2	2025
Gilead Road (US 21 to NC 115)	Bike Lanes	State	0.7	2025
John Street/Old Monroe Rd (I-485 to Indian Trail Rd)	Bike Lanes	State	2.9	2025
NC 115 (Bailey Road to Potts Street)	Bike Lanes	State	2.1	2025
NC 115 (Potts Street to County Line)	Bike Lanes	State	1.6	2025
NC 115 two-way pair (Mt. Holly-Huntersville Road to 4th Street Ext)	Bike Lanes	Local	0.9	2025
Northeast Parkway Ext (NC 51 to Matthews-Mint Hill Road)	Bike Lanes	Local	0.7	2025
West Boulevard Ext (Steele Creek Road to I-485)	Bike Lanes	State	3.9	2025
West Boulevard Relocaion (Yorkmont Road to Steele Creek Road)	Bike Lanes	Local	1.9	2025
West Boulevard Relocaion (Airport Drive to Yorkmont Road)	Bike Lanes	Local	2.0	2025
Pavilion Boulevard Ext (Salome Church Road to North Tryon Street)	Bike Lanes	Local	0.2	2025
Arequipa Drive/Northeast Parkway (Margaret Wallace to Sam Newell Road)	Bike Lanes	Local	1.3	2035
Eastern Circumferential (NC 49 to Rocky River Road)	Bike Lanes	Local	2.8	2035
Hucks Road Ext (Old Statesville Road to Statesville Rd)	Bike Lanes	Local	1.0	2035
NC 51 (Matthews Township Parkway to Lawyers Road)	Bike Lanes	State	3.9	2035
Statesville Road (Harris Boulevard to Gilead Road)	Bike Lanes	State	4.5	2035
West Catawba Avenue (Jetton Road to NC 73)	Bike Lanes	State	2.4	2035

Total Miles = 36.6

► Please see the Map Gallery at the end of the document for this map:
[MUMPO Existing and Proposed Bike Lanes](#) [Figure 11.8](#)

11 Transportation Plan Components

11.5 Pedestrian

11.5.1 Pedestrian Policy

It should be assumed that people will walk, and plans should be made to accommodate pedestrians. Where people aren't walking, it is often because they are prevented or discouraged from doing so. Either the infrastructure is insufficient, has serious gaps, or there are safety hazards. Aesthetics (e.g., pleasant walking environments that include trees, landscaping, displays of public art, etc.) and destinations within walking distances also play important roles in determining levels of walking."

North Carolina Highway Research Program

"Walking is a basic human activity and almost everyone is a pedestrian at one time or another," says the North Carolina Highway Research Program. In its 2001 report, the NCHRP quotes the American Association of State Highway Transportation Officials (AASHTO): "Pedestrians are part of every roadway environment, and attention should be paid to their presence in rural as well as urban areas."

Pedestrian needs were inadequately addressed by most cities in the U.S. between the late 1950s to the 1980s, and municipalities in the MUMPO area were no different. The predominant suburban style of development during this time generally had no sidewalks and few interconnecting streets. The result is thousands of miles of suburban and semi-rural roads with no sidewalks and limited pedestrian access.

In Charlotte, significant strides have been made during the last decade to re-establish an interconnected, pedestrian-friendly network. Some of the most desirable neighborhoods in the housing market are older neighborhoods designed and constructed during the heyday of trolley and bus systems when street connectivity and sidewalk accessibility were essential. Most communities in MUMPO have responded to the incomplete transportation systems found in previous development patterns by requiring new sidewalks to be provided as development occurs. Many other MUMPO jurisdictions have developed some type of sidewalk construction program using general funds, grants, and Powell Bill funds.

Over the past 18 years, a number of key milestones advanced pedestrian transportation in North Carolina and acknowledged the need to provide for the oldest mode of transportation used by humans:



Residents walking in uptown Charlotte.

North Carolina Milestones

- 1992: The North Carolina Department of Transportation (NCDOT) expanded their bicycle program to include pedestrian transportation. The Office of Bicycle and Pedestrian Transportation was born and later was elevated to Division status within the Department.
- 1993: The North Carolina Board of Transportation set aside \$500,000 for pedestrian projects.
- 1994: NCDOT implemented a policy for providing pedestrian facilities in highway improvement projects.
- 1995: The Board of Transportation allocated \$1.4 million annually for pedestrian facility construction.
- 1996: *Bicycling and Walking in North Carolina: A Long-Range Transportation Plan* was adopted.
- 2009: Board of Transportation approves a “Complete Streets” policy, mandating the consideration of bicycle and pedestrian facilities in all transportation projects.

■ North Carolina Department of Transportation

The Office of Bicycle and Pedestrian Transportation is now known as the **Division of Bicycle and Pedestrian Transportation (DBPT)**. The mission of the DBPT is to improve highways and other public rights-of-way for safe bicyclist and pedestrian use, thus promoting increased bicycling and walking. The 1996 *Bicycling & Walking in North Carolina: A Long-Range Transportation Plan* guides the activities of DBPT in planning for and implementing projects to achieve this vision.

Most construction of pedestrian facilities occurs at the local or Highway Division level. The current statewide allocation for small scale pedestrian improvements still stands at \$1.4 million, divided equally among the state’s 14 highway divisions. In addition to state funding, the 2005 Safe, Accountable, Flexible, Efficient, Transportation, Equity Act: A Legacy for Users (SAFETEA-LU) requires the Department to set aside federal funds from eligible categories for the construction of pedestrian transportation facilities.

North Carolina General Statutes §136-66.2 requires NCDOT to perform **multimodal planning**. It includes requirements for the development of a coordinated transportation system and provisions for streets and highways in and around municipalities. The statute states that “in the development of the plan, consideration shall be given to all transportation modes including, but not limited to, the street system, transit alternatives, bicycle, pedestrian, and operating strategies.”

The NCDOT Division of Bicycle and Pedestrian Transportation and the Transportation Planning Branch created an annual matching grant program—the Bicycle and Pedestrian Planning Grant

Initiative—to encourage municipalities to develop comprehensive bicycle plans and pedestrian plans. This program was initiated in January, 2004, and is currently administered through NC-DOT-DBPT. According to the DBPT, these grants allow municipalities to create pedestrian plans that are then approved and referenced by the NCDOT.

■ NCDOT Complete Streets Policy

In July, 2009, the North Carolina Board of Transportation adopted the following “Complete Streets Policy:”

“The North Carolina Department of Transportation, in its role as stewards over the transportation infrastructure, is committed to:

- ▶ providing an efficient multi-modal transportation network in North Carolina such that the access, mobility, and safety needs of motorists, transit users, bicyclists, and pedestrians of all ages and abilities are safely accommodated;
- ▶ caring for the built and natural environments by promoting sustainable development practices that minimize impacts on natural resources, historic, businesses, residents, scenic and other community values, while also recognizing that transportation improvements have significant potential to contribute to local, regional, and statewide quality of life and economic development objectives;
- ▶ working in partnership with local government agencies, interest groups, and the public to plan, fund, design, construct, and manage complete street networks that sustain mobility while accommodating walking, biking, and transit opportunities safely.

This policy requires that NCDOT’s planners and designers will consider and incorporate multimodal alternatives in the design and improvement of all appropriate transportation projects within a growth area of a town or city unless exceptional circumstances exist. Routine maintenance projects may be excluded from this requirement if an appropriate source of funding is not available.”

■ Mecklenburg-Union Metropolitan Planning Organization (MUMPO)

MUMPO works with NCDOT to incorporate sidewalk construction as a matter of standard practice on NCDOT projects within the urban area. Currently, NCDOT offers to construct sidewalks if municipalities fund a portion (or all) of the cost and the municipality also agrees to maintain the sidewalks once they are completed.

In addition to Charlotte, other local governments are providing the funding necessary to ensure sidewalks are added to some of the roadway projects being planned and designed by NCDOT.

MUMPO also has taken a strong stance to ensure that new roadway construction projects include pedestrian facilities and at the very least provide room for future sidewalk improvements and do not create pedestrian barriers to the future provision of pedestrian ways.

In developing the 2035 Long Range Transportation Plan, MUMPO surveyed its members about their pedestrian-related policies, processes and construction requirements. The results of the survey are presented below.

Table 11-19:
MUMPO Municipalities and Planning for Pedestrian Needs

MUMPO Municipalities	Planning for Pedestrians			Sidewalk Construction		
	Existing Pedestrian Plan Adopted	Goals or Policies for Pedestrian Facilities	Advocate* for Pedestrian Facilities	Sidewalk Construction Program	Typical Annual Sidewalk Budget	Ave. Miles Sidewalk Built Per Year
Charlotte	No	Yes	Yes	Yes	\$7.5 million	22
Cornelius	Yes	Yes	Yes	Yes	None	Unknown
Davidson	Yes	Yes	Yes	No	\$150,000	Unknown
Huntersville	No	Yes	Yes	No	None	Unknown
Indian Trail	Yes	Yes	Yes	Yes	\$350,000	1 to 2
Marvin	Yes	Yes	Yes	No	None	None
Matthews	No	No	Yes	Yes	\$100,000	2
Mineral Sprgs	No	Yes	No	No	None	None
Mint Hill	Yes	Yes	No			
Monroe	No	No	No	Yes	\$30,000	1
Pineville	Yes	Yes	No	No	None	Unknown
Stallings	Yes	Yes	Yes	No	None	None
Unionville	No	No	No	No	None	None
Waxhaw	No	Yes	Yes	Yes	\$50,000	1
Wingate	No					
Weddington	No	No	No	No	None	None
Wesley Chapel	No	No	No	No	None	None

* Standing Committee or Organization

The various MUMPO jurisdictions were also asked a series of specific questions about their sidewalk programs and standards:

- Does the municipality use Powell Bill funds to build sidewalks?
- What is the minimum standard for sidewalk width for sidewalks the municipality constructs?
- What is the approximate current mileage of sidewalks constructed in the municipality?
- Are sidewalks required to be constructed by code in new or redeveloped areas?
- If yes, are sidewalks required on both sides of the street?
- Are sidewalks required for all land uses?
- If not, what land uses are excluded?

The responses are summarized in the following table.

Table 11-20:
MUMPO Municipalities and Sidewalk Standards

MUMPO Municipalities	Use Powell Bill Funds to Build Sidewalks	Minimum Standard Sidewalk Width	Current Mileage of Sidewalks Constructed	Sidewalks Required on Both Sides of Street?	Sidewalks Required for All Land Uses?	If Not, What Land Uses Are Excluded?
Charlotte	No	5 feet	2,206	Yes	Yes	N/A
Cornelius	Yes	4 feet	20	Yes	Yes	N/A
Davidson	Yes	5 feet	Unknown	Yes	Yes	N/A
Huntersville	Yes	5 feet	188	Yes	Yes	N/A
Indian Trail	Yes	5 feet	85	Yes	No	Large Lot (4 acre) SFR or Subdivisions Less than 5 Lots
Marvin	No	N/A	Unknown	Yes	Yes	N/A
Matthews	Yes	5 feet	70	Yes	No	Warehouse or Industrial uses
Mineral Sprgs	No	N/A	None	N/A	N/A	N/A
Mint Hill	No	5 feet	Unknown	Yes	No	SFR
Monroe	Yes	5 feet	50	Yes	Yes	N/A
Pineville	Yes	5 feet	5	Yes	Yes	N/A
Stallings	Yes	5 feet	5	Yes	No	SFR
Unionville	No	N/A	Unknown	No	No	All
Waxhaw	Yes	5 feet	10	Yes	No	SFR or duplex
Wingate	No	5 feet	Unknown	Yes	No	SFR less than 25 units
Weddington	No	N/A	Unknown	No	No	All
Wesley Chapel	No	4 feet	Unknown	Yes	Yes	Commercial, Industrial, Small Subdivisions

Pedestrian Component continued next page

11.5 Pedestrian

11.5.2 Current Pedestrian Initiatives of MUMPO Municipalities

■ City of Charlotte

The City is committed to becoming a more walkable community as part of an overall strategy for advancing a balanced transportation system. The Charlotte City Council set a goal for Charlotte to become the premier city in the country for integrated land use and transportation choices. A study conducted in 2007 by the University of North Carolina at Charlotte's Urban Institute for CDOT indicates that 81.5% of residents in Mecklenburg County think that "roads should be designed to accommodate all users including motorists, pedestrians, bicyclists, and transit users."

Centers, Corridors, and Wedges Growth Framework (CCW)

The CCW was adopted in 2005. This document establishes a guide for growth and transportation projects throughout Charlotte. It establishes activity centers where the most dense and pedestrian-friendly land uses will be located. There are five transportation corridors where enhanced street network and rapid transit will support intensified land uses.

Transportation Action Plan (TAP)

Charlotte adopted the award-winning *Transportation Action Plan* in 2006. Goal 2 of the TAP states that the City will "prioritize, design, construct, and maintain convenient and efficient transportation facilities to improve safety and neighborhood livability, foster economic development, promote transportation choices and meet land use objectives."



This plan calls for creating "complete streets" with all new projects, and working to retrofit existing streets with sidewalks and facilities for other modes of transportation.

The TAP won the United States Department of Transportation Award for Excellence in Transportation Planning in 2008 and the National Institute for Transportation Engineers Award for Best Project.

The Transportation Action Plan emphasizes a balanced transportation system that accommodates pedestrians and other users as well as motorists

Two key objectives from the TAP are:

- *Objective 2.1*, which states that the City intends for all transportation projects to improve safety and livability, promote transportation choices and meet land use objectives; and
- *Objective 2.7*, which calls for the City to construct 625 miles of new sidewalk by 2030.

Urban Street Design Guidelines (USDG)

The USDG were adopted in 2007. The USDG document establishes complete street guidelines for all new street construction in the city and retrofit situations. It also recommends changes to policies and the zoning ordinance to provide for complete streets within new land development projects.

Sidewalk Retrofit Policy and Code Requirements

The Sidewalk Retrofit Policy was adopted in 2005. It guides the City's prioritization of new sidewalk projects within the Sidewalk Program. Sidewalk needs are identified and prioritized based on criteria defined in this policy.

The Charlotte-Mecklenburg Land Development Standards Manual requires sidewalk to be constructed on both sides of the street for all land uses.

The City has established Mid-Block Crossing Guidelines that provide a means of evaluating requests for mid-block crossings to provide for safer and more equitable crossings. A monthly committee meets to conduct evaluations of potential mid block crossings.

Transit

Charlotte's Department of Transportation (CDOT) and the Charlotte Area Transit System (CATS) collaborated to create the South Corridor Infrastructure Program (SCIP). SCIP funded \$50 million in infrastructure improvements around LYNX Blue Line's South Corridor light rail stations including new sidewalks, intersection improvements, new signals, bicycle lanes, a rail trail, pedestrian lighting and street trees in close proximity to the stations.

The planned LYNX Blue Line Extension in the northeast section of the city will have a counterpart program called the Northeast Corridor Infrastructure Program (NECI). Its scope will be similar to that of the SCIP, building and enhancing infrastructure in the vicinity of all northeast corridor light rail stations.

Funding

The City allocates \$7.5 million annually to construct and maintain sidewalks through CDOT's Sidewalk Program. The City also provides funds for sidewalk construction on new streets in local and state projects and through the City's Neighborhood Improvement Program.

Note: The following pages (8-12) summarize initiatives in other MUMPO municipalities, focusing on their respective codes and policies related to pedestrians, and to adopted plans that address pedestrian issues in their jurisdiction.

■ Town of Cornelius

Cornelius has 20 miles of existing sidewalk. The Town uses its Land Development Code and Transportation Advisory Board to coordinate new sidewalks via private sector development. Sidewalks are typically required to be built on both sides of the street, except in the Industrial campus land use which requires sidewalk on one side of the street only.

The Zoning Ordinance requires sidewalk on both sides of the street for all land uses except industrial districts, where sidewalks are only required on one side. Certain street types, such as alleys or cul-de-sacs, can be exempt from the sidewalk requirement.

Though the Town does not have a budget for sidewalk construction, it utilizes Powell Bill funds to construct them on roadway projects.

The Town has adopted the *Greenway/Bikeway Master Plan* (2006) and the *Multimodal Transportation Plan* (1999) that guide the construction of new pedestrian facilities.

■ Town of Davidson

Davidson is a college town with an active, walkable downtown. Davidson wants to facilitate non-motorized travel to the downtown in order to create a more sustainable and healthy community.

The Davidson Planning Ordinance requires that new development construct sidewalks. The Council's Mobility Committee advocates for pedestrian facilities. The Town typically allocates approximately \$150,000 per year for sidewalk construction when funding is available.

The *Town Circulation Plan* (2003) states that any street that is connected will receive sidewalks. The Town has completed numerous small area plans for sections of the planning area, all of which focus on improving the urban form and lessening the need for automobiles. The Town is currently updating its comprehensive plan, which will have a strong focus on walkability and connectivity.

■ Town of Fairview

In Fairview, sidewalks are not currently required for residential development. Because the town is almost entirely residential, commercial development requires a rezoning/site plan review by the Town and sidewalks are typically requested as part of the site plan review.

■ Town of Huntersville

As a result of citizen interest in pedestrian facilities, Huntersville's Land Development Regulations were transformed in 1996 to emphasize a multi-modal transportation system. The development codes were also crafted to foster land use patterns that encourage pedestrian activity.

The Huntersville Subdivision Ordinance also has strong language addressing pedestrian and bicycle facilities and requires that, to the extent practicable, all streets should connect to create



Tree-lined street in Huntersville

a comprehensive network of public areas which allows free movement of automobiles, bicyclists and pedestrians.

The Huntersville Zoning Ordinance, Article 5, further states that streets are to have inviting public spaces and integral components of community design. A hierarchal street network should have a rich variety of types, including bicycle, pedestrian and transit routes. All streets should connect to help create a comprehensive network of public areas to allow free movement of automobiles, bicyclists and pedestrians. In order for this street network to be safe for motorists and pedestrians, all design elements must consistently be applied to calm automobile traffic.

Huntersville has completed several community-wide and small area plans that identify roads for improved pedestrian facilities.

■ **Town of Indian Trail**

Indian Trail has 85 miles of existing sidewalk. Its citizens are especially interested in sidewalks in close proximity to schools and within the downtown district. When prioritizing sidewalks, the need, connectivity and destinations (especially to schools) are considered. The town recently adopted several plans that will guide the construction of new pedestrian facilities.

The Unified Development Ordinance requires sidewalk based on the type of development and roadway classification. The Town Council's Transportation Committee advocates for pedestrian facilities. The Town utilizes Powell Bill Funds, and grants, as well as allocating \$350,000 annually for the construction of sidewalks. This results in between one and two miles per year added to the town network.

Indian Trail has adopted the following plans that address pedestrian facilities:

- *The Town of Indian Trail Comprehensive Plan* (2009)
- *Downtown Master Plan* (2009)
- *Pedestrian Plan* (2009)

■ Village of Marvin

The Village of Marvin recently (2009) participated in the Local Area Regional Transportation Plan, which resulted in a CTP document for Marvin, Wesley Chapel, Weddington, and Waxhaw. This plan included recommendations for multi-purpose paths, bicycle lanes, and sidewalks on certain roads within the study area. The Village intends to implement the plan recommendations as future development occurs, as well as through grant applications.

■ Town of Matthews

The Town of Matthews Transportation Advisory Committee advocates for pedestrians and pedestrian facilities.

There are several ways in which sidewalks are constructed in Matthews. The Town has a policy to install sidewalks on at least one side of all thoroughfares over time. It is estimated that 65 percent of thoroughfares now have sidewalks. The Matthews Zoning Ordinance and the Matthews Subdivision Ordinance also require developers to construct five foot wide sidewalks along the frontage of the property for all land uses except for by-right infill development that requires no other Town action. The Town also constructs sidewalk to link disconnected sections of sidewalk. Matthews has a budget of \$100,000 along with Powell Bill funds, to construct sidewalks.

Matthews encourages construction of pedestrian facilities through the *Matthews Land Use Plan* (2002). The plan calls for:

- developing and encouraging the use of alternate transportation modes and greater connectivity between neighborhoods and local destination points, and
- developing sidewalks, bikeways, and similar facilities which encourage alternative transportation choices, and connect existing portions of off-street paths for greater continuity.

■ Town of Mineral Springs

The Town of Mineral Springs has no sidewalk program or requirements for sidewalks. It is a very low-density rural residential area. Its focus is on developing greenways, which it believes are more appropriate for its land use pattern.

■ Town of Mint Hill

Many older neighborhoods are requesting sidewalks, indicating that there is an interest for sidewalks within the municipality. Mint Hill has a Downtown Master Plan that proposes a greenway loop around the downtown to serve both pedestrians and bicyclists as a multi-use path. The town was awarded a pedestrian planning grant from the NCDOT in 2009.

The Town and developers will install a number of pedestrian crosswalks at several intersections in 2009 and 2010. Sidewalks projects are prioritized on the basis of need and feasibility by the Board of Commissioners each year. Sidewalks are required for all new developments and development expansions of 50 percent or greater.

■ City of Monroe

The City of Monroe's Transportation Department has a sidewalk priority program that is submitted to the City Council for approval each year. Priorities are based primarily on safety issues and pedestrian traffic. The citizens of Monroe have a high interest in the provision of sidewalks and greenways within the community.

The City of Monroe uses a "Detail & Design Manual" to guide sidewalk recommendations and requirements as a part of the plan review process. Sidewalks are required for all new development. Monroe has a \$30,000 budget for sidewalks each year in addition to Powell Bill funds. Sidewalks are prioritized by the order of the request and Council Committee.

The City of Monroe does not have any dedicated pedestrian plans, although it is currently updating its Unified Development Ordinance to include such provisions in its development regulations.

■ Town of Pineville

The Town's Transportation Advisory Committee advocates for pedestrians and pedestrian facilities. Pineville's Subdivision Ordinance and Zoning Ordinance require sidewalks with all changes in land use, new residential streets, and in all commercial development.

Pineville has several overlay districts it uses to guide development in various parts of the community. Some specific recommendations include enhancing small town character in the downtown and in neighborhood mixed-use areas. These principles even carry over into the Town's industrial district overlays.

■ Town of Stallings

The Town recently (2008) adopted an NCDOT-funded pedestrian plan that made recommendations for pedestrian improvements throughout the community. Stallings already requires sidewalks as a part of most new developments, so they are actively applying for grants to complete identified gaps in the network.

■ Town of Unionville

In Unionville, sidewalks are not currently required for residential development. Because the town is almost entirely residential, commercial development requires a rezoning/site plan review by the Town and sidewalks are typically requested as part of the site plan review.

■ Town of Waxhaw

The Town of Waxhaw Unified Development Ordinance requires that sidewalks be installed through private development.

The *Waxhaw 2030 Comprehensive Plan* sets goals for pedestrian facilities, and the Local Area Regional Transportation Plan (LARTP) identifies pedestrian improvements on future road projects in the Town. Waxhaw does not currently have an official pedestrian plan, but has applied for a pedestrian planning grant from the NCDOT- DBPT in 2008. The Town recognizes a plan will be developed in the near future as Waxhaw continues to grow. The Town of Waxhaw Planning Staff has worked with developers to ensure that current and future development projects incorporate pedestrian facilities in their designs. Sidewalk projects are prioritized based on a request-driven process where older requests have a higher priority.

■ Town of Wingate

The Town of Wingate is initiating a comprehensive land use plan in 2010 that will focus on enhancing their downtown and linkages to Wingate University. This plan is being developed in advance of the Monroe Bypass, which will reorient access to the town from the south to the north. The Town currently requires sidewalks as a part of new development, but has many sections of the town where there are no sidewalks currently installed. The Town is interested in grants to fill in critical gaps in the network.

■ Town of Weddington

Weddington currently has no requirements for pedestrian facilities. The Town does not have a sidewalk construction program, and has no codes that require sidewalk for new development.

Weddington recently (2009) participated in the Local Area Regional Transportation Plan, which resulted in a CTP document for Marvin, Wesley Chapel, Weddington, and Waxhaw. This plan included recommendations for multi-purpose paths, bicycle lanes, and sidewalks on certain roads within the study area. Facilities may be provided as a part of future road widenings.

■ Village of Wesley Chapel

The Village of Wesley Chapel recently (2009) participated in the Local Area Regional Transportation Plan, which resulted in a CTP document for Marvin, Wesley Chapel, Weddington, and Waxhaw. This plan included recommendations for multi-purpose paths, bicycle lanes, and sidewalks on certain roads within the study area. The Village intends to implement the plan recommendations as future development occurs, as well as through grant applications.

11.5 Pedestrian

11.5.3 Pedestrian Planning

The Mecklenburg-Union MPO recognizes that a balanced transportation network—including roads and streets, public transit, pedestrian facilities and bicycle facilities—is vital to economic development and the overall quality of life in the MUMPO region.

The North Carolina Department of Transportation (NCDOT) and the NC Board of Transportation are providing important leadership in accommodating pedestrians as part of a balanced transportation system.

The Board's *Resolution: Bicycling and Walking in North Carolina, a Critical Part of the Transportation System*, adopted in 2000, makes it clear:



"The North Carolina Board of Transportation concurs that bicycling and walking accommodations shall be a routine part of the North Carolina Department of Transportation's planning, design, construction and operations activities, and supports the Department's study and consideration of methods improving the inclusion of these modes into the everyday operations of North Carolina's transportation system."

That same year, NCDOT adopted Pedestrian Policy Guidelines for implementing the Board's resolution and updated procedures for its own 1993 Pedestrian Policy. Accordingly, North Carolina cities and towns are encouraged to make bicycling and pedestrian improvements an integral part of their transportation planning and programming.

Furthermore, in 2009, the NCDOT Board of Transportation adopted a complete streets policy that states NCDOT will provide "an efficient multi-modal transportation network in North Carolina such that the access, mobility, and safety needs of motorists, transit users, bicyclists, and pedestrians of all ages and abilities are safely accommodated."

■ NCDOT Strategic Plan

The NCDOT Strategic Plan is a key policy document of the Board of Transportation that guides the functions to be carried out by the NCDOT.



a tree-lined, complete street

The plan's System Vision (available at <http://www.ncdot.org/planning/StrategicPlan>) states: "The transportation system in North Carolina will provide safe, affordable choices for the movement of all people and products." The plan also notes that:

- "it will be a well-maintained, reliable, multi-modal and connected system that is considerate of local land use plans, natural resources and the environment," and that
- "this system will be planned and operated in partnership with communities, local, regional, state and federal agencies, and private entities."

The Strategic Plan identifies balance, choices, partnership, open communication and safety as guiding principles that relate to pedestrian mobility. The plan sets the following basic goal and objectives:

NCDOT Strategic Plan

Goal:

Provide a safe and well-maintained interconnected transportation system that offers modal choices for the movement of all people and goods.

Objectives:

- Strive to meet transportation system needs for services, construction and maintenance.
- Develop partnerships with other transportation providers.
- Support the development of multi-modal transportation systems.
- Ensure transportation safety through the enforcement of applicable state and federal laws.
- Continuously monitor and update the department's long-range transportation plan.

■ **Mecklenburg-Union MPO**

This *2035 Long Range Transportation Plan's* "Goals and Objectives" section contains MUMPO's specific objectives for developing "a transportation system that integrates pedestrian and bicycle modes of transportation with motor vehicle transportation" and encourages the use of walking and bicycling as "additional" modes instead of as "alternative" niche modes:

- Increase the design sensitivity of specific transportation projects to the needs of pedestrians and bicyclists.
- Improve the transportation system to accommodate pedestrian and bicycle access along roadways through design and facility standards.
- Increase pedestrian and bicycle safety through public awareness campaigns.
- Provide linkages for pedestrian and/or bicyclists between neighborhoods, employment centers, cultural facilities, institutional facilities such as schools and churches, parks, commercial areas and other businesses.

Many municipalities in the MUMPO area have increased their efforts to accommodate pedestrians in their transportation planning efforts, as described in the previous “Current Initiatives” section of this chapter. Many municipalities have adopted some level of pedestrian-related plans, policies and/or regulations, and many municipalities also have a budget for sidewalk improvements.

In many of the municipalities, sidewalk construction has been a very high priority and will continue to be so, but other pedestrian needs are required to make the overall pedestrian environment more connected and safer across the region, including:

- more high visibility crosswalks;
- mid-block crossing treatments where necessary;
- continued installation of count-down pedestrian signals and pedestrian scale lighting;
- continued compliance with the Americans with Disabilities Act (ADA) and retrofit of ADA standards on existing facilities;
- incorporation of a wider range of accessibility features;
- more emphasis on pedestrian connections to bus stops and rapid transit stations;
- wider, more usable sidewalks with wider planting (buffer) strips;
- additional multi-use paths (pedestrian and bicycle) on alignments separated from roads and streets;
- connection of neighborhoods to schools, parks and commercial areas;
- continued encouragement of land use and development patterns that promote walking as a form of transportation;
- emphasis on pedestrian and bicycle features internal to developments; and
- public awareness campaigns to educate pedestrians and drivers about pedestrian rights and responsibilities.



a new sidewalk in a subdivision

■ City of Charlotte Sidewalk Program

The City’s Sidewalk Program has a \$7.5 million annual budget. Charlotte’s adopted Sidewalk Retrofit Policy prioritizes sidewalk construction based on numerous criteria, including traffic volume and land use context. Sidewalks will be constructed on both sides of all thoroughfares, on one side of all collectors and, after assessing requests, on local streets. In its needs analysis, the Charlotte Department of Transportation staff has identified:

- 685 miles of new sidewalk needed on both sides of Charlotte's thoroughfares, and
- 1,400 miles of new sidewalk needed on one side only of Charlotte's local and collector streets.

The current funding level allows for the construction of approximately 10 miles of new sidewalk each year through the Sidewalk Program and the maintenance of the existing sidewalk network. In order to target the funds where they are most needed, a ranking system is used to evaluate each section of potential sidewalk and to prioritize the segment based upon actual demand, safety, network completion and transit access.



sidewalk and planting strip on Colony Road in Charlotte

Charlotte also constructs sidewalk in conjunction with all appropriate state and local roadway projects and the City's Neighborhood Improvement Program.

Completion of many of the early sidewalk projects was very efficient because many of the easiest sections to build were constructed first. Many future sidewalk projects will be more difficult to construct, especially in the areas of the city developed during the 1960s, 1970s and 1980s.

■ City of Charlotte Initiatives

In recent years, the City of Charlotte has enacted major plans and undertaken major policy initiatives to support balanced transportation and, in particular, pedestrian components.

- ▶ The City has adopted the **Transportation Action Plan** in 2006 which calls for over \$500 million in pedestrian-related improvements by 2030.
- ▶ The City will create a **Pedestrian Advisory Committee** in order to make recommendations to City Council regarding the future Pedestrian Plan and to advocate for pedestrians on a number of topics.
- ▶ The City continues to prepare a **Pedestrian Plan** as identified in the TAP to provide a comprehensive overview of pedestrian travel demand priorities and opportunities. The plan will include code change recommendations that will improve the overall pedestrian environment.

- ▶ The City adopted the **Urban Street Design Guidelines**, which encourage a safer and more comfortable pedestrian environment. Implementation of these guidelines as policy and ordinances will be important for enhanced pedestrian travel.
- ▶ The City completed the **Center City Transportation Plan**, which includes a walkability analysis. The implementation of recommendations from this study help ensure safe and connected pedestrian travel within Charlotte's Center City.



a pedestrian-friendly street in a mixed-use area of Charlotte's Dilworth neighborhood

Other City of Charlotte initiatives include:

- The City was awarded a Federal Highway Administration Transportation and Community System Preservation Grant in 2005. This grant was used to create a study that identified and evaluated pedestrian and bicycle connectivity opportunities. The City's Transportation Action Plan identifies the need for a Pedestrian and Bicycle Connectivity Program. The City will continue to seek funding for connectivity-related projects from the state and federal governments.
- The Sidewalk Program will continue funding for construction and maintenance of sidewalks and retrofitting of handicapped ramps.
- Additional monies will be sought to continue installation of accessible pedestrian signals.
- The City's Transportation Action Plan identifies the need for a Pedestrian and Bicycle Connectivity Program and Safe Routes to School Program. The City will continue to seek funding for connectivity projects and safe routes to school from the state and federal governments.



Charlotte continues to retrofit sidewalk with handicapped ramps.

11 Transportation Plan Components

11.6 Greenways and Trails

11.6.1 History and Existing System

Greenway trail development in the MUMPO region historically has been executed largely within Mecklenburg County, although interest in trail development in Union County has been growing over the years.

■ MECKLENBURG COUNTY

The Mecklenburg County greenway system is one of the oldest in North Carolina and the southeastern United States. In 1966, the Charlotte-Mecklenburg master plan for recreation recommended greenways “as logical natural elements useful in creating a sense of physical form and order within the City.” The plan proposed that greenways preserve the open space of urban residential areas while providing both active and passive recreation areas.

In 1980 the Mecklenburg County Greenway Master Plan was developed, which called for 73 miles of greenway along 14 creek corridors. The 1980 plan envisioned greenways as corridors for habitat conservation, recreation, alternative transportation, mitigation of flooding and protection of water supply.

In 1999, the greenway plan was updated and recommended a total of 185 miles of greenway along major creek corridors throughout the County.

A separate master plan for the Little Sugar Creek Greenway was adopted by the County in 2004 for that 15-mile corridor. This plan incorporated greenways as a major component of the urban redevelopment efforts at Kings Drive near Uptown Charlotte in partnership with a private developer, Charlotte-Mecklenburg Utilities Department, Mecklenburg County Storm Water Services, Central Piedmont Community College and NCDOT.

The most recent greenway master plan update was adopted in 2008 and called for the development of over 60 miles of trail by 2018. The plan identified specific greenway corridors for development over the next five and ten years.

Mecklenburg County citizens have consistently supported Park and Recreation bonds targeting both land acquisition and facility development.

- In 1999, voters approved \$220 million for land and \$7 million for greenway trail development;
- in 2004, they approved \$25 million for greenway trail development; and
- in 2008 they approved over \$40 million for greenway trail development and \$60 million for land acquisition.

There are greenway projects currently under design or construction in almost all areas of Mecklenburg County, including Charlotte, Cornelius, Davidson, Huntersville and Matthews—as shown on [Figure 11-9](#) in the “Map Gallery” at the end of this document.

Town of Cornelius

Cornelius adopted a greenway master plan in 2004 as part of the park master plan update, which expanded on the County's system and goals. Likewise, the town also adopted a bicycle and pedestrian master plan. Cornelius also references pedestrian goals and objectives in its comprehensive plan.

A 1.2-mile stretch of greenway in Cornelius along McDowell Creek was completed in October, 2009. It was the first greenway built in the town. The town and county partnered on the design and construction of the greenway as part of an NCDOT Enhancement Grant. The greenway connects several neighborhoods in Cornelius and Huntersville to Birkdale Village, and will also include a connection to Robbins Park and Westmoreland Athletic Complex—both of which are currently under design.

Town of Davidson

Davidson adopted a Greenway Master Plan in 2009. Moreover, most of Davidson's land use plans include pedestrian facilities and greenways as primary goals and objectives, and the town focuses on the establishment of a pedestrian-friendly community. As early as 1994, the *Davidson General Plan* made clear the priority and focus of town policies would be geared toward pedestrian initiatives; greenways are considered an integral part of a larger pedestrian system.

This concept is expressed by the Southeast Davidson Greenway, which is an existing pedestrian system featuring 2.8 miles of greenway trail and over five miles of overland connectors featuring bicycle lanes.

Town of Huntersville

Huntersville adopted its first greenway and bikeway master plan in 2007. The plan outlines strategies for both on-road and off-road bicycle facilities, and focuses primarily on the broader transportation and connectivity component of greenways, bicycle lanes and sidewalks. The 1999 *Mecklenburg County Greenway Master Plan Corridors* were initially used as the base for the greenway component to the town's plan, with some modifications to proposed alignments.

The Town of Huntersville contains about 1.4 miles of existing greenway along Torrence Creek. A one-mile addition to the Torrence Creek Greenway is currently under design and should start construction in 2010. It will connect the existing system to several new neighborhoods and a major new retail center called Rosedale Village. Construction of McDowell Creek Greenway—connecting Birkdale Village within the Town of Huntersville to Cornelius—was completed in October 2009. It is the first county greenway that connects two municipalities.

Town of Matthews

Matthews adopted a bicycle master plan in 2006 that references greenway trails, and greenways are regularly discussed at Transportation and Park and Recreation commission meetings. The *Mecklenburg County Greenway Master Plan* continues to be the primary greenway planning and policy guide for the town. A two-mile greenway is currently under construction near downtown Matthews along Four Mile Creek in partnership with Mecklenburg County.

Town of Mint Hill

Mint Hill identified greenway trail development as part of their Comprehensive Transportation plan adopted in 2008. The Mecklenburg County Greenway Master Plan continues to be the primary greenway planning and policy guide for the town.

Town of Pineville

The Town of Pineville adopted a pedestrian and bicycle master plan in March 2008 which references the greenway priorities listed in Mecklenburg County's Greenway Master Plan. The town also has pedestrian-related goals and objectives in their overlay plans, and requires greenway dedications when new development adjoins a planned greenway facility. Currently, there are no developed greenway trails in Pineville, but Little Sugar Creek runs through the town limits and remains a high priority for both the county and town.

■ UNION COUNTY

Union County and its municipalities have generally increased their interest and implementation of greenway facilities in their jurisdictions. Plans and facilities are local in nature and focus primarily on streams and utility corridors for implementation. This will likely change in the future as the Carolina Thread Trail planning process for all of Union County is scheduled to begin in 2010.

City of Monroe

The City of Monroe adopted a greenway plan in 2005 and have developed one-half mile of trail near downtown. However, the City ranks interest in developing more greenways as a very high priority, and the citizens have voiced support for more greenways.

Town of Indian Trail

Indian Trail is currently developing a parks master plan. The plan will call for the development of trails in the community.

Other Municipalities in Union County

Other municipalities in Union County have comprehensive plans or pedestrian master plans that reference greenways, but no formal greenway master plan so to speak. The Towns of Waxhaw, Stallings, and Weddington do not have greenway or bicycle master plans, but do reference pedestrian connections and greenways in their comprehensive plans. With the Carolina Thread Trail initiative underway, there is the potential to have a comprehensive greenway master plan in Union County to address greenway and pedestrian needs on a regional level.

► See the Map Gallery at the end of the document for this map:
[Existing and Proposed Greenways](#) [Figure 11-9](#)

Table 11-21:
Existing Greenway Plans in the MUMPO Study Area

Jurisdiction	Greenway Master Plan	Developed Miles	Notes
MECKLENBURG COUNTY*	Yes	32	Mecklenburg County is the primary trail provider for the City of Charlotte and six municipalities.
Charlotte	Yes	21	
Cornelius	Yes	1.2	
Davidson	Yes	8	
Huntersville	Yes	2	
Mint Hill	No	0	Greenways are referenced in the Comprehensive Transportation Plan. Trail development currently based on the 2008 Mecklenburg County Greenway Master Plan.
Matthews	No	1	Greenways are referenced in the Bicycle Plan and part of the Comprehensive Open Space Plan. Trail development currently based on the 2008 Mecklenburg County Greenway Master Plan.
Pineville	No	0	Trail development currently based on the 2008 Mecklenburg County Greenway Master Plan.
UNION COUNTY	No	0	
Indian Trail	Yes	0	Town is currently developing a Parks Master Plan.
Marvin	No	1	Greenways are referenced in the Comprehensive Transportation Plan.
Monroe	Yes	0.5	
Stallings	No	0	Greenways are referenced in the Pedestrian Master Plan.
Waxhaw	No	0	Greenways are referenced in the Comprehensive Transportation Plan.
Weddington	No	0	Greenways are referenced in the Comprehensive Transportation Plan.
Wingate	No	0	

*Mecklenburg County’s greenway master plan includes trail development plans and priorities for the City of Charlotte and all six surrounding municipalities. Trail development is coordinated with the six surrounding towns.

11.6 Greenways and Trails

11.6.2 Programmed Greenway Projects

■ Mecklenburg County

Mecklenburg County passed a park bond referendum in 2004 that included \$25 million for greenway trail development. The funding helped design and construct nearly 20 miles of trail along 9 creek corridors, including:

- Briar Creek Greenway,
- Four Mile Creek Greenways (Matthews),
- Irwin Creek Greenway,
- Little Sugar Creek Greenway,
- McDowell Creek Greenways (Huntersville and Cornelius),
- Stewart Creek Greenway,
- Toby Creek Greenway,
- Torrence Creek Greenway (Huntersville), and
- West Branch Rocky River Creek Greenway (Davidson).

In addition to the 2004 bond referendum, the Mecklenburg Board of County Commissioners allocated an additional \$18.2 million for Little Sugar Creek Greenway in 2007.

It is important to note that state and federal funding has also been involved in the County's greenway system.

- ▶ Through the NCDOT State Transportation Improvement Plan, \$5.33 million has been earmarked toward Little Sugar Creek Greenway.
- ▶ Through the State, Mecklenburg County has also secured close to \$600,000 in federal dollars through the enhancement grant program for sections of Torrence and McDowell Creek Greenways, and
- ▶ \$2.35 million in federal money has been secured through the American Recovery and Reinvestment Act (federal stimulus money) for the construction of Toby Creek Greenway and West Branch Rocky River Greenway.

Overland connectors can be a sidewalk/bicycle lane system, a multi-use path along a street or within a utility corridor, or a rail-trail or rail with trail system. The 2008 *Mecklenburg County Greenway Master Plan* addresses overland connectors as essential elements to make connections to the riparian-based greenway system.

One of the primary goals for greenways in the next ten years is to partner with CDOT, NCDOT, CATS and Duke Energy to utilize the existing road, rail and utility corridor systems to make connections between greenways. This will also be a very important component of the Carolina Thread Trail in order to make regional connections outside of the creek-based system. A similar ranking criteria and cost analysis can be used to rank overland connectors with a heavy emphasis on partnerships.

■ Union County

Union County does not have any greenway segments under construction. The few segments that currently exist were constructed in coordination with residential developments, and development activity in the county has largely stopped due to the economic downturn. The MUMPO communities in Union County frequently express interest in grant opportunities for implementing their existing plans, and this is expected to result in eventual implementation of segments.

Union County communities within the MUMPO Study Area rely largely on grants and developer agreements to construct sections of greenways. There are no comprehensive prioritized lists of anticipated future projects that represent future efforts in the County, although this is likely to change with the completion of the Union County section of the Carolina Thread Trail planning efforts.

11.6 Greenways and Trails

11.6.3 Horizon Year Recommendations

The anticipated future greenway projects referenced in this chapter are *not* formally included in the fiscally-constrained project list approved by MUMPO as a part of this plan. *The funding sources used to implement such projects are very uneven in availability and so programming and prioritizing projects 25 years into the future is not advisable.*

Still, the fiscal impact of greenway trail and other pedestrian and bicycle facilities—when looked at in aggregate throughout the MUMPO study area—is a considerable sum of money. Mecklenburg County alone identified a need for \$150,000,000 in improvements over the next 10 years.

As greenways and other pedestrian and bicycle facilities are an important part of the overall transportation network, and are increasingly requested by MUMPO study area residents, the cost of providing these types of facilities should be given greater study. Non-roadway projects are an important component for the quality of transportation infrastructure desired in the region.

In recognition of this, a sub-committee—charged with advising the Technical Coordinating Committee (TCC) on development of the Transportation Improvement Plan (TIP)—proposed that:

- ▶ MUMPO should set a goal of using at least 10 percent of its Federal Surface Transportation Program Direct Apportionment (STP-DA) funding on non-roadway projects.

The TCC accepted this advice with its recommendation to the MPO in May 2008 to adopt the 2009-2015 TIP with a project list that reflected the 10 percent goal. This action was followed by the MPO's adoption of the TIP, as recommended by the TCC.

In regard to ranking criteria, it is also suggested that MUMPO review how it accounts for its non-roadway projects in terms of both ranking criteria and fiscal implication and provide an update in the next Long Range Transportation Plan Update.

■ Mecklenburg County Five and Ten-Year Master Plan

The *Greenway Master Plan* was updated in 2008 as a part of Mecklenburg County's *Comprehensive Park Master Plan*, and focused on a specific Five and Ten-Year Action Plan for greenway development. The following represent local expectations and commitments only.

The plan called for 66 projects totaling 92.8 miles at an estimated cost of \$150,331,423. The Five-Year Plan doubled the existing greenway system to nearly 60 miles by 2015 utilizing land 90% owned by the County.

The Five-Year Plan presents a more aggressive goal prioritized by a set of ranking criteria. Each project was analyzed and awarded points based on the established criteria. The criteria included the following categories:

- **No Significant Barrier to Construction**
Barriers such as railroads, interstates, major infrastructure, difficult grades, and others present physical and financial obstacles to greenway construction. Preference should be given to greenways that do not require unusually difficult construction or high costs.
- **Percent Planned Miles Developed per Park District**
Guarantees that all areas of the County get equal consideration for greenway development. Points are awarded based on the percentage of greenway miles identified in the Master Plan (per Park District) that are under design, construction, or currently developed. Greenway projects in Park Districts that have a smaller percentage of planned miles developed are awarded more points.
- **Project Partnership, Public or Private**
A greenway is planned and built in conjunction with another public or private project. Examples include Carolina Thread Trail, Charlotte Housing Authority projects, Metropolitan Midtown, CPCC expansion, CDOT sidewalk extension, LUESA Stream Restoration, CMUD Relief Sewer and others. There may not be a quantifiable dollar amount known, but it is perceived that when projects are done together there are some major cost savings involved.
- **Funding Partnership, Public or Private**
Funding can limit expansion of the greenway system. Mecklenburg County Park and Recreation (MCPR) has success with park and greenway bonds, but it is important to consider seeking additional funds from other sources, and/or partnering with other projects to save costs. Examples include seeking donations from developers through the rezoning process, partnering with the towns as they apply for grants, or partnering with other public agencies such as CLC, LUESA, CDOT, or CMUD.
- **Located within the Extraterritorial Jurisdiction of a Town**
MCPR has a goal of reaching out to provide equal service of park and greenway facilities countywide. This includes the six towns in the county other than Charlotte.
- **Listed in Other Adopted Plans or Studies**
The 1999 *Greenway Master Plan* set a comprehensive look at the planned greenway system for 10 years. It is also important that the Charlotte-Mecklenburg Planning Commission and

the six towns in the county have established district, small area, neighborhood, corridor, and transit plans which reference greenway linkages as a key objective and policy guide. This criterion incorporates other County and municipal policies into greenway development.

The County also produced a design/development cost analysis in preparation for the 2008 bond campaign, which considered the cost for the average greenway as a base, and then added items as necessary to cover the costs of additional bridges, underpasses, additional accesses, signage, mitigation, secondary trails, parking lots, restrooms, design, contingency, inflation costs, as well as Owner-Provided Equipment (OPE) such as pocket parks, benches, trash cans, landscaping, etc.

■ Carolina Thread Trail

The Carolina Thread Trail is a 15-county regional network of trails and greenways for walking, biking, commuting, and recreation. It will create a permanent legacy of conservation for more than two million people by linking communities and attractions across North and South Carolina. The Carolina Thread Trail will be a catalyst for economic development, land preservation and healthier communities.

The actual location of the Carolina Thread Trail will be determined over time as communities plan their trails and work with neighbors to target points of connection. The Thread concept map provides a vision for the project, but will change as conceptual lines become actual trails (Source: <http://www.catawbalands.org/trail.php>).

Currently, Chester, Gaston, Lincoln and York counties have adopted county-wide greenway master plans designating corridors for the Carolina Thread Trail. The Thread Trail proponents are actively seeking adoption in Cabarrus and Mecklenburg Counties. The planning process is underway in Catawba, Cleveland, Iredell and Stanly counties, with initial efforts in Anson, Cherokee, Iredell, Lancaster, Rowan and Union counties.

As of Fall, 2009, the Carolina Thread Trail Plan for Mecklenburg County has entered the adoption phase of the process. The final alignments and amendments to the map have been made to reflect community input and actual conditions on the group. Adoption should be completed by early 2010. The process in Union County is in the initial phases. Planning is anticipated to begin the first quarter of 2010 and take approximately a year to complete.

▶ See the Map Gallery at the end of the document for this map:
[Carolina Thread Trail Map](#) [Figure 11.10](#)

■ Greenway Consideration in the MUMPO Prioritization Process

MUMPO does not typically rank greenway projects as a part of its formal fiscally-constrained project ranking process, as greenway projects do not compare well to highway projects under the current evaluation process. MUMPO does assign points to projects that support land use planning, multi-modal transportation efforts, environmental protection, and improving air qual-

ity. Typically, pedestrian and bicycle facilities are added to planned roadway projects, with those projects receiving higher priority because of these non-motorized vehicular facilities.

MUMPO uses a separate Congestion Mitigation and Air Quality (CMAQ) project ranking process for prioritizing non-highway projects when eligible grant and other funding sources become available. Greenway projects are considered under this ranking process, and two projects were funded in the most recent call for projects.

Recommendations for Future Project Prioritization

1. Consider a specific set-aside from future STP-Direct Attributable funds for bicycle and pedestrian improvements in order to allow for a predictable revenue source for eligible projects.
2. Assign additional prioritizing weight to all transportation projects that improve bicycle and pedestrian connectivity to activity centers.
3. Increase review and recommend coordination between land use and transportation plans in the MUMPO Study Area in order to further strengthen the land use and transportation connection to reduce reliance on single-occupant vehicular use.

► **See the Map Gallery at the end of this document for the following maps:**

[Existing and Proposed Greenways](#) [Figure 11-9](#)

[Carolina Thread Trail Map](#) [Figure 11-10](#)

11 Transportation Plan Components

11.7 Freight

11.7.1 Existing Conditions

Logistics is ...

- ▶ *the way products and materials are moved from point-to-point in the supply chain*
- ▶ *a critical economic driver throughout the state and in every county*
- ▶ *an “industry of industries” comprising many firms that operate both independently and interdependently, relying on a common infrastructure which functions as a **logistics ecosystem**¹*

This chapter examines aspects of freight, the movement of goods, the challenges facing the industry and its importance to the families, companies, and economic future of our region. To do this, MUMPO looked at:

- previous work and outreach highlighting issues, trends, challenges and opportunities in the MUMPO region;
- potential policies to improve freight systems in the region;
- partnerships and coordination with transportation agencies, other government organizations, private industry and the public; and the
- impact of pending federal legislation to develop a national freight plan.

With the increasing globalization of the economy and the increasing importance of the global supply chain, **freight handling and transit capacity has become an important platform for regional economic growth.** Growth and prosperity in the MUMPO region rely on increasing the capacity of local infrastructure to efficiently and effectively handle the forecasted growth of freight, both in tonnage and value, that will use locally owned assets.

11.7.1.1 Air Cargo

■ Air Cargo Facility

Charlotte-Douglas International Airport is just seven miles from Uptown Charlotte, adjacent to a Foreign Trade Zone, and immediately accessible to major interstates. The Charlotte Air Cargo Center consists of approximately 500,000 sq. ft. of facilities and over 50 acres of aircraft ramp space. The airport’s three runways can accommodate all types of aircraft and measure 10,000 feet, 8,845 feet, and 7,500 feet.

To support air cargo operations, Charlotte-Douglas has a full complement of international service support organizations, including U.S. Customs, U.S. Department of Immigration and Naturalization and U.S. Department of Agriculture. The Charlotte Air Cargo Center has more than 70 freight forwarders, custom house brokers and professional international service providers.

1. Georgia Task Force on Freight & Logistics, “Executive Summary and Recommendations” (2008)

■ Air Cargo

Norfolk Southern is relocating the one intermodal facility from uptown Charlotte to the airport. Doing so improves synergies between the modes of transportation and helps the local road network by consolidating the four modes of cargo transportation on one site. The new intermodal facility and a third runway are now under construction. The project costs \$320 million.

Development of the proposed airport intermodal facility—and construction of the freeway that will become the Garden Parkway—are projects that enable attracting and maintaining air cargo business at the airport. The intermodal facility will allow the airport to interface with the trucking industry and railroad. Norfolk-Southern Railroad runs east west across the north side of the Airport.

Air Cargo Facts about the Charlotte Region

- ▶ 20 cargo airlines including all integrated carriers
- ▶ 11 major passenger airlines and 7 commuter airlines
- ▶ 2 major rail systems linking 27,000 miles of track
- ▶ 311 trucking companies, making Charlotte #11 in U.S.
- ▶ 57% of Fortune 500 companies have facilities in the area
- ▶ No. 1 industrial hub in Southeast U.S. and 6th largest wholesale center nationwide
- ▶ Over \$4 billion worth of manufactured goods exported annually from North and South Carolina
- ▶ 170,752 tons of cargo forwarded to destinations worldwide (2006)
- ▶ \$10 billion impact by airport on local economy

source: Charlotte-Douglas International Airport

11.7.1.2 Rail Freight

■ Railroads

The Norfolk Southern Railroad (NS) and CSX Transportation (CSXT) are the two major rail lines serving the Charlotte region. These two rail lines link Charlotte with 44,880 miles of rail that serve the majority of states located on the east coast.

These railroads bring more than 300 trains through the Charlotte region per week. The NS rail yard is computerized and able to handle up to 28,000 rail cars a day. These railroads also work closely with the trucking firms in the regions and offer piggyback facilities.

Twenty-five freight railroad companies operate North Carolina's 3,379-mile rail system. Two freight railroad companies—NS and CSXT—operate over 75 percent of the state system via major and mainline routes and service the Charlotte region.

- CSXT operates 34 percent of the system. Its east-west route connects Wilmington and Charlotte to Atlanta and New Orleans.

- NS operates 43 percent of North Carolina's rail system. Its north-south route connects the Northeast and Midwest to Atlanta via Danville, Virginia, Greensboro, and Charlotte.

Other minor routes serve the Charlotte region:

- The state-owned North Carolina Railroad (NCRR) extends 317 miles from Charlotte to Morehead City and includes the most active rail corridor in the state between Raleigh and Charlotte. Norfolk Southern leases from NCRR the line that serves Durham, Greensboro, High Point, and Charlotte.
- Aberdeen Carolina and Western Railroad leases a route from Raleigh to Charlotte via Sanford.
- Another Norfolk Southern route connects Charlotte and Greensboro via Mooresville and Winston-Salem.



Norfolk Southern rail line near uptown Charlotte

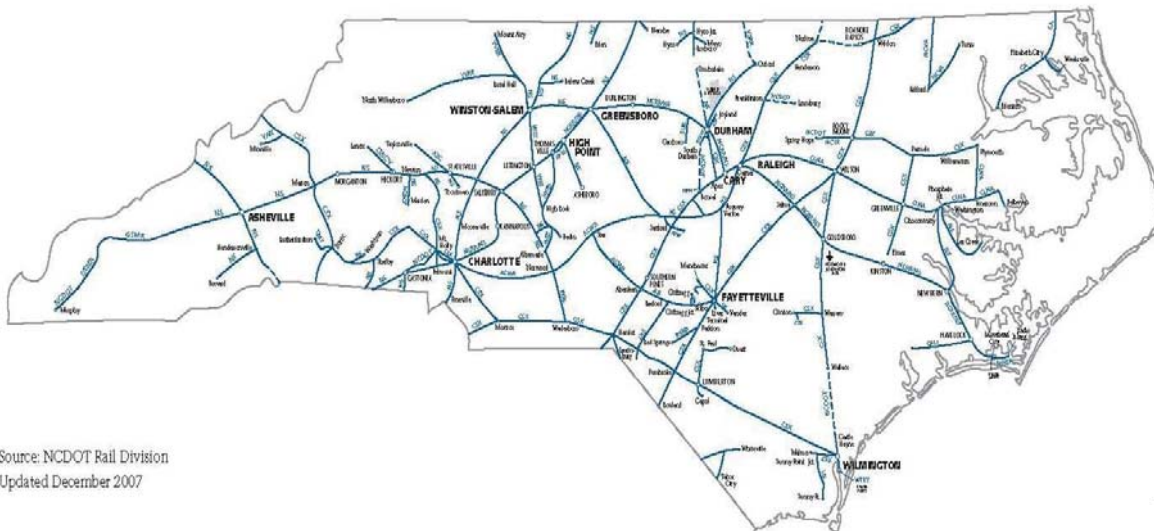
■ Freight Rail Service

Of North Carolina's 3,300 miles of rail lines, all but about 491 miles are owned by private freight railroads. Track control is maintained by the freight railroads. There are a total of 22 active freight railroad companies operating in North Carolina today: two active Class I railroads, 12 active short line railroads, and eight active short line railroads that specialize in switching and terminal services. In addition, there are two freight companies, the Red Springs & Northern Railroad and the Virginia and Southern Railroad that own track in North Carolina but are not currently operating in the state.

North Carolina's rail network serves 86 of North Carolina's 100 counties. This network provides services to the ports, power plants, mines, military installations, agriculture, forestry, plastic, furniture and other vital industries such as coal, food products and chemicals. Some of the state's freight rail lines are also used for intercity passenger service. *(NCDOT Rail Division)*

The abandonment of rail lines in North Carolina continues to be primary challenge for the freight rail industry, rural communities, and shippers. In the past decade, the rate of abandonment in North Carolina slowed, but the fact that the State has lost 700 miles of track since 1971 cannot be overlooked. In addition, only 30 percent of the State's short lines can accommodate heavier (286,000-pound) rail cars. At the same time, greater investment in short lines is key to spurring economic prosperity in the State's rural and small urban areas. A potential solution is to create additional short line railroads and upgrade older tracks to handle heavier rail cars. *(1999 Rural Property Task Force Report)*

North Carolina Rail Lines



Source: NCDOT Rail Division
Updated December 2007

■ Freight Rail Needs

Information from the *North Carolina Rail Plan 2000* shows the State's 25-year freight rail investment needs total \$545 million. These needs include:

- track and terminal improvements to both Class I railroads (\$282 million);
- upgrades to short line railroads (\$225 million); and
- increasing the yearly allocation to the Rail Industrial Access Program (\$38 million)

The 1999 *Rural Property Task Force Report* makes these observations about the needs:

- \$507 million (93 percent) of freight rail needs are related to modernization (primarily track and terminal upgrades); the remaining \$38 million in needs (7 percent) are for expansion (i.e., construction or reactivation of tracks).
- One in four of the State's top 200 manufacturers ship materials by rail. Commodities, such as coal, chemicals, farm products, pulp, paper, lumber, wood products, stone, clay, glass, and food, accounted for 84 percent of commodities shipped by rail in the state in 1998.
- Significant upgrades to short line rail lines are needed to sustain prosperity in rural and small urban areas; increased funding of the historically successful Rail Industrial Access Program is required to sustain North Carolina's economic prosperity.

11.7.1.3 Intermodal Freight Traffic

■ Intermodal Facilities

One of the most significant trends in the freight rail industry is the growth of intermodal traffic. Intermodal traffic across the country has grown from 3.1 million containers transported in 1980 to 11.8 million in 2008 (see chart at top of page 11.7-5). A primary advantage of moving freight intermodal is reduction of through state truck traffic.

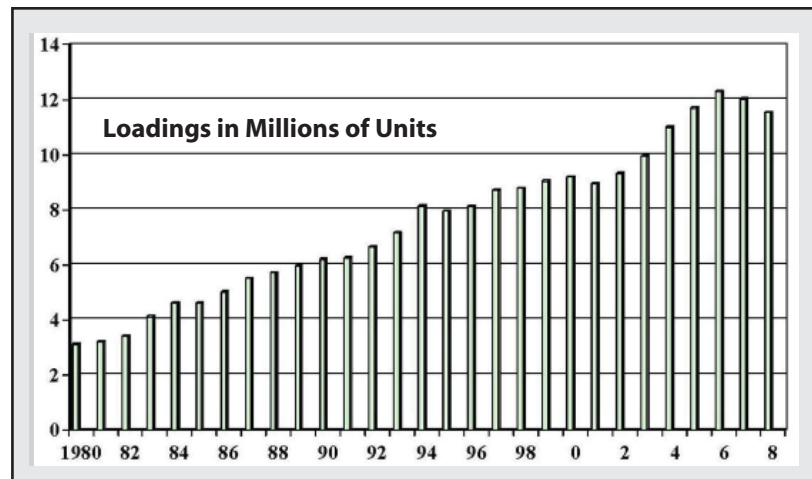
Intermodal facilities allow for the easy transfer of freight between railroads, planes, ships, and trucks.

With five freight terminals, Charlotte boasts 28 percent of all freight intermodal terminals in North Carolina. These terminals include:

- Charlotte Douglas International Airport
- Norfolk Southern Intermodal Freight Terminal
- CSX Intermodal Freight Terminal
- North Carolina State Ports Authority
- Pipeline Tank Farms (Paw Creek, Mecklenburg County)

There are two inland intermodal terminals located in North Carolina, one in Charlotte and the other in Greensboro. The North Carolina Ports Authority owns these intermodal terminals. The Charlotte Intermodal Terminal is located north of the Charlotte-Douglas International Airport and has access to both CSX and NS Railroads, as well as convenient access to I-85 and I-77.

U.S. Intermodal Growth



Source: Association of American Railroads "Railroad Facts" (2008)

11.7 Freight

11.7.2 Trends

■ Trends in the Economy

The Federal Bureau of Transportation Statistics reported in September, 2009, that "on a typical day, about 43 million tons of goods, valued at about \$29 billion, moved nearly 12 billion ton-miles on the nation's interconnected transportation network." The Bureau also noted:

"The value of freight shipments in 2002, including domestic commodity shipments and domestic transportation of exports and imports, was \$11 trillion—a 45-percent increase over 1993 when measured by value of shipments in inflation-adjusted 2000 dollars. This steady growth in freight movements was possible because of growth in the U.S. economy, an increase in U.S. international merchandise trade, improvements in freight sector productivity, and the availability of an extensive multimodal transportation network in the United States."

Transportation of commodities has evolved and become increasingly important to companies and regional economies, as noted by the Bureau of Transportation Statistics.

■ Global Trends and Implications

In "Transportation Trends 2025," University of Texas transportation analyst Michael Walton cites these major global trends that will affect the volume of freight traffic in the Charlotte area.

Global Trends

- Increasing domestic, NAFTA, and global trade
- Outsourcing for comparative economic advantage in production
- Emergence of global trade blocs and city-state trade areas

Implications for freight transportation:

- Far flung intermodal supply chains
- Increasing freight traffic and congestion along trade corridors and at ports, airports, and border crossings.
- Changes in location of high volume lanes and economies of scale for freight carriers
- Demand for global trade infra-and info-structure
- Harmonization of trade and regulatory policies
- Need for more of an outward oriented US focus on changing global dynamics and transport implications

■ National and Regional Trends

In "Transportation Freight Policy," Dr. Walton further identifies national and regional trends that will impact freight traffic.

U.S. Trends that will impact freight traffic

- Expanding supply chains
- Changes in advanced manufacturing trending toward higher value products
- Increased international trade
- Changes in the population and rate of growth in the US economy

Trends that could affect regional freight traffic

- Increasing shift of tonnage away from West coast ports to the East coast
- Opening of the new, larger Panama Canal that will allow for much larger freight vessels
- Potential change to "feeder" system of ships and ports reflecting adaption to larger vessels
- Increasing use of warehouses closer to ports and less reliance on scattered warehouses
- Unknown impact from the increases in fuel costs and efficiencies
- Availability of reliable workers and a large logistics workforce
- Trucking in North Carolina is forecasted to increase by 57% by 2020
- Freight traffic at the ports is expected to grow by 100% by 2020

■ Trends in Intermodal

The prospects for future rail intermodal business are very robust, with national tonnage volumes rising 213 percent by 2035 and the Panama Canal expansion moving more imports to East Coast ports.

■ Trends in Rail Freight

The North Carolina Department of Transportation estimates that

“between 2000 and 2030, the state’s total income is expected to increase by about \$190 billion. The people and businesses that drove the increase will also drive additional congestion on the roadways and fuel the demand for additional consumer goods, both of which create additional demand for freight rail services.”

(North Carolina Rail Plan, 2009)

The *North Carolina Rail Plan 2009* cites key trends in four sectors that are affecting rail demand in the state and the growth in rail freight volume and tonnage:

- **Manufacturing** — This sector, which contributes nearly 20% of the state’s gross domestic product (GDP), remains crucial. Food, beverages, tobacco and chemicals are the largest manufacturing sectors by production value, representing nearly 10% of the gross state product (GSP). Efficient and reliable rail transportation is imperative to the competitiveness of North Carolina manufacturers—both to reach customers and to keep costs down.
- **Agriculture** — The state is a top five producer of hogs, broilers and tobacco. North Carolina is the ninth largest agricultural exporter in the United States. Rail services play a key role in transporting the state’s agricultural products and are crucial for bringing corn into North Carolina from the Midwest to feed the state’s livestock.
- **Energy** — Energy consumption has been growing with North Carolina’s population, and coal, a significant user of rail, accounts for about one-third of the energy consumed in the state. Today, North Carolina ranks 12th in the nation for coal consumption. It does not have the resources to supply any of its own coal needs and thus relies on shipments of coal transported by rail from nearby states. Robust supplies and clean coal technologies will encourage the continued use of coal in future years.
- **Construction** — North Carolina’s construction industry is one of the largest in the country. It depends on rail working in conjunction with trucking to keep up with construction material demand in a timely manner.

The North Carolina Office of Freight Management and Operations identifies several initiatives underway that will affect rail demand in North Carolina, including the North Carolina International Terminal in Brunsick County, the North Carolina Global TransPark, and additional military personnel and civilian contractors assigned to Fort Bragg.

■ Trends in Shipping

Expansion of the Panama Canal will fundamentally alter global shipping patterns, allowing larger ships to pass through its locks. With larger cargo shipments on the move, goods can reach the East Coast both easily and economically, and the market share of East Coast ports will grow over the next 10 to 20 years. This will spark competition among these ports on the East Coast as they vie for a permanent share of waterborne Trans-Pacific container traffic.

11.7 Freight

11.7.3 Projections

■ Projections on the Composition of Freight

Overall, freight tonnage is expected to double nationwide by 2020. In the Southeastern U.S., the Federal Highway Administration projects an 80 percent increase by 2020.

The projected increase warrants a re-examination of how freight is handled in the region and the policies and challenges facing the industry. Road construction cannot keep pace with the expected increase in freight traffic. Regional stakeholders must agree on goals and strategies to support the movement of freight around and through the region.

Table 11-22:

Shipping Projections To, From and Within North Carolina

Shipments by Weight: 2002 and 2035 (Millions of Tons)

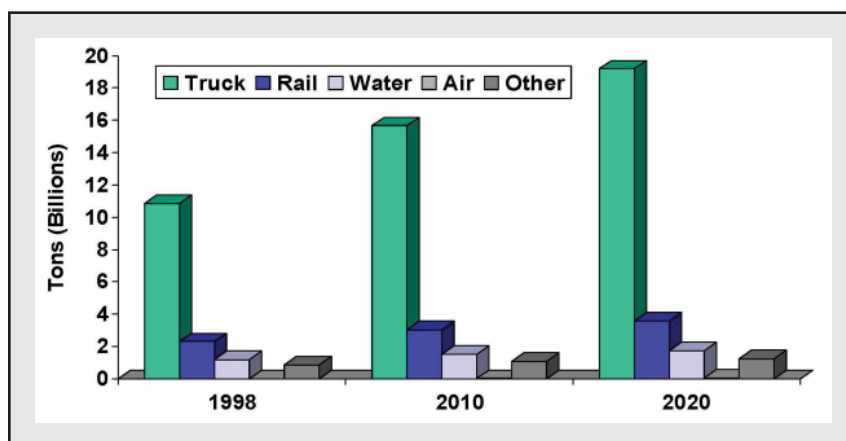
	2002						2035					
	Within State		From State		To State		Within State		From State		To State	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	302.6	100	108.6	100	167.4	100	460.6	100	231.5	100	299.2	100
Truck	271.6	90	81.8	75	78.5	47	422.7	92	173.0	75	158.4	53
Rail	13.1	4	6.2	6	61.3	37	16.9	4	10.7	5	111.5	37
Water	1.9	<1	0.2	<1	0.6	<1	1.7	<1	0.2	<1	0.5	<1
Air, air & truck	<0.1	<1	<0.1	<1	<0.1	<1	<0.1	<1	0.2	<1	0.1	<1
Truck & rail	<0.1	<1	0.1	<1	0.5	<1	<0.1	<1	0.2	<1	1.2	<1
Other intermodal¹	0.2	<1	0.5	<1	0.7	<1	0.3	<1	1.0	<1	1.8	<1
Pipeline & unknown²	15.8	5	19.8	18	25.9	15	19.1	4	46.3	20	25.6	9

Shipments by Value: 2002 and 2035 (\$ Millions)

	2002						2035					
	Within State		From State		To State		Within State		From State		To State	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	181,204.2	100	201,858.9	100	180,117.6	100	307,222.3	100	396,424.5	100	470,623.9	100
Truck	170,269.7	94	177,923.5	88	139,237.5	77	289,727.2	94	344,936.8	87	345,264.9	73
Rail	510.9	<1	2,267.1	1	6,548.6	4	669.1	<1	3,919.1	<1	10,570.9	2
Water	300.0	<1	22.8	<1	194.9	<1	189.3	<1	34.8	<1	156.4	<1
Air, air & truck	157.3	<1	2,080.3	1	3,196.2	2	160.1	<1	2,959.0	<1	7,835.3	2
Truck & rail	<0.1	<1	285.4	<1	1,395.2	1	<0.1	<1	595.4	<1	3,404.2	<1
Other intermodal¹	3,780.6	2	11,020.8	5	20,503.8	11	7,671.1	2	24,546.3	6	79,469.0	17
Pipeline & unknown²	6,185.7	3	8,259.0	4	9,041.3	5	8,805.6	3	19,433.1	5	23,923.2	5

The growth in regional population coupled with the increasing number of businesses requires the region to carefully consider and plan for the projected increased in freight traffic. Regional businesses depend on the transportation infrastructure to deliver economic competitiveness. However, major challenges must be addressed to ensure that the MUMPO region can remain competitive.

Freight Tonnage Forecasts by Mode, 2020



Source: FHWA Freight Analysis Framework Project, cited in "Freight Transportation Policy" (Michael Walton, Ph.D., P.E., University of Texas)

11.7 Freight

11.7.4 Policies and Recommendations

■ Future Outlook

The Battelle Institute noted in 2007 that "the introduction of just-in-time delivery systems and the globalization of markets have changed the nature of transportation demand for U.S. companies, and increasingly greater emphasis is being placed on rapid, dependable, and flexible transportation options. This has resulted in a shift towards more reliance on air transport and intermodal options."

The function of freight and its use of publicly-owned or regulated infrastructure have taken on a new dimension with the arrival of the "new economy." Companies have incorporated transit into their supply chains and now depend on a flexible and reliable system to provide them with a competitive advantage. Regional systems not able to accommodate the new reality could force distributors and businesses to leave the region, taking with them local jobs, investments, tax base and economic activity.

■ Planning and Analysis in the Southeast

Georgia's "Commission for a New Georgia" has commissioned a report on freight-related issues. The report is being prepared by the Center for Innovation for Logistics, whose mission is "accelerating logistics growth and competitiveness in the state."

Furthermore, the State of Georgia recently issued an RFP to complete a statewide logistics and freight plan through the year 2050. The State has declared a mission "to support and grow the strategic industries of freight and logistics."

The City of Atlanta completed a freight land use plan in 2008 (*Atlanta Regional Freight Mobility Plan and Land Use Analysis*) that has been lauded by professionals in the freight industry. Stating that “proactive freight planning is critical to regional economic vitality and quality of life,” the City concluded it needed to:

- ▶ *consider freight implications in land use planning and development review activities, and*
- ▶ *plan and design newly emerging areas to accommodate freight needs.*

North Carolina State University’s Institute for Transportation Research and Education has studied the freight problems in the region and offered detailed solutions. Earlier this year, Program Director Ron Hughes, Ph.D., presented objectives to USDOT for a national freight plan that incorporates the broader challenges facing freight. The seven objectives are:

1. Improve the *operations* of the existing freight transportation system.
2. Add *physical capacity* to the freight transportation system in places where investment makes economic sense.
3. Use *pricing* to better align all costs and benefits between users and owners of the freight system and to encourage deployment of productivity-enhancing techniques.
4. Reduce or remove *statutory, regulatory and institutional barriers* to improved freight transportation performance.
5. Proactively identify and address *emerging transportation needs*.
6. Maximize the *safety and security* of the freight transportation system.
7. Mitigate and better manage the *environmental, health, energy and community impacts* of freight transportation.

A nationally recognized expert in transportation and logistics—Professor C. Michael Walton, Ph.D., P.E., Department of Civil Engineering, The University of Texas at Austin—believes the goal of transportation policy is to “support economic development through improved transportation for trade.” He has outlined a set of recommendations for North Carolina (below) that encompass a broad scope of actions. Professor Walton recommended North Carolina:

- Initiate a Governor’s summit on freight/trade transportation ... including a statewide freight advisory function ... authority, accountability, open membership framework.
- Develop a NC freight business plan.
- Establish a freight champion in Raleigh.
- Develop high level freight efficiency and security metrics; combine public databases and private information systems to benchmark performance (i.e., a knowledge-based system).
- Examine building/zoning codes, urban freight mobility strategies to bridge freight efficiency/community livability issues.
- Build graduate program combining engineering, business administration, logistics, planning, and public policy.
- Coordinate investment strategies with neighboring states.

■ Freight Considerations in Current MUMPO Project Ranking Process

With the increasing globalization of the economy and the increasing use of global supply chains, freight handling and transit capacity has become an important platform for regional economic

growth. Growth and prosperity in the MUMPO region rely increasingly on the capacity of local infrastructure to efficiently and effectively handle the forecasted growth of freight and cargo.

The Mecklenburg-Union Metropolitan Planning Organization currently considers freight in its project evaluations by assigning points to projects that serve freight terminals and intermodal sites. MUMPO should consider the following evaluations for accommodating freight in roadway improvements:

- ▶ Consider and modify current project ranking criteria to include strategies for improving freight movement through the region.

■ Recommended Approach for Future MUMPO Activities

Assumptions:

- International freight trends will have increasing influence on the amount of freight traffic in the MUMPO region and ports serving the MUMPO region will be important sources for freight traffic.
- National security issues will affect the freight industry in our region.
- Regional advanced manufacturing companies and logistic companies will rely on a flexible and responsive transit system to allow the companies to compete nationally and internationally.
- Logistics is an important industry for employment and economic growth in the MUMPO region.
- The flexibility of freight systems in the region is affected by both physical and operational infrastructure. Since the industry is concerned about the entire system, from processing systems at ports to state truck system to highway lanes, it is important to develop a comprehensive plan for freight.
- The growing regional population will compete with freight for land and space on the roads.



Experts, planners, and transportation officials have begun a dialog regarding logistic-freight challenges and possible solutions in North Carolina. But questions remain regarding the role MUMPO will play. Where does MUMPO fit in the scenario? How can MUMPO address safety and security issues and build jobs and prosperity for the region? On the following are recommendations for specific steps that could be taken by MUMPO.

▶ **See the Map Gallery at the end of the document for this map:**
[Intermodal Freight Facilities](#) [Figure 11.11](#)

MUMPO Recommendations

1. **Allocate resources and outline a time frame to develop a comprehensive Freight/Logistics plan for the MUMPO region.** In addition to recording baseline conditions, the plan should take a broad approach and:
 - a. create a vision for freight that encompasses all aspects of the industry;
 - b. review future land use projections and accommodate the evolving requirements for the logistics-freight industry;
 - c. examine the role the Port of Wilmington plays in the economic future for the MUMPO region;
 - d. determine how creating additional short line railroads and upgrading older tracks to handle heavier rail cars would improve freight transit in the region;
 - e. develop strategies and objectives to work with operational challenges within infrastructure management systems;
 - f. review recommendations from experts in the field; and
 - g. ensure projects are linked to the rating system adopted by MUMPO.
2. **Actively encourage the North Carolina Secretary of Transportation to develop a state-wide Freight-Logistics Forum** that:
 - a. addresses the challenges presented by modern freight systems;
 - b. presents innovative solutions to complex challenges including operations and management; and
 - c. champions freight issues before State entities.
3. **Create a regional Freight Forum** that includes representatives from both public and private entities and all parts of the logistics/freight industry. The Forum should:
 - a. include members from neighboring MPOs and RPOs;
 - b. include representatives from companies across the spectrum of logistics-freight;
 - c. include all modes of freight and cargo;
 - d. include representatives from academia and the community college system;
 - e. ensure that workforce development are represented;
 - f. offer comments on transportation plans, especially those affecting freight; and
 - g. provide insight into the evolving industry and possible impacts on the region's economy.
4. **Initiate Freight Seminars** for local transportation planners, stakeholders, and others to learn how this complicated, new challenge is being addressed in academia, in the field and in the world. Possible topics may include security, pricing, transportation needs, regulatory barriers, etc.
5. **Regional stakeholders** must agree on goals and strategies to support the movement of freight around and through the region.
6. **Join local logistic/trade groups** to keep informed about the industry and local issues that might impact transportation planning.
7. **Future Congestion Management Plans** should consider freight/trucking congestion.

11 Transportation Plan Components

11.8 Other Transportation Modes

The transportation needs of the residents, visitors, and workers in the MUMPO urban area are sometimes met by transportation modes that fall outside the traditional transportation planning process. Aviation, inter-city rail and bus, and taxi service each play a significant role in transportation in the area.

This chapter describes operations and plans for these modes in the MUMPO area, and makes recommendations how to more formally coordinate planning efforts and project development. This is vitally important to the area as public-private partnerships become more frequent and holistic strategies to address transportation issues becomes the standard.

11.8 Other Transportation Modes

11.8.1 Aviation

■ Mecklenburg County

In order for Charlotte Douglas International Airport to continue accommodating the anticipated growth in air travel and cargo shipments that is so important to the regional economy, improvements and expansions need to be made to the facility's main components:

- Runway and taxiway system
- Road network
- Passenger terminal area
- Cargo and general aviation
- Parking

In 2008, the Airport served almost 35 million passengers and handled over 132,000 tons of cargo. The airport averaged 652 daily departures, with nonstop service to 128 destinations. Charlotte Douglas is currently 14th nationwide in passengers and 34th nationwide in cargo.

The **runway and taxiway system** already experiences delays, indicating it is unable to adequately accommodate demand during peak periods. Because of the expected growth in operations, particularly during peak periods, this lack of runway capacity is the airport's most significant constraint to growth.

The addition of a more widely-spaced parallel runway would increase peak period capacity and reduce annual delay costs by \$36 million. The runway would be located 4,300 feet west of Runway 18C, and would be 9,000 feet long.

Based on projected growth in air cargo, the existing length of Runway 18R/36L (10,000 feet) would be inadequate. There are plans to extend Runway 18R to 12,000 feet, which will allow non-stop Pacific Rim service with aircraft such as the Boeing 747, 767, or MD-11.

Some **roads** will be relocated and others upgraded as a consequence of the airfield expansions:

- A new Airport Entrance Road will be constructed, extending Little Rock Road into the Airport terminal area as a limited-access roadway.
- West Boulevard will be relocated as part of both the new runway and runway extension projects. This road will connect to an interchange at I-485. West Boulevard will provide primary access to the Air Cargo Center and the commercial developments that are attracted to the areas south of the airport.
- A section of Wilkinson Boulevard will be upgraded to a limited access roadway from I-485 to the Airport Entrance Road that will be constructed by NCDOT. Wilkinson Boulevard will then provide seamless access from the interstate to the front door of the terminal.

The **passenger terminal** will be expanded on Concourse E, which is the Airport's regional aircraft facility. The existing concourse has 32 gates, which will be expanded to a total of 50 gates in multiple phases over the next two to three years. The Airport will also be expanding the terminal lobby to accommodate passenger growth. The expansion will provide more space for security checkpoints, airline ticketing space, and baggage claim areas.

The **cargo building area** will be increased from the current 288,000 square feet to 1.2 million square feet by 2015. Because of the needed space for cargo aircraft parking, the total property set aside for air cargo will more than triple from today's 43 acres to 146 acres.

Charlotte Douglas has experienced tremendous growth in **parking** demand over the past five years. In response to that growth, the airport continues to expand surface lots and is constructing a parking structure in the business valet parking lot. The Airport will also be constructing a larger parking deck in front of the terminal that will accommodate both hourly parking and rental car ready return facilities.

■ Union County

The City of Monroe assumed direct management of aviation services at the Monroe Regional Airport on March 1, 2009. For many years, the FBO (Fixed Base Operation) had been managed by private enterprise under contract to the City.

The Monroe Regional Airport is a popular destination for business and pleasure aircraft due to the proximity of businesses and attractions in the areas of Monroe and southeastern Charlotte-Mecklenburg.

The Monroe Regional Airport operates a full-service FBO, providing aviation fuels, hangars, parking, tie downs, catering, pilot's lounge (with shower), refreshment area, computer flight planning, satellite weather service, conference room, aircraft towing, lavatory service, ground power units, baggage handling, crew car, rental cars, hotel reservations, and all the other services normally provided at large metropolitan airports. All Aircraft Line Service Technicians, Customer Service Representatives, and the Airport Manager are experienced FBO personnel with many years of service in aviation.

The Monroe Regional Airport meets the service needs of corporate and private aircraft from small piston engine aircraft to larger turboprop and jet aircraft. This includes over eighty aircraft based at the airport and the daily transient aircraft. A modern terminal building and FBO employees welcome passengers and pilots upon their arrival at Monroe. The terminal building is also the home of the Monroe Economic Development Office.

Over the years, the City of Monroe has made improvements to enhance the usefulness of the airport. The airport has a 5,500 foot runway with a full-length taxiway, an ILS (instrument landing system), remote radio clearance delivery for instrument flights, an automatic weather observation system, full runway and taxiway lighting systems, and the recent addition of improved approach lights to aid in landing of instrument flights.

The City of Monroe is also planning for the future of the airport. Currently, there are plans to strengthen and lengthen the runway to accommodate much larger aircraft. There are also plans to build a new maintenance hangar and build additional storage hangars.

11.8 Other Transportation Modes

11.8.2 Inter-City Rail

The Charlotte region has a long history of rail service for both passenger and freight. Passenger rail popularity surged in 1990 in the Charlotte region when the state of North Carolina began daily round trip service between Charlotte and New York on the Carolinian. In the past decade, passenger rail boardings grew by 242 percent, placing a strain on the existing Amtrak station.

■ Amtrak Service

Charlotte's current Amtrak station is located on Tryon Street, approximately two miles north of the Uptown business district. Constructed in the 1960s, the station does not meet all of the current North Carolina or Americans with Disabilities Act (ADA) standards for disabled access in and around the station and platforms. The parking lot contains only 60 unfenced spaces.

The station is in an existing railroad freight yard, creating conflicts for both freight and passenger rail traffic. As an interim measure to better accommodate the growing crowds, the NCDOT and Amtrak expanded the waiting room and added a ticket window in 2002.

Pedestrian access and connections to other transportation modes are inadequate at the current station. The region's main business, government and cultural center is two miles away and there are no connections to inter-city buses or rental cars nearby. CATS provides local transit service to the station, but passengers who wish to connect to CATS Route 11 must cross four lanes of busy traffic (with no traffic light or crosswalk) to travel downtown to either reach their destinations or connect to other transit services.

The current schedule consists of three trains — the Piedmont, the Carolinian, and the Crescent. These three trains provide six daily trips to and from Charlotte on the following scheduled times:

2:03 AM	Crescent	northbound departure to New York
2:45 AM	Crescent	southbound departure to New Orleans
7:40 AM	Carolinian	northbound departure to New York (via Raleigh)
10:02 AM	Piedmont	southbound arrival from Raleigh
5:05 PM	Piedmont	northbound departure to Raleigh
8:24 PM	Carolinian	southbound arrival from New York (via Raleigh)

■ Southeast High Speed Rail (SEHSR) Corridor

In 1992 the U.S. Department of Transportation designated five national high-speed rail corridors across the country. The original Southeast High Speed Rail (SEHSR) Corridor — extending from Washington, D.C. through Richmond and Raleigh to Charlotte — has been identified as the most economically viable high speed rail corridor in the country.

The Southeast High Speed Rail program is designed to provide an alternative to the overburdened highway and airport networks. Because of its slower speed, the existing passenger rail service is not competitive with these two modes, but the proposed SEHSR service could reduce travel time between Charlotte and Washington from the current ten hours to an estimated six to seven and one half hours.

In October, 2002, the North Carolina and Virginia transportation departments completed a Tier I Environmental Impact Statement (EIS) for the Washington, DC to Charlotte, NC portion of the corridor. The Tier I EIS took a broad look at potential impacts along nine possible routes and identified the preferred route. The second study phase – Tier II – includes more specific analysis along the preferred route, and was completed in 2004.

The American Recovery and Reinvestment Act (ARRA) includes \$8 billion to deploy high-speed passenger rail systems and improve intercity passenger rail across the country. The U.S. Department of Transportation will award the funds on a competitive basis, and NCDOT is aggressively pursuing this funding to use for further development of the Southeast High Speed Rail Corridor between Charlotte and Washington, D.C.

NCDOT has submitted applications for 90 rail projects totaling about \$4 billion for ARRA funding. The list includes more than \$900 million for projects that are considered “shovel ready” and more than \$3 billion for corridor development projects, which will involve Virginia and North Carolina. The projects will not only improve service for current train passengers, but they will also help establish the framework for SEHSR. In late January, 2010, \$545 million was awarded from ARRA for the rail corridor.

■ Proposed Multimodal Station

A new multimodal station in Charlotte, including a rail passenger facility, is being planned to better serve the increasing number of passengers and accommodate Norfolk Southern’s desire to separate passenger and freight operations.

NCDOT has completed an engineering feasibility study for a multimodal station on West Trade Street that would create a vastly improved rail and transportation center serving the Charlotte region and the state. The station could include a new inter-city bus terminal as well.

The proposed station's site boundaries are Trade Street, Fourth Street, Graham Street, and the Norfolk Southern Railroad. Property acquisition totaling 27 acres was completed in February, 2004. The timing of the multimodal station's advancement to the Preliminary Engineering/Environmental Impact Statement (PE/EIS) phase is based on continued federal and state funding. Development of the new station and related track improvements is estimated to cost between \$110-207 million. The facility would likely be built in phases concurrently with improvements are made to the regional transit system and North Carolina's rail services.

11.8 Other Transportation Modes

11.8.3 Inter-City Bus

■ Mecklenburg County

Greyhound Lines, Inc. serves the Charlotte region from its terminal located on West Trade Street. There are approximately 86 daily arrivals and departures serving the entire continental United States. Six local and nine express CATS routes, as well as the Gold Rush Red Line uptown circulator, serve the Greyhound terminal. This permits Greyhound's passengers convenient access to the Charlotte Transportation Center and other transportation terminals in the region. As noted in the previous section, NCDOT is currently acquiring land on West Trade Street for construction of a new multimodal station that could include a new inter-city bus terminal.

■ Union County

There is no inter-city bus service provided in Union County at present, and no public plans to introduce new service.

11.8 Other Transportation Modes

11.8.4 Taxi Services

Passenger vehicle-for-hire services are an integral mode of transportation in the Charlotte region. Under City Code, the City of Charlotte regulates the industry within the corporate limits for safety, fares, and number of approved companies and vehicles. Effective July, 2001, the City ordinance was revised to include regulation of not only metered vehicles (taxicabs) but also non-metered vehicles (limousines, shuttle vans, special needs vehicles, and executive cars).

■ Mecklenburg County

There are presently 13 approved taxicab companies located in Charlotte, operating a combined total of 411 vehicles. These companies provide on-demand services to destinations throughout the Charlotte region. The distribution of vehicles is spread fairly evenly across service providers, with all companies having at least 30 vehicles in their fleet.

Aside from on-call services typically provided by taxi companies, Mecklenburg County's Social Services has contracted with cab companies to offer reduced fare service to the elderly and disabled within the community. Additionally, CATS contracts with taxi operators to provide free

rides home (up to twice a month) to vanpool and express bus riders who have emergency, medical appointments or unplanned work schedule changes.

■ Union County

There are currently seven taxicab companies providing service within Union County, operating 46 vehicles. These companies provide on-demand services in a similar manner to those companies in Mecklenburg County, although due to the more residential and low-density nature of Union County, they almost exclusively provide services on an on-call basis.

11.8 Other Transportation Modes

11.8.5 Coordination with LRTP Development

MUMPO currently does not consider the modes described in this chapter — aviation, inter-city rail, inter-city bus and taxi services — in the development of its Long-Range Transportation Plan (LRTP) project list and rankings.

The airport and rail projects currently in the NCDOT TIP are developed by the NCDOT Rail and Aviation divisions, as well as CATS, Charlotte-Mecklenburg Airport and Monroe Regional Airport. MUMPO does approve amendments to the TIP to include such projects, but typically has very little to do with the actual development of the projects or coordination with the proposing agency.

For CATS' transit projects in Mecklenburg County, the Metropolitan Transit Commission (MTC) governs all decisions. Union County Transportation, governed by the Union County Board of Commissioners, makes all public transportation decisions in Union County.

This 2035 *Long-Range Transportation Plan* includes the following goals related to “other transportation modes”:

Goal 1

Ensure development of area transportation projects is coordinated across modes.

Strategies

- ▶ Include NCDOT rail and aviation divisions on TCC and MUMPO agenda distribution lists.
- ▶ Copy NCDOT rail and aviation divisions on all relevant MUMPO comments for project development reviews.

Goal 2

Increase awareness of area transportation plans.

Strategy

- ▶ Include inter-city bus and rail agencies and companies on relevant TCC and MUMPO project and plan development processes.

12.0

Conclusion

Updating the Long-Range Transportation Plan allows MUMPO, as it does any MPO, the opportunity to incorporate the most recent data, identify any changes in factors affecting travel demand, and modify policies, programs or projects based on the most recent information and conditions. This *2035 Long-Range Transportation Plan* (LRTP) is different from the previous LRTP (the *2030 LRTP* produced and adopted four years ago) for the general reasons mentioned above.

MUMPO is responsible for long-range transportation planning and programming for an area where jobs and households have grown rapidly during the past thirty years. Demographic projections (Chapter 9) show growth is expected to continue at a rapid pace for the foreseeable future, even given the major economic downturn that has been experienced over the past two years. Prior to this downturn, even when the national economy's job growth slowed and tens of thousands of manufacturing jobs evaporated from other counties in the Carolinas, Mecklenburg and Union counties continued to steadily attract new jobs and residents.

That growth increased the demand for transportation facilities and services in MUMPO's planning area. MUMPO's past commitments to investing in transportation infrastructure helped the area attract and cope with the current population growth in and travel patterns. The additional economic activity has significantly increased freight and goods movement in the region.

This LRTP describes the investments in freeways, other roadways, and rapid and other forms of transit that will provide additional capacity to serve the increase in travel demands projected through 2035. Funds will be spent on projects identified in this LRTP to widen and extend freeways and other roadways in the MUMPO planning area. The number of projects is almost 2/3 less than in the previous LRTP but almost as costly. Additionally, hundreds of millions of dollars are anticipated to be spent to greatly expand transit services, particularly in Mecklenburg County, and to enhance the efficiency and capacity of intermodal freight facilities and Charlotte/Douglas International Airport.

Challenges

The *2030 Long-Range Transportation Plan* noted four specific challenges facing area MPO's. These challenges, which are even more compelling today in this bi-state metropolitan region, are:

1. responding effectively to **regional issues** – from managing growth to developing collaborative solutions across various jurisdictional boundaries;
2. providing more **transportation choices** – beyond building roadways solely for motor vehicles;
3. securing additional **project financing**; and
4. demonstrating conformity with North and South Carolina's State Implementation Plan(s) for attaining (or not violating) the National Ambient **Air Quality** Standards.

1. Regional Issues

While this LRTP reflects and incorporates several regional data collection and modeling initiatives, there are still various regional planning issues that will need to be addressed in upcoming LRTPs prepared by MUMPO and adjacent MPOs. The following regional initiatives were successfully accomplished during the past decade:

- compiling the first-ever inventory of land uses and socio-economic data,
- producing the first-ever regional projections of employment and population,
- creating a new travel forecasting model covering all or parts of ten counties in the bi-state region, and
- preparing the first-ever region-wide forecasts of highway and transit travel.

As a result of this work, a strong technical foundation for transportation and other related types of planning now exists in the Greater Charlotte region. However, the organizational foundation for implementing ongoing planning efforts involving the region's four MPOs is more tenuous than are the technical data and travel forecasting model described above.

The region's four MPOs collaborated to accomplish the technical activities accomplished during the past three years. Updating the demographic, economic and land use data, as well as any other travel-related assumptions necessary to produce travel forecasts, must now evolve into a *continuous* undertaking so that the investments made to date in regional data and the new travel forecasting model are not wasted. Travel flows and air quality impacts are already affecting the entire region, which is an area larger than that included in all four MPOs.

The need to prepare forecasts based on region-wide highway or transit networks, and region-wide land use or socio-economic assumptions, will make the MPOs more interdependent. Crafting the agreements to update data required for modeling and to produce new forecasts involving the four MPOs and various other entities to establish the funding and staffing arrangements remains to be accomplished.

2. Transportation Choices

The projections of future traffic cannot be accommodated solely on roadways identified on the MPO's Thoroughfare Plan. With increasing interest in creating pedestrian-scale activity centers and/or villages, a greater emphasis on multimodal choices is necessary.

Consequently, MUMPO's LRTP recommends extensive expansions of the services provided by the Charlotte Area Transit System. One rapid transit corridor — the South Corridor — opened for service in 2007. Ultimately, a five-corridor rapid transit system is expected to provide a new form of transportation capacity that will make available high-quality transportation services for an ever-growing percentage of persons traveling in Mecklenburg County.

However, since large increases in population and employment are also projected to occur beyond Mecklenburg County, the growth in the magnitude of travel across Mecklenburg County's boundaries will account for increasing percentages of the travel occurring on area freeways. HOV and/or HOT lanes will need to be part of the region's future transportation network.

Constructing toll roads or instituting managed lanes can help create new revenues to meet the challenge of securing all the financing necessary for transportation projects in this rapidly growing region.

3. Financing

MUMPO and the adjacent MPOs will need to devise new funding arrangements and give more priority to serving travel crossing the boundaries of MPOs, especially to implement facilities intended to serve transit riders and/or persons traveling in carpools or vanpools.

While innovative financing methods (particularly managed lanes and toll roads) are being proposed, additional financial partnerships will become more important in order to build and/or operate transportation facilities that cross MPO boundaries. Extensions of transit guideways or bus routes beyond Mecklenburg County will require local funding commitments to cover portions of the construction and/or operating costs.

Reaching agreements on the transit funding levels to be allocated to each MPO, counties within MPOs, or other local governments, will take continued negotiations. Without undertaking and successfully concluding those negotiations — probably focused on specific transit project or service proposals — offering transit options for travel across Mecklenburg County will not be possible.

4. Air Quality Standards

Continued employment and population growth in MUMPO's planning area – and in the other areas that also comprise the bi-state metropolitan area – will increase the vehicle starts and miles of travel that are this area's leading cause of air pollution. The entire region's ability to successfully demonstrate air quality conformity will remain a crucial issue. Demonstrating how this LRTP complies with the air quality conformity requirements is the subject of a separate, but related document.

Next Steps

The MUMPO Board will adopt a *2035 Long Range Transportation Plan* based on assuming no new revenues. MUMPO staff has been directed to begin preparing the next LRTP soon after the adoption of the 2035 LRTP.

APPENDIX A

Project Ranking Methodology

Mecklenburg-Union Metropolitan Planning Organization Long-Range Transportation Plan Roadway Ranking Methodology

Approved by the MPO, November 14, 2007

■ Introduction

The purpose of the Mecklenburg-Union Metropolitan Planning Organization's (MUMPO) Plan Ranking Criteria for Major Roadway Project's process is to facilitate determination of the region's project priorities to be used in development of a fiscally constrained Long-Range Transportation Plan (LRTP).

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) calls for an LRTP development process that documents a methodology for ranking project requests that reflects local and metropolitan mobility, environmental and air quality goals.

■ Objective

The process outlined below is designed to address roadway needs. The Technical Coordinating Committee (TCC) will use the procedure to develop a draft project priority list. This draft priority list will be used as a starting point by the Metropolitan Planning Organization (MPO) for the approval of a final LRTP roadway project priority list.

The MPO may reorder projects at its discretion based upon its members' knowledge of the urban area and the policies of their communities. Therefore, the TCC will make its technical recommendation on a draft priority list based on the procedure described below, and the MPO may make any changes deemed appropriate.

■ Procedure for Ranking Projects

The Meetings are scheduled to allow staff to rank projects in a given geography. Each meeting consists of MUMPO staff and staff from the jurisdictions in its area. The meetings cover the following geographies:

- 1) Northern Mecklenburg County towns, and north Charlotte (generally from I-485 to the Iredell County Line)
- 2) Charlotte
- 3) Southern Mecklenburg County towns and south Charlotte (generally from I-485 to the Union County Line)
- 4) Union County

The number of meetings for each area is not pre-determined, as the number of projects in each varies. Projects reviewed are either those from the most recent LRTP or those identified by staff or elected officials from MUMPO area jurisdictions. Each project is given as much time as needed to discuss each of the criterion in depth. The criteria are awarded individual scores by majority rule, but usually are based on group consensus.

For Criterion #1 (Reduces Congestion), point values are based on travel demand model outputs which determine per lane volumes. Those volumes are matched to point values noted in the criterion's two tables.

Once the criteria have received individual scores and those scores have been totaled, the projects are ranked in priority order (the higher the score, the higher the priority). If total project scores are tied, then staff will review which of the tied projects has the highest number of criteria with scores of five, then four, and so on. If a tie persists, then the overall ranking committee votes to break it.

After the draft priority list is developed, it is then forwarded to the MPO as the TCC's recommended roadway project priorities for the urban area.

■ Project Scoring

- The points that can be assigned in this ranking process range from a maximum of positive five (+5) to a minimum of negative five (-5).
- A cap on the maximum or minimum number of points has been established in many of the categories. The objective of establishing caps is to reflect the relative importance of the criteria.
- Scores in the *Reduces Congestion* criterion are assigned through outputs from the regional travel demand model.
- Scores in the *Supports Local Land Use and Improves Quality of Life* criterion are established by local land use or transportation planners, subject to consultation with the ranking group. Only one (+5) score per jurisdiction is permitted.
- In the event of a tie, the project receiving the highest number of (+5) scores will be ranked higher. If both projects receive the same number of (+5) scores, the project to be ranked higher will be the one with the highest number of (+4) scores. If necessary, the process will continue until the higher ranking project is established.
- As noted below, a (+5) score suggests that the project has a very high positive impact on the criterion in question. Conversely, a (-5) score suggests that the project has a very high negative impact on the criterion.

Ranking Criteria

1. Reduces Congestion

Objective: To assess the relationship between the amount of physical and operational capacity provided by the roadway project in comparison to the vehicular travel demand for the LRTP’s final horizon year (e.g., for the 2035 Plan, 2035 modeled volumes will be used, etc.).

Widening Projects

Daily Vehicle Volumes Per Lane (thousands) Projected to Final Horizon Year						
Arterial	Freeway	Points				
		Improved* 2-Lane	Median (LTL)**	Widen by 4-6 Lanes	Widen by 2-4 Lanes	Convert to Freeway or Expressway
4 to 6	8 to 12	1	1	1	1	1
>6 to 7	>12 to 14	1	1	1	2	2
>7 to 8	>14 to 16	1	1	2	3	3
>8 to 9	>16 to 18	2	2	3	4	4
>9 to 10	19+	3	3	4	5	5
10+		3	4	5	5	5

* Includes widening pavement (without adding lanes),and/or building curb and gutter or shoulders

** Includes Left Turn Lanes

New Roadway Alignment/Location Projects

Daily Vehicle Volumes (thousands)	Points
3 to 6	1
>6 to 12	2
>12 to 18	3
>18 to 24	4
>24	5

2. Improves Safety

Objective: To reduce or remove potential for crashes;to increase access control.

- Pavement widening projects receive up to 2 points.
- Medians receive up to 3 points.
- Interchanges and roundabouts (replacing at-grade intersections) receive up to 4 points.
- A project providing additional, significant safety benefits may receive up to 5 points.

Examples include but are not limited to improving dangerous curves and roadway relocation.

3. **Accesses Transit Parking or Drop Off**

Objective: Promote the use of rapid transit, express bus transit and transit hubs.

- Project provides direct access to express bus park & ride lot: up to 3 points
- Project provides direct vehicle access to transit hubs not in rapid transit corridor: up to 3 points.
- Project provides direct vehicle access to a rapid transit station: up to 5 points.
- Other projects: 0 points.

4. **Supports Local Land Use Planning and Improves Quality of Life**

Objective: To assess the project's impact on locally adopted land use plans and/or policies.

- Point value to be established by local (land use or transportation) planner(s) subject to consultation with the ranking group.
- Includes effect on urban environment, parks, historic properties and or other properties purchased for open space purposes.

Note: up to 5 points may be awarded in this category.

5. **Impacts on the Natural Environment**

Objective: To assess the anticipated effect on documented environmentally sensitive area.

- Projects that do not impact documented environmentally sensitive areas: up to 3 points.
- Projects into documented environmentally sensitive areas with no or little negative impact: 0 to -2 points.
- Projects into documented environmentally sensitive areas with significant negative impact: 0 to -5 points.

6. **Improve Accessibility to a Center City (either Charlotte or Monroe)**

Objective: Emphasize the importance of center cities in the region.

- The distances from the two center cities shall be measured from the two points noted below:
 - ▶ Center City Charlotte: the intersection of Trade and Tryon streets.
 - ▶ Center City Monroe: the intersection of Hayne and Franklin streets.
- Points are awarded to roads that generally spread out from the Center City, known as "radial routes." Radial and non-radial routes include but are not limited to the following:
 - ▶ Radial: Charlotte – Freedom Drive, Graham Street, Randolph Road, and South Blvd
 - ▶ Radial: Monroe – Franklin Street, Weddington Road (NC 84), Hayne Street, and Morgan Mill Road
 - ▶ Non-Radial: Charlotte – W.T. Harris Boulevard, NC 51, Billy Graham Parkway, Mt. Holly-Huntersville Road
 - ▶ Non-Radial: Monroe – Rocky River Road, Unionville-Indian Trail Road, Martin Luther King, Jr. Boulevard, and Sutherland Avenue
- Interchanges receive points only if they add radial capacity (either added thru lanes or if it impacts a radial facility that is being converted to an expressway).
- Non-radial roads receive no points.

Points for Accessibility to Center City

Distance from Center (Miles)	0-4 miles	4-8 miles	8-12 miles	12-16 miles	>16 miles
Freeway/Expressway*					
Widen from 4 lanes to 6 lanes	5	4	3	2	1
Widen from 6 lanes to 8 lanes	4	3	2	1	0
Widen from 4 lanes to 6 lanes (+HOV)	5	5	4	3	2
Widen from 6 lanes to 10 lanes (+HOV)	5	5	4	3	2
New 4-lane Freeway	5	5	4	3	2
Convert to Expressway	5	5	4	3	2
Non-Freeways*					
Widen from 2 lanes to 4 lanes	4	3	2	1	0
Widen from 4 lanes to 6 lanes	3	2	1	1	0
Add median or center, two-way left-turn lane	2	1	1	1	0
Widen width of existing lanes	1	1	0	0	0
New 2-lane facility	4	3	2	1	0
New 4-lane facility	5	4	3	2	1

*Projects may receive up to the number of points specified in each category

7. Increases Accessibility to Other Employment Centers

Objective: To support access to employment centers within MUMPO and nearby employment centers outside the MUMPO boundary and to support economic growth,.

- Access to center city Charlotte or Monroe is not a consideration for points in this category.
- Size and location of economic center is based on employment projections for a Traffic Analysis Zone (TAZ*) for the Plan’s final horizon year.
- Within each category, points are scaled based on the project’s proximity and accessibility to the employment center (planners for the area need to identify the proposed location of future and existing centers).

*TAZ maps are a product of the socio-economic projections that are endorsed by the MPO and show locations of future level population and employment.

Points are awarded as follows:

- Less than 1,000 employees: 0 points
- 1,000 – 1,500 employees:..... Up to 1 point
- 1,501 – 3,000 employees:..... Up to 2 points
- 3001- 4500 employees:..... Up to 3 points
- 4,501 – 6,000 employees:..... Up to 4 points
- Greater than 6,000 employees: Up to 5 points

8. Impacts on Air Quality

Objective: To improve air quality by reducing vehicle miles traveled (VMT by increasing vehicle occupancy, encouraging non-motorized travel, or creating new roadway connections.

Points are awarded as follows:

- 5 or more miles of managed lanes Up to 2 points
- 4 or fewer miles of managed lanes Up to 1 point
- Projects that significantly reduce VMT by improving connectivity.. Up to 2 points
- Projects that greatly induce sprawl..... From -3 to -1 points
- Projects that accommodate bicyclists and/or pedestrians..... Up to 1 point
- Other roadway projects 0 points

9. Supports Low Income and Minority Communities

Objective: To avoid adverse impacts and promote positive social and economic effects on minority and low-income populations.

- Compare positive connectivity/accessibility benefits to negative community impacts.

Low income communities are defined by percentage of households below Federal poverty guidelines in relation to total households in Census tracts. Minority communities are defined by the percentage of minorities in relation to total population in Census tracts.

Note: Up to 5 points may be awarded in this category

10. Promotes Intermodal Connectivity

Objective: Improve access to existing and potential intermodal facilities.

- Charlotte-Douglas International Airport, Monroe Regional Airport, West Trade Multi-modal Station, or National Highway System Designated Freight Terminals receive up to 5 points.
- Potential truck terminal locations on US or NC numbered route next to freeway up to 3 points.
- Existing intermodal sites with 300 or more truck trips per day up to 3 points.
- Existing intermodal sites with 100 or more truck trips per day up to 2 points.

Note: Number of points dependent on distance from intermodal site

11. Provides Benefits That Outweigh Project Costs

Objective: To compare the project’s accumulation of positive ratings and specific beneficial impacts versus the project’s estimated per/mile construction costs and specific, negative impacts.

Point selection is subject to but not limited to the issues below:


- Includes consideration of ROW reservation or dedication, developer participation and portions completed by others.
- Additional points may be awarded to the last segment of a multi-phased project..

Note: Up to 5 points may be awarded in this category

■ RANKING VALUES

+5	Very High positive impact on this criterion
+4	High positive impact on this criterion
+3	Moderate positive impact on this criterion
+2	Some positive impact on this criterion
+1	Slight positive impact on this criterion
0	No impact on this criterion
-1	Slight negative impact on this criterion
-2	Some negative impact on this criterion
-3	Moderate negative impact on this criterion
-4	High negative impact on this criterion
-5	Very High negative impact on this criterion

■ RANKING OF INDIVIDUAL PROJECTS IN THE 2035 LRTP

The complete list of projects considered for this *2035 Long-Range Transportation Plan* — and the points they received for each criterion — begins after page A-8. 

MUMPO 2035 L RTP
Roadway Candidate Project List and Data (Table A-1)

Project ID	MO Rank	MO Rank	Project	Project Links	Existing Lanes	Type	Funding Source	Sphere	System	Reduce Congestion	Improves Safety	Access to Roadway	Supports Local Land Use & Improves Quality of Life	Impacts on the Natural Environment	Improves Center City Character or Minor	Increases Accessibility to Employment Centers	Impacts on Quality	Supports Low Income and Minority Communities	Practical Connectivity	Benefit/Cost	Total Score	
3109	1	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Freeway (4)	Toll	Union County	State	5	5	0	5	-2	5	4	1	0	2	5	27	
3110	2	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	6 lanes	Expressway (6 HOV or BV)	Equity	Charlotte	State	4	4	5	4	0	4	0	1	0	0	4	25	
3109	3	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	4-6 lanes	Expressway (4 HOV or BV)	Equity	Charlotte	State	5	4	4	3	-1	4	0	1	0	0	3	25	
3109	4	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	simple interchange	Expressway (4 HOV or BV)	Equity	Charlotte	State	5	4	4	3	-1	4	0	1	0	0	2	25	
3109	5	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lanes	Equity	Cornelius	State	3	3	5	3	0	3	2	1	0	0	2	25	
3109	6	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	4-lanes, median divided	Expressway (4 HOV or BV)	Equity	Charlotte	State	5	4	4	3	-1	4	0	1	0	0	4	25	
3109	7	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Median, Bike Lane	Loop	Charlotte and Huntersville	State	5	3	5	4	1	0	4	2	0	0	3	25	
3109	8	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	Improvements to Main Street, to Main to NC 115	Widening (2), New Road (2) Median, Bike Lanes	Local	Huntersville	State	2	4	5	5	2	0	3	1	-1	0	3	24	
3109	9	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	4-lane, undivided	Widening (2), Bike Lanes	Equity	Cornelius and Davidson	State	3	2	5	4	3	0	3	1	2	0	1	24	
3109	10	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	4-lane, median divided	Expressway (6 Lanes + HOV or Bypass)	Equity	Charlotte and Matthews	State	5	4	5	4	-1	4	0	0	0	0	2	23	
3109	11	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lanes	Equity	Matthews	State	5	3	0	5	1	0	4	1	0	1	3	23	
3109	12	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lanes	Equity	Matthews and Mint Hill	State	5	3	1	5	1	0	3	1	0	0	4	23	
3109	13	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, wood	Equity	Charlotte and Huntersville	State	5	3	1	4	-1	0	5	1	0	2	3	23	
3109	14	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lane	Equity	Huntersville	State	5	4	4	4	-1	0	3	1	-1	0	4	23	
3109	15	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lane	Equity	Charlotte	State	5	3	0	3	0	0	3	1	0	0	3	23	
3109	16	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Median, Bike Lanes	Local	Charlotte	State	5	3	0	3	0	4	0	1	0	0	3	23	
3109	17	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Median, Bike Lanes	Local	Charlotte	State	4	4	1	4	-1	0	4	3	0	1	4	23	
3109	18	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lane	Equity	Huntersville	State	4	3	4	4	0	0	3	1	0	0	3	23	
3109	19	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane road	Widening (4) Median, Bike Lane	Local	Charlotte	State	3	3	1	3	0	1	3	1	0	0	4	23	
3109	20	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lane	Equity	Charlotte and Huntersville	State	5	4	0	4	0	0	5	1	0	0	3	22	
3109	21	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) New (4) Median, Bike Lanes	Equity	Charlotte and Matthews	State	5	3	5	3	0	0	1	2	0	0	3	22	
3109	22	No	R-2558R-3329	Monroe Connector Bypass (US 74)	4-lane, median divided	Expressway (6 Lanes + HOV or Bypass)	Equity	Charlotte and Matthews	State	5	4	1	4	1	3	0	1	0	0	4	22	
3109	23	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lanes (some new align)	Equity	Union County	State	1	3	0	4	0	0	4	1	0	0	5	4	22
3109	24	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median	Equity	Cornelius and Huntersville	State	5	3	4	4	-1	0	3	1	0	0	3	22	
3109	25	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (upgraded 4-lane), Bike Lanes, Sidewalks	Equity	Union County	State	5	3	0	4	0	0	4	1	0	2	3	22	
3109	26	No	R-2558R-3329	Monroe Connector Bypass (US 74)	4-lane, divided	Widening (6) Median, Bike Lanes, Sidewalks	Equity	Union County	State	5	2	3	4	0	0	4	1	0	0	3	22	
3109	27	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Median, Bike Lanes	Equity	Charlotte	State	4	4	0	4	0	0	4	3	0	0	3	22	
3109	28	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Median, Bike Lanes	Equity	Charlotte	State	4	3	0	4	0	0	4	3	0	0	3	22	
3109	29	No	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Median, Bike Lanes	Equity	Charlotte	State	5	4	0	4	0	0	4	3	0	0	3	21	
3109	30	No	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Median, Bike Lanes	Equity	Huntersville	State	4	3	5	4	-2	0	3	2	0	0	2	21	
3109	31	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lanes	Equity	Union County	State	4	3	0	4	0	0	4	1	0	1	3	21	
3109	32	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, wood	Equity	Huntersville	State	5	3	3	5	-1	0	3	1	0	0	3	21	
3109	33	No	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (2) (4 FF)	Local	Huntersville	Local	3	3	5	4	-1	0	3	1	0	0	3	21	
3109	34	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	2-lane, undivided, bike lanes	Local	Charlotte	Local	3	3	4	5	0	0	3	1	0	0	2	21	
3109	35	No	R-2558R-3329	Monroe Connector Bypass (US 74)	New Road new alignment	Railroad Overpass	Local	Huntersville	Local	3	4	0	4	1	0	2	1	0	0	2	21	
3109	36	No	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Median, Bike Lanes	Equity	Charlotte	State	3	4	0	4	0	0	4	2	0	0	3	20	
3109	37	No	R-2558R-3329	Monroe Connector Bypass (US 74)	4-lane, divided	Widening (6) Median, Bike Lanes	Equity	Charlotte	State	5	2	0	5	0	0	4	0	0	0	3	20	
3109	38	No	R-2558R-3329	Monroe Connector Bypass (US 74)	4-lane road	Widening (6)	Equity	Charlotte	State	5	2	0	2	1	0	4	0	0	4	2	20	
3109	39	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lanes	Equity	Cornelius and Huntersville	State	5	3	3	4	0	0	2	1	0	0	2	20	
3109	40	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lanes	Equity	Huntersville	State	3	3	0	3	0	0	3	1	1	0	0	3	20
3109	41	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Median, Bike Lanes	Equity	Charlotte	State	3	4	0	4	0	0	3	1	0	0	3	20	
3109	42	No	R-2558R-3329	Monroe Connector Bypass (US 74)	4-lane, median divided	Widening (4-6) Median	Equity	Charlotte	State	4	3	2	4	0	0	3	1	0	0	4	20	
3109	43	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (2), Bike Lanes	Equity	Huntersville	State	4	2	3	4	-1	0	3	1	0	0	3	20	
3109	44	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (3) Bike Lanes	Local	Cornelius	Local	3	2	3	4	-1	0	4	3	0	0	2	20	
3109	45	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lane	Equity	Huntersville	State	3	3	0	3	0	0	3	1	0	0	2	20	
3109	46	No	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Expressway (4) Interchange w/ US 29/74	Equity	Charlotte	State	5	3	1	0	1	0	4	1	-1	5	0	19	
3109	47	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median	Equity	Davidson and Huntersville	State	5	3	0	4	0	0	2	1	0	0	4	19	
3109	48	No	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Interchange	Equity	Charlotte	State	3	4	0	4	-1	0	3	0	-1	5	0	19	
3109	49	No	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Interchange	Equity	Charlotte	State	3	4	0	4	-1	0	3	0	-1	5	0	19	
3109	50	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lanes	Equity	Huntersville	State	5	3	3	4	0	0	3	1	0	1	2	19	
3109	51	No	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (2) Median, Bike Lane	Equity	Davidson	State	2	2	1	1	-1	0	5	3	0	0	3	19	
3109	52	No	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Median, Bike Lanes	Equity	Matthews and Union County	State	4	2	4	2	4	0	1	1	0	0	4	19	
3109	53	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lanes, Sidewalks	Equity	Union County	State	4	3	0	4	1	1	0	1	0	1	4	19	
3109	54	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (2) Median, Bike Lanes	Local	Charlotte	Local	3	4	3	4	-2	0	1	2	2	0	2	19	
3109	55	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	New Road (2) Widening, Bike Lanes	Local	Huntersville	Local	3	3	4	4	0	0	1	1	0	0	3	19	
3109	56	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (2) Median, Bike Lanes	Local	Charlotte and Matthews	Local	2	3	4	2	0	2	0	0	1	0	3	19	
3109	57	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (2) Median, Bike Lane	Equity	Huntersville	State	1	3	3	3	4	1	0	1	0	0	2	19	
3109	58	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lane	Equity	Huntersville	State	4	3	3	3	4	1	0	4	1	0	2	19	
3109	59	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (2) Median, Bike Lane	Equity	Huntersville	State	4	2	3	3	-1	0	3	1	0	2	3	19	
3109	60	Yes	R-2558R-3329	Monroe Connector Bypass (US 74)	n/a	New Road (4) Bike Lanes	Local	Charlotte	Local	2	3	2	4	0	0	3	2	0	0	3	19	
3109	61	No	R-2558R-3329	Monroe Connector Bypass (US 74)	2-lane, undivided	Widening (4) Median, Bike Lane	Equity	Union County	State	5	3	0										

MUMPO 2035 LRTP
Roadway Candidate Project List and Data (Table A-1)

Project ID	MOE Rank	Ranked in 2035 Plan?	TIP Number	Project	Project Links	Existing Lanes	Type	Funding Source	Sphere	System	Reduce Congestion	Improves Safety	Access to Local Businesses/Off	Supports Local Land Use & Improves Quality of Life	Impacts on the Environment	Improves Center City Character or Mainstay	Increases Accessibility to Employment Centers	Impacts on Quality	Supports Low Income and Minority Communities	Promotes Connectivity	Benefit/Cost	Total Score		
3150	62	No		Lowers Road	I-485 to Stevens Mill Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Mini Hill and	State	5	3	0	0	3	0	2	1	0	0	0	4	18	
3034	63	No		Bullwinkle Common Parkway	Amitlex Ln. to Williams Blvd Ln	2-lane, undivided	Widening (4), Bike Lanes	Equity	Charlotte	State	5	2	0	4	4	2	0	1	0	0	0	3	18	
3057	64	No	U-213	Charlotte Avenue	Church St. to Concord Avenue	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Charlotte	State	4	3	0	0	5	0	0	1	0	0	2	18		
3195	65	No	R-3802	Providence Road (NC 16)	Rea Road/F-4 to Cullhessen Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	4	3	1	1	5	0	1	1	0	0	0	3	18	
3246	66	No		Rocky River Road (Moores)	Rocky River Rd. to Eastern Circumferential	2-lane road	Widening (4), Bike Lanes	Local	Charlotte	Local	4	3	0	0	5	0	1	1	0	0	0	3	18	
3062	67	No		Church St. Extension	Huntersville-Concord Rd. to Ramoth Ch. Rd.	2-lane, undivided	Widening (2) New Road (2) (4F cross-section)	Local	Huntersville	Local	2	3	5	0	4	0	3	1	-2	0	0	0	18	
3334	68	No		Zion Ave. Extension/Improvement	Carwaha Ave. to South St. (Dorchester)	2-lane, undivided	Widening (2) New Road (2) (4F cross-section)	Local	Huntersville	Local	2	3	5	0	4	0	0	0	0	0	0	0	18	
3335	69	No		Zion Ave. Extension/Improvement	Mayes Rd. to Carwaha Ave.	2-lane, undivided	Widening (2) New Road (2) (4F cross-section)	Local	Concord	Local	2	3	5	0	4	0	0	0	0	0	0	3	18	
3145	70	No		Kerf Rd Drive/Independence Pointe Parkway	Crowpoint Exec. Dr. to Sun Newell Rd.	n/a	New Road (2), Median, Bike Lanes	Local	Charlotte	Local	2	0	5	0	4	0	0	2	0	0	0	3	18	
3210	71	No	U-3467C	Waldington Road (NC 84)	NC 84 Reclamation to Washaw-Indian Trail Rd.	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	1	3	0	2	5	0	0	1	0	0	2	4	18	
3153	72	No		Lowers Road	Mt. Airy to NC 51	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	5	3	2	3	3	1	3	1	0	0	2	4	18	
3299	81	No		Provision Boulevard Extension	Shiloh Church Rd. to N. Tryon St. (US 29)	2-lane, undivided	New Road (2), Bike Lanes	Local	Charlotte	Local	5	3	0	0	3	1	2	0	0	0	0	3	18	
3125	73	Yes		Lowers Road	NC 51 to Bains School Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	5	3	2	2	5	0	3	1	0	0	0	3	18	
3152	75	No		Lowers Road	NC 51 to Bains School Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	5	3	2	2	5	0	3	1	0	0	0	3	18	
3179	76	No		Mount Holy-Huntersville Road	Huntington Rd. to Alexander Rd.	2-lane, undivided	Widening (4) Median, Wide Outside Lanes	Equity	Huntersville	State	2	3	0	0	3	1	0	5	1	0	0	3	18	
3182	77	No		Mount Holy-Huntersville Rd.	Mt. Holy-Huntersville Rd./NC 16	n/a	Interchange	Equity	Charlotte	State	4	3	0	0	4	0	0	3	0	0	0	4	18	
3031	78	No		Bailey Rd.	NC 115 to Barnhart Rd.	2-lane, undivided	Widening (3), New Road, Bike Lanes	Equity	Concord and Davidson	State	3	2	1	4	4	-1	0	2	3	0	0	4	18	
3058	79	No		Charlotte Avenue	Seymour St. to Dickerson Blvd.	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	2	3	0	0	2	1	4	0	0	1	0	4	18	
3243	80	No		Rocky River Road (Moores)	Old Charlotte Hwy. to US 74	2-lane, undivided	Widening (4), Median, Sidewalks	Equity	Union County	State	1	3	0	0	2	1	4	0	0	2	4	18		
3299	81	No		Waldington Road (NC 84)	Washaw-Indian Trail Road to Lupton Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	1	3	0	0	2	1	4	0	0	2	4	18		
3063	82	No		Church St. Extension	Huntington Rd. to Vermont Drive Ext.	n/a	New Road (2) (4F cross-section)	Local	Huntersville	Local	4	3	3	4	0	0	2	1	0	0	0	4	18	
3083	83	No		Eastfield Road	Alexander Rd. to Prosperity Church Rd.	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Huntersville	State	4	3	0	0	3	1	0	2	1	0	0	4	18	
3088	84	No		Faith Church Road Extension	US 74 to Monroe Road	n/a	New Road (2), (2F, 4' paved shoulders)	Equity	Union County	State	3	2	1	1	3	0	0	4	0	0	2	3	18	
3123	85	No		L-77 (Rocky River) (North)	W. Fifth St. to L-277 (Brookshire Trwy.)	2-lane, undivided	Southbound/HOV Lane	Equity	Charlotte	State	2	5	2	0	5	0	1	-1	0	0	0	4	17	
3124	86	No		Sugar Creek Road Extension	Great Separation	At-grade intersection	New Interchange	Local	Charlotte	State	4	4	1	1	5	0	4	0	0	0	0	2	17	
3153	87	Yes		L-77 (Rocky River) (South)	L-77 (Rocky River) (South)	n/a	New Interchange	Local	Charlotte	State	4	4	1	1	5	0	4	0	0	0	0	2	17	
3077	89	Yes		Eastern Circumferential Road	Griffin Street Interchange	simple diamond interchange	Interchange Modification	Equity	Davidson	State	5	4	0	0	3	-1	0	3	1	0	0	2	17	
3122	90	Yes		Eastern Circumferential Road	NC 49 to Rocky River	n/a	New Road (4), Bike Lanes	Equity	Charlotte	Local	5	3	0	0	4	-2	0	2	0	0	0	3	17	
3005	91	Yes	R-2248E	L-485	NC 115 to I-85 North	Ramps	Modified Interchange	Equity	Huntersville	State	5	3	1	1	4	-1	0	3	0	0	0	2	17	
3182	92	Yes		L-77 North	I-485 to NC 73 (exit 25)	4-lane, median divided	New Freeway (6)	Loop	Huntersville	State	5	2	2	2	3	-2	0	4	1	-1	0	3	17	
3190	93	Yes		Mount Holy-Huntersville Road	US 21 to Huntington Rd.	2-lane, undivided	Widening (3), Bike Lanes	Equity	Huntersville	State	4	1	0	0	3	0	0	5	1	0	0	3	17	
3051	94	No		Carolina Phase Parkway Extension/Dorman Road	US 21 to Barnhart Rd.	2-lane, undivided	New Road (4) in 4 Ln ROW, Bike Lanes	Equity	Union County	State	2	3	0	0	4	1	0	0	1	0	0	5	17	
3065	95	No		Church St. Extension	Vermont Drive Ext. to Huntersville-Concord Rd.	2-lane, undivided	New Road (2), Widening (4) Bike Lanes	Equity	Union County	State	2	3	5	0	4	0	0	2	1	-2	0	2	17	
3154	96	No		Lowers Road	Albemarle Rd. to McAuliffe Creek	2-lane road	Widening (4), Bike Lanes	Local	Charlotte	Local	5	3	1	2	2	0	0	1	0	0	0	3	17	
3299	97	No		Vermont Drive West	US 21 to Mt. Holy-Huntersville Rd.	n/a	New Road (2), Bike Lanes	Equity	Huntersville	State	2	2	0	0	3	-1	0	5	3	0	1	2	17	
3160	98	No		Mallard Creek Road	Prosperity Church Rd. to I-485	2-lane, undivided	Widening (4), Bike Lanes	Equity	Charlotte	State	4	3	1	2	2	0	2	0	0	0	0	4	17	
3245	100	No		Rocky River Road (Moores)	Old Charlotte Hwy. to US 74	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	4	3	1	2	2	0	2	0	0	0	0	4	17	
3211	101	No	U-3467AB	Rea Road Extension (NC 84 Reclamation)	Eastern Circumferential to I-485	2-lane road	New Road (4), Bike Lanes	Local	Charlotte	Local	4	3	0	0	4	1	1	1	0	0	0	3	17	
3289	102	Yes		Statesville Road (US 21)	NC 16 to NC 64	n/a	New Road (2) in 4 Lane ROW, Median, Bike Lanes	Equity	Union County	State	3	3	0	0	4	-1	0	1	2	0	1	4	17	
3143	103	No		Independence Pointe Parkway	Northwest Center Court to Boat House Court	2-lane, undivided	Widening (4) Median, w/d	Local	Concord and Huntersville	State	3	3	0	0	4	0	4	1	0	0	0	3	17	
3165	104	No	U-4713B	McKee Road Extension	Mathews-Hill Hill Road to Campus Ridge Road	n/a	New Road (2), Median, Bike Lanes (4-lane bike lanes)	Equity	Mathews	State	3	0	4	4	4	-2	0	2	1	0	0	3	17	
3079	106	No		Eastern Circumferential Road	John Street to Campus Ridge Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Mathews	State	1	4	3	0	3	0	0	1	0	0	1	4	17	
3033	107	No		Bailey Road	US 74 to Old Charlotte Hwy.	n/a	Widening (4), Median, Bike Lanes	Equity	Union County	State	4	3	1	0	3	1	0	1	0	0	1	3	17	
3162	108	No		Mathews-Indian Trail Road	Prosperity Church Rd. to I-485	2-lane, undivided	New Road (4), Bike Lanes	Equity	Charlotte	Local	3	2	1	2	1	0	2	0	0	0	0	4	17	
3007	109	No		L-77 HOV Project (North)	Campus Ridge Road to Indian Trail Road	2-lane, undivided	Widening (4) Median, Bike Lanes	Equity	Union County	State	1	3	1	1	4	2	0	3	0	0	0	3	17	
3102	110	No	U-3850	Hook's Road Extension	W. Fifth St. to I-85	8-lane, divided	Northbound/HOV Lane	Equity	Charlotte	State	5	4	2	0	0	-1	5	0	-2	0	0	2	16	
3107	111	No		Harris Boulevard	Interchange (WB Bridge over I-77)	2-lane road	Add 3rd WB lane on I-277	Equity	Charlotte	State	5	4	0	0	3	0	0	0	0	0	0	4	16	
3108	112	Yes	R-4902	Harris Boulevard	Prosperity Church Rd. to Sugar Creek Rd.	n/a	New Road (4), Bike Lanes	Local	Charlotte	Local	5	3	0	0	3	-1	0	2	0	0	0	4	16	
3304	113	No		Harris Boulevard (NC 24)	NC 115 to Union Rd. (US 521)	4-lane, divided	Widening (6) sidewalk	Equity	Charlotte	State	5	3	0	0	1	0	3	2	1	0	0	4	16	
3277	114	No		Sugar Creek Road	NC 51 to Stallings Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Mathews and Union County	State	5	3	0	0	3	0	0	1	1	0	0	3	16	
3052	116	No		Crowling-Boyle and Extension	Griffin St. to NC 115/Sugar Creek Rd. Connector	2-lane road	Widening (4), Bike Lanes	Local	Charlotte	Local	5	3	2	2	2	0	0	1	-1	0	0	1	16	
3151	117	No		Sum Wilson Road Extension	South Tryon St. to Steele Creek Road	2-lane road	New Road & Widening (4) Bike Lanes	Local	Charlotte	Local	3	3	0	0	3	0	5	2	0	0	2	0	16	
3230	119	No		Potter Road	Moore's Chapel Rd. to Reimolde Dr.	2-lane, undivided	Widening (4), Median, Bike Lanes	Local	Charlotte	Local	4	2	0	0	4	-1	0	2	0	0	0	4	16	
					Sum Wilson Road Extension	Sum Wilson Road to Mill Grove Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Local	Charlotte	Local	4	2	0	0	4	-1	0	2	0	0	0	2	16
					Potter Road	NC 84 to Wesley Chapel-Stratus Road	2-lane, undivided	Widening (3), Two-Way Center Turn Lane, Bike Lanes	Equity	Union County	State	4	3	0	0	3	1	0	1	0	0	0	4	16

MUMPO 2035 L RTP
Roadway Candidate Project List and Data (Table A-1)

Project ID	Project	Project Links	Existing Lanes	Type	Funding Source	Sphere	System	Reduce Congestion	Improves Safety	Access Transit	Supports Local Land Use & Improves Quality of Life	Impacts on the Environment	Improves Center City Character or Mileage	Increases Accessibility to Employment Centers	Impacts on Quality	Supports Low Income and Minority Communities	Prevents Fragmented Connectivity	Benefit/Cost	Total Score
3131	1-77 North	NC 73 (excl 29) to Griffith St (excl 30)	4-lane, median divided	Widening (6)	Local	Corneilus, Huntersville	State	4	2	0	4	0	0	3	0	0	0	3	16
3132	Westmead Road	US 21 to W. Canawha Ave	2-lane, undivided	Widening (4), Median, Bike Lanes	Local	Corneilus	State	3	3	0	4	0	0	4	1	0	0	1	16
3133	Alibi Road Extension	Chesapeake Dr. to McMiller Dr.	n/a	Widening (2), Median, Bike Lanes	Local	Charlotte	Local	2	3	0	2	0	0	3	0	0	0	4	16
3134	Akonkremas Road	Mt. Holly-Huntersville Rd. to NC 115	2-lane, undivided	Widening (4), Median, Bike Lane	Equity	Huntersville	State	1	3	2	3	0	0	4	1	0	0	2	16
3135	Bryant Farms Road	Community House Road to Rea Road	n/a	New Road (4), Widened (4), Bike Lanes	Local	Charlotte	State	3	3	1	3	0	0	2	0	0	0	3	16
3136	Old Savales Rd. (NC 115)	Harris Blvd. to 4485	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Charlotte	State	3	3	0	3	0	2	0	1	0	0	2	16
3137	Wesley Chapel Steves Road	Old Charlotte Hwy. to Porter Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	3	3	0	3	0	2	0	1	0	0	3	16
3138	Belmont Road	Sunset Rd. to Lakeview Rd.	2-lane road	Widening (2), Bike Lanes	Local	Mint Hill	Local	1	3	0	2	0	2	0	1	3	0	3	16
3139	Fairview Road (NC 218/Mint Hill Union County)	Brier Road to US 601	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	5	3	0	0	-1	0	0	1	0	0	3	15
3140	Stanesville Road	Starrs Rd. to Keith Dr.	2-lane road	Widening (4), Median, Bike Lanes	Local	Charlotte	Local	3	0	0	3	0	3	0	1	-1	0	4	15
3141	I-485	Johnson Rd. (US 521) to Providence Rd. (NC 10)	4-lane, median divided	Widening (6)	Loop	Charlotte	State	5	2	0	2	0	2	0	0	0	0	4	15
3142	Idlewild Road	Drifter Dr. to Margaret Wallace Rd.	2-lane road	Widening (2), Bike Lanes	Local	Charlotte	Local	5	3	0	2	1	0	0	1	0	0	3	15
3143	NC 51 (Pineville-Matthews Road)	Sandis Road to Monroe Road	4-lane, undivided	Widening (6), Median, Wide Outside	Equity	Matthews	State	5	3	0	2	1	0	0	0	0	0	3	15
3144	I-485	NC 16 to Providence Road to US 74	4-lane, median divided	Widening (6)	Loop	Charlotte and Matthews	State	5	2	0	2	0	2	0	1	0	0	3	15
3145	North Mills St. (Wigate)	US 74 to Monroe Bypass	2-lane, undivided	Widening (4), Parking, wide sidewalks	Equity	Union County	State	1	2	0	5	1	0	1	1	0	0	3	15
3146	Concord Highway (US 601)	US 74 (Barnwell Blvd.) to Merwin Bypass	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	4	3	0	3	-1	4	0	1	0	0	1	15
3147	Sheets Creek Road (NC 160)	I-485 to York Rd. (NC 49)	2-lane, undivided	Widening (4), Bike Lanes	Equity	Charlotte	State	4	3	0	2	-2	4	0	0	0	0	3	15
3148	McKee Road	Tilley Morris Road to Weddington Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Local	Matthews	State	4	3	1	3	1	0	0	1	0	0	2	15
3149	Mount Holly Road (NC 27)	Phyne Rd. to Belmside Dr.	2-lane road	Widening (4), Median, Bike Lanes	Equity	Charlotte	State	4	3	0	3	0	1	0	0	0	0	3	15
3150	NC 73 West	Canawha River to Vance Rd. Ext.	2-lane, undivided	Widening (4-6), Median	Equity	Huntersville	State	4	3	0	3	-1	0	2	1	0	0	3	15
3151	Tilley Morris Road	McKee Road to Matthews-Wedington Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	4	3	0	3	0	0	1	1	0	0	3	15
3152	S. Tryon Street (NC 49)	I-77 to Yorkmont Rd.	4-lane road	Widening (4), Bike Lanes	Equity	Union County	State	4	2	0	2	0	2	0	0	0	0	3	15
3153	Secrest Ave. Extension	Secrest Ave. to Office Bypass Road	n/a	New Road (4), Median, Bike Lanes	Equity	Union County	State	3	3	1	4	-3	0	2	-1	2	0	3	15
3154	Providence Road (NC 16)	Cuthbertson Road to Watahah Bypass	2-lane, undivided	New Road (4), Median, Bike Lanes	Equity	Union County	State	2	3	1	4	0	0	1	1	0	0	3	15
3155	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4), Median, Bike Lanes	Local	Charlotte	Local	2	3	0	2	0	0	0	0	0	0	2	15
3156	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4), Median, Bike Lanes	Local	Charlotte	Local	2	3	0	2	0	0	0	0	0	0	2	15
3157	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	New Road (2), Bike Lanes	Local	Charlotte	Local	1	3	4	2	-2	2	0	2	0	0	3	15
3158	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, road	Equity	Charlotte	State	1	3	0	4	0	3	1	0	0	0	3	15
3159	Belmont Road	Belmont Rd. to I-77	2-lane road	Widening (2), Bike Lanes	Equity	Charlotte	Local	0	4	0	4	0	0	3	1	0	0	3	15
3160	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4), Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3161	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3162	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3163	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3164	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3165	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3166	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3167	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3168	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3169	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3170	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3171	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3172	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3173	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3174	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3175	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3176	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3177	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3178	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3179	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3180	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3181	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3182	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3183	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3184	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3185	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3186	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3187	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3188	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3189	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3190	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3191	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3192	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3193	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3194	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3195	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3196	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3197	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks	Equity	Charlotte	Local	0	4	0	4	0	0	2	1	0	0	3	15
3198	Belmont Road	Belmont Rd. to I-77	2-lane, undivided	Widening (4) Median, Sidewalks															

MUMPO 2035 L RTP
Roadway Candidate Project List and Data (Table A-1)

Project ID	2035 MPO Rank	Ranked in 2035 Plan?	Project	Project Links	Existing Lanes	Type	Funding Source	Sphere	System	Reduce Congestion	Improves Safety	Access to Local Facilities	Supports Local Land Use	Impacts on the Environment	Improves Center City Character or Mileage	Increases Accessibility to Employment Centers	Impacts on Income and Minority Communities	Promotes Connectivity	Benefit/Cost	Total Score	
3018	184	No	Albemarle Road/Harris Boulevard (NC 24-27)	Convert to Interchange	n/a	New Interchange	Equity	Charlotte	State	5	4	1	-2	1	1	2	0	0	0	1	13
3135	185	Yes	I-485 North I-485 North	Interchange	n/a	New Interchange	Loop	Charlotte	State	5	4	0	0	0	0	2	0	0	0	3	13
3139	186	No	I-77 South	I-77 (B&E) Hwy to Southbound Road	4-lanes, divided	Widening (D) & HOV	Equity	Charlotte	State	5	4	0	0	0	0	2	0	0	0	3	13
3098	187	Yes	Midland Road	Phoey Green Rd to RIVER DR.	2-lane road	Widening (D), Bike Lanes	Local	Charlotte	State	3	3	0	0	-1	5	0	0	0	0	3	13
2302	188	No	Phonix-Matthews Road (NC 51)	I-485 to Rm Rd.	4-lane, undivided	Widening (D), Bike Lanes	Equity	Charlotte and Matthews	State	5	1	0	0	2	0	3	1	0	0	2	13
3341	189	No	McKee Road	Weddington Rd. to Pleasant Plains Rd.	2-lane, undivided	Widening (S)	Equity	Charlotte and Matthews	State	4	3	0	0	0	0	1	1	0	0	2	13
3308	190	No	Wachon Parkway	NC 75 E. of Town & NC 75 W. of Town	2-lane, undivided	New Road (4), Median, Bike Lanes, Widening (S) & HOV	Equity	Union County	State	3	2	1	0	0	2	2	0	0	0	2	13
3130	191	No	I-77 South	I-485 to South Carolina Line	6-lanes, divided	Widening (S) & HOV	Equity	Charlotte	State	2	3	0	0	0	4	0	1	0	0	3	13
3070	192	No	Davison-Concord Road	Bailey Road to NC 73	2-lane, undivided	Widening (D), Median, Bike Lanes	Equity	Davison	State	1	4	0	3	-1	0	2	1	0	0	4	13
3302	193	No	Harris Boulevard (NC 24)	Ramley Rd. to I-485	2-lane, undivided	Widening (D), Bike Lanes	Equity	Charlotte	State	1	3	0	0	0	0	2	1	0	0	4	13
3286	194	No	Tyvola Road	S. Tryon St. to I-77	5- and 6- lanes	Add median, bike lanes, and sidewalks	Local	Charlotte	Local	1	3	0	0	0	0	2	1	0	0	4	13
3318	195	No	Wilgore-Mt. Hill Road	NC 51 to Albemarle Road (NC 24-27)	2-lane, undivided	Widening (S)	Equity	Mt. Hill	State	1	2	0	0	1	0	2	1	0	0	2	13
3332	196	No	Harrisburg Road	Shallage Road to Indian Trail Road	2-lane, undivided	Widening (S)	Equity	Charlotte	State	0	3	0	0	0	0	3	0	0	0	3	13
3103	197	No	Hooks Road Extension	Eastern Circumferential to I-485	2-lane, undivided	Widening (D), Bike Lanes	Equity	Charlotte	State	3	3	0	0	0	0	2	0	0	0	3	13
3105	198	No	Westmont Road	Sugar Creek Rd. to Old Statesville Rd. (NC 115)	n/a	New Road (4), Bike Lanes	Local	Charlotte	Local	3	3	2	0	-1	0	0	2	0	0	2	13
3106	200	Yes	Westmont Road	US 71 to Washon-Peets Rd.	3-lane, undivided	Widening (4), Median, Bike Lanes	Local	Charlotte	Local	3	3	0	0	0	0	0	0	0	0	2	13
3124	207	No	Adfrey Rd Road Extension	Providence Rd (NC 16) to Tilly Morris Rd.	n/a	New Road (4), Median, Bike Lanes	Local	Charlotte	Local	0	0	0	0	0	2	0	0	0	0	2	13
3074	202	No	Eastern Circumferential Road	Lawyers Road to NC 24-27	n/a	New Road (4), Median, Bike Lanes	Equity	Charlotte	Local	2	3	1	0	-1	0	2	1	0	0	3	13
3098	203	No	Grier Road	W.T. Harris Blvd. to Rocky River Rd.	2-lane road	Widening (D), Bike Lanes	Local	Charlotte	Local	1	3	0	0	0	0	3	1	0	0	3	13
3241	204	No	Kedge Road	Prosperity Church Rd. to Brent Rd.	2-lane road	Widening (D), Bike Lanes	Local	Charlotte	Local	1	3	0	0	0	0	3	1	0	0	3	13
3253	205	No	Seventh Street	Charlottesville Av. to Lander Av.	2-lane, undivided	Widening (D) for lanes	Local	Charlotte	Local	2	2	0	0	0	0	0	0	0	0	2	12
3128	206	No	I-77 South/Nations Ford Road	Nations Ford Rd. Interchange	simple diamond interchange	Upgrade Interchange	Equity	Charlotte	State	3	3	0	0	0	5	0	0	0	0	3	12
3124	207	No	I-77 HOV Project (South)	I-77 (B&E) Hwy to W. Fourth St.	8-lane, divided	Add HOV	Equity	Charlotte	State	2	3	2	0	-1	0	2	0	0	0	1	12
3301	208	No	Harris Boulevard	Albemarle Rd. to I-485 Rd.	4-lane, undivided	Widening (D), Bike Accommodations	Local	Charlotte	Local	4	3	0	0	0	0	2	0	0	0	2	12
3074	202	No	Eastern Circumferential Road	Mt. Holly-Huntersville Road to NC 73	2-lane, undivided	Widening (D), Bike Lanes	Equity	Huntersville	State	4	3	0	0	0	0	2	0	0	0	3	12
3128	206	No	Diase River Road/Old-Dove Connector	Diase River Road, to Old-Dove Rd.	n/a	New Road (4), Bike Lanes	Local	Huntersville	Local	2	3	0	0	-4	0	2	0	0	1	12	
3082	210	No	Esfield Road	Prosperity Church Rd. to Chatham County Line	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Huntersville	State	3	3	0	0	0	0	0	0	0	0	2	12
3238	212	No	Idlewild Road	Colony Rd. to Phonix-Matthews Rd. (NC 51)	2-lane road	Widening (4), Bike Lanes	Local	Charlotte	Local	3	3	0	0	-2	1	0	0	0	0	3	12
3138	213	No	Idlewild Road	Margaret Wallace Road to NC 51	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Charlotte	State	2	3	0	0	0	0	1	0	0	0	3	12
3176	214	No	Mount Holly-Huntersville Road	Mount Holly Rd. to Colwick Dr.	2-lane road	Widening (4), Bike Lanes	Local	Charlotte	Local	2	3	0	0	0	0	0	0	0	0	2	12
3181	215	No	Mount Holly-Huntersville Road	Beaties Ford Rd. to Alexander Rd.	2-lane, undivided	Widening (D), Bike Lanes	Equity	Charlotte	State	2	3	0	0	0	0	0	0	0	0	2	12
3269	216	No	Stevens Road (US 1)	Sunset Rd. to Harris Blvd.	2-lane, undivided	Widening (D) Bike Lanes	Equity	Charlotte	State	2	3	0	0	0	2	0	0	0	0	3	12
3049	217	No	Bryant Farms Road	Rea Road to Adfrey, Kell	2-lane road	New Road (4), Bike Lanes	Local	Charlotte	Local	2	2	1	0	-1	0	0	0	0	0	3	12
3059	218	No	Chestnut Lane	Mathews-Wedington Rd. to Old Monroe Rd.	2-lane road	New Road (4), Widening (4), Bike Lanes	Equity	Union County	State	1	3	0	0	0	0	1	0	0	0	3	12
3212	219	No	Nevin Road Ext.	Black Walnut Ln. to Old Dr.	n/a	New road (4), Bike Lanes	Local	Charlotte	Local	1	3	0	0	-1	0	2	0	0	0	2	12
3266	220	No	Shallage Road	US 74 to County Line	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	1	3	0	0	0	2	2	0	0	0	3	12
3187	221	No	Nations Ford Road	Tyvola Rd. to I-77	2-lane road	Widening (D), Bike Lanes	Local	Charlotte	Local	1	2	0	0	0	3	0	1	-1	0	2	12
3188	222	No	Nations Ford Road	Arrowood Rd. to Heshorn St.	2-lane road	Widening (D), Bike Lanes	Local	Charlotte	Local	1	2	0	0	0	3	0	0	0	0	2	12
3236	223	No	Facid Avenue Extension	E. Marchand St. to Stenswell St.	n/a	New Road (2), Bike Lanes	Local	Charlotte	Local	1	1	0	0	0	3	0	0	0	0	2	12
3043	224	No	Broadshire Boulevard (NC 16)	Huber Dr. to I-485	4-lane, median divided	Widening (S) for Johnson Rd.	Equity	Charlotte and Matthews	State	3	2	0	0	1	3	0	0	0	0	2	11
3119	225	Yes	Monroe Road	I-77 to Johnson Rd. (US 521)	6-lane, median divided	Widening (S) for Johnson Rd.	Loop	Charlotte	State	5	2	0	0	0	0	2	0	0	0	2	11
3172	226	No	Providence Road (NC 16)	Sharon Amity Rd. to Rama Rd.	4-lane, undivided	Widening (D), Bike Lanes	Local	Charlotte	Local	4	3	0	0	0	0	0	0	0	0	2	11
3235	227	No	Shopton Road West Extension	Quers Rd. to Brax Creek	4-lane, undivided	Widening (D), Bike Lanes	Local	Charlotte	Local	4	2	0	0	0	2	0	0	0	0	2	11
3259	228	No	Shopton Road West Extension	South Tryon St. to Fox Rd.	n/a	New Road (2), Bike Lanes	Local	Charlotte	Local	4	2	0	0	0	0	0	0	0	0	2	11
3004	229	No	Freedom Drive / Mt. Holly Road (NC 27)	Fred D. Alexander Blvd. to Tom Suller Rd.	2-lane, undivided	Widening (4) Road (4), Bike Lanes	Equity	Charlotte	State	3	3	0	0	0	2	0	0	0	0	2	11
3166	231	No	McKee Road Extension	York Road (NC 49) to South Carolina Line	2-lane, undivided	Widening (D) Bike Lanes	Equity	Charlotte	State	3	3	0	0	0	0	2	0	0	0	2	11
3177	232	No	Mount Holly-Huntersville Road	Pleasant Plains Road to John Street	n/a	New (4), Median, Bike Lanes	Equity	Charlotte	State	3	3	0	0	-1	0	2	1	0	0	3	11
3179	233	No	Sharon Amity Road	Oxide Rd. to Beaties Ford Rd.	2-lane road	Widening (D), Bike Lanes	Local	Charlotte	State	2	3	0	0	0	0	0	0	0	0	2	11
3177	233	No	Sharon Amity Road	Oxide Rd. to Beaties Ford Rd.	2-lane, undivided	4-lane, median divided, bike lanes	Equity	Charlotte	State	2	3	0	0	0	0	2	0	0	0	2	11
3052	234	No	Freedom Drive (NC 27)	Teddlie Rd. to E. Rocky River	2-lane, undivided	Widening (D), Bike Lanes	Local	Charlotte	State	1	3	0	0	-1	3	0	0	0	0	2	11
3252	235	No	Shops Ch. Rd. Unionville-Indian Trail Rd.	Sherest Shorter Road to US 74	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	1	3	0	0	0	0	1	1	0	0	3	11
3273	236	No	Sugar Creek Road	US 74 to I-485 Rd.	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	1	3	0	0	0	0	2	1	0	0	3	11
3278	237	No	Sugar Creek Road	NC 115-Sugar Creek Rd. Connector to Harris Blvd.	2-lane road	Widening (4), Bike Lanes	Local	Charlotte	Local	1	3	1	0	0	0	2	1	-1	0	3	11
3095	238	No	Garrison Road	Diase River Road N. to Diase River Road S.	2-lane, undivided	Widening (2), New Road (2), Bike Lanes	Local	Charlotte	Local	1	2	0	0	0	0	2	2	0	0	3	11
3186	239	No	Nations Ford Road	Tryon St. to Tyvola Rd.	2-lane road	Widening (4), Bike Lanes	Local	Charlotte	Local	1	2	0	0	0	3	0	1	-1	0	2	11
3220	240	No	Old Concord Road	W.T. Harris Blvd. East to University City Blvd.	2-lane road	Widening (4), Bike Lanes	Local	Charlotte	Local	1	2	0	0	0	0	0	1	0	0	3	11
3284	241	No	Tyvola Road	West Blvd. to Yorktown Rd.	2-lane road	Widening (D), Bike Lanes	Local	Charlotte	Local	0	3	0	0	0	2	0	0	0	0	2	11
3284	241	No	Tyvola Road	West Blvd. to Yorktown Rd.	2-lane road	Widening (D), Bike Lanes	Local	Charlotte	Local	0	3	0	0	0	2	0	0	0	0	2	11
3224	242	No	Shopton Road West Extension	Shopton Rd. to Fox Rd.	4-lane road	Widening (S) for northbound lane	Local	Charlotte	Local	0	3	0	0	0	0	0	0	0	0	2	10
3224	243	No	Shopton Road West Extension	Shopton Rd. to Fox Rd.	4-lane road	Widening (S) for northbound lane	Local	Charlotte	Local	0	3	0	0	0	0	0	0	0	0	2	10
3295	244	No	Vance Rd. Extension	Shopton Rd. to Fox Rd.	n/a	New Road (4), Median, Bike Lanes	Equity	Huntersville	State	4	2	0	0	0	4	-2	0	0	0	2	10
3266	245	No	Sharon Amity Road	Providence Rd. to Water Oak Rd.	4-lane, undivided	Widening (4), Median, Bike Lanes	Local	Charlotte	Local	4	3	0	0	0	0	2	0	0	0	3	10
3261	246	No	South Boulevard	Sharon Rd. West to Matthews Ave.	4-lane, undivided	Widening (4), Median, Bike Lanes	Local	Charlotte	Local	4	3	0	0	0	0	1	0	0	0	3	10</

MUMPO 2035 L RTP
Roadway Candidate Project List and Data (Table A-1)

Project ID	2035 MPO Rank	Ranked in 2035 Plan?	Project	Project Links	Existing Lanes	Type	Funding Source	Sphere	System	Reduce Congestion	Improves Safety	Access to Local Facilities/Prop. Off.	Impacts on the Surrounding Environment	Improves Center City Character or Mileage	Increases Accessibility to Outlying Employment Centers	Impacts on Air Quality	Supports Low Income and Minority Communities	Promotes Connectivity	Benefit/Cost	Total Score
3029	251	No	Adams Chapel Rd.	Eastfield Rd. to Ramoth Church Rd.	2-lane, undivided	Widening (2), New Location, Bike Lane	Equity	Huntersville	State	3	3	0	-3	0	0	2	0	0	2	10
3117	252	Yes	I-485	US 74 to Albemarle Road	4-lane, median divided	Widening (6)	Levy	Huntersville	State	3	2	0	0	0	1	0	0	0	2	10
3159	253	No	High Tech Parkway Extension	Winfield Creek Pkwy to Whitesford Rd.	n/a	New Road (2), Bike Lanes	Equity	Mint Hill	Local	3	3	0	-2	0	0	3	0	0	3	10
3158	254	No	Mt. Holly Rd. Extension	US 74 to Whitesford Rd.	n/a	New Road (2), Bike Lanes	Equity	Union County	Local	2	3	0	-2	0	0	0	0	0	3	10
3226	255	No	Pence Road Rehabilitation	Pence Rd. to Hartsburg Rd.	n/a	New Road (2), Bike Lanes	Equity	Charlotte	Local	2	2	0	-2	0	0	0	0	0	2	10
3206	256	No	Vance Rd. Extension	Gililand Rd. to NC 75	n/a	New Road (4), Median, Bike Lanes	Equity	Huntersville	State	2	3	0	0	0	0	-1	0	0	2	10
3139	257	No	Wilshire Blvd/Hilly Graham Pkwy (US 74)	Albemarle Rd. to Hartsburg Rd.	n/a	New Road (2), Bike Lanes	Equity	Charlotte	Local	2	3	0	-2	0	0	2	0	0	2	10
3320	258	No	Shannon Road ExL	NW Quadrant	n/a	Ramp & connection to Service Road	Equity	Charlotte	State	2	3	0	-1	0	1	0	0	2	3	10
3074	259	No	Bluff Road Extension	NC 157 to Ramoth Church Rd.	n/a	New (2) Median, Bike Lanes	Equity	Huntersville	State	2	0	0	-1	0	0	2	0	0	3	10
3041	260	No	Bluff Road Extension	Albemarle Rd. to Rocky River Church Rd.	n/a	New Road (2), Bike Lanes	Equity	Charlotte	Local	2	0	0	0	0	1	0	0	0	3	10
3292	261	No	Concord Highway (US 601)	Ridge Road to Lawyers Road	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	1	2	0	0	1	0	1	0	0	2	10
3156	262	No	Lebanon Road	Eastern Circumferential to NC 51	2-lane, undivided	Widening (2), Bike Lanes, Curb & Gutter	Equity	Mint Hill	Local	1	2	0	0	0	0	1	0	0	2	10
3043	263	No	Bryant Street	Fifth St. to 11th St.	2-3 lanes (one way)	Convert to two-way traffic	Local	Charlotte	Local	1	0	0	1	3	0	0	0	0	2	10
3050	264	No	Caldwell Street	Fifth St. to 11th St.	3-4 lanes (one way)	Convert to two-way traffic	Local	Charlotte	Local	1	0	0	3	1	0	0	0	0	2	10
3053	265	No	Cornwold Boulevard Extension	Shopton Road West to Steele Creek Road	2-lane road	New Road & Widening (2), Bike Lanes	Local	Charlotte	Local	0	3	0	0	0	2	2	0	0	1	10
3090	266	No	Fifth Street Extension	McDowell St. to Kings Dr.	n/a	Extend lane from 5th St. ramp to Kings Dr.	Local	Charlotte	Local	0	1	3	-2	2	0	0	3	0	1	10
3252	267	No	South Boulevard	Troy Rd. to Ashfield Dr.	4-lane, undivided	Local	Local	Charlotte	Local	4	3	0	0	1	0	0	0	0	3	9
3114	268	No	I-277 Hill Street	Interchange	n/a	Reverse interchange	Equity	Charlotte	State	3	1	0	0	4	0	0	0	0	1	9
3134	269	No	I-85 / Billy Graham Parkway	Interchange	n/a	Convert to Urban Diamond	Equity	Charlotte	State	1	4	0	0	0	0	0	0	0	1	9
3168	270	No	Mission Hill Road Extension	Crosswinds Rd. to Lawyers Rd.	n/a	New Road (2), Bike Lanes	Equity	Charlotte	Local	3	2	0	-3	0	1	2	0	0	2	9
3216	271	No	Northeast Huntersville Minor Thoroughfare	Crosswinds Rd. to Davidson-Concord Rd.	n/a	New Road (2), Bike Lanes	Equity	Huntersville	State	2	0	0	0	0	2	1	0	0	2	9
3174	272	No	Mount Holly North Loop (NC 27)	Mt. Holly-Huntersville Rd. to Crawfords River Rd	n/a	New Road (4), Bike Lanes	Equity	Charlotte	State	1	3	0	-2	2	0	2	-1	0	2	9
3274	273	No	Stevens Mill Road	Little Rock Rd. to I-485	4-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	1	3	0	-2	0	2	1	0	0	2	9
3322	274	No	Wilkinson Boulevard (US 29/74)	Old Charlotte Hwy. to Wesley Chapel - Strouts Rd.	2-lane, undivided	Widening (upgrading) 2-lanes, Med., Bike Lanes, Sidewalks	Equity	Union County	State	1	1	0	-1	2	0	1	0	1	3	9
3247	275	No	Nations Ford Road	Westinghouse Blvd. to South Carolina Line	2-lane road	Widening (4), Bike Lanes	Equity	Charlotte and Pineville	State	0	3	0	0	0	0	1	0	0	2	9
3185	276	No	Verhoeff Drive	Old Verhoeff Drive to NC 115	2-lane, undivided	Widening (2) New Road (2) (4' cross-section), Bike Lane	Local	Huntersville	Local	0	1	0	1	1	1	1	0	0	2	9
3043	278	No	Brevard Street	Stonewall St. to Trade St.	3-4 lanes (one way)	Convert to two-way traffic	Local	Charlotte	Local	0	2	0	3	0	0	0	0	0	2	9
3125	279	No	I-277 North	I-277 to I-85	widened ex. 11' lanes to 12'	Widened SH to std. width	Equity	Charlotte	State	0	0	0	1	3	0	0	0	0	2	8
3260	280	No	South Boulevard	Woodlawn Rd. to Ivyhill Rd.	4-lane, undivided	Medlan	Local	Charlotte	Local	4	3	0	0	0	0	0	0	0	1	8
3258	281	No	Shiloh Road Ext.	F. Rocky River to Grey Rd.	2-lane, undivided	2-lane, bike accommodation	Equity	Davidson	State	0	2	0	0	0	0	0	0	0	1	8
3263	282	No	Mt. Holly Road	Rocky River to Hwy 29	n/a	New Road (2), Bike Lanes	Equity	Union County	State	3	3	0	0	0	0	0	0	0	1	8
3265	283	No	Monroe Station Loop	Stonewall St. to US 74 East	n/a	New Road (4), Median, Bike Lanes	Equity	Union County	State	3	3	0	0	0	0	0	0	0	1	8
3092	284	No	Fred D. Alexander Boulevard	Brookshire Blvd. (NC 16) to Sunset Rd.	n/a	New Road (4), Bike Lanes	Local	Charlotte	Local	3	0	0	-2	0	0	1	0	0	2	8
3236	285	No	Providence Road (NC 16)	Fairview Rd. to Old Providence Rd.	4-lane, divided	Widening (4), Bike Lanes	Equity	Charlotte	State	3	1	0	0	1	0	0	0	0	2	8
3023	286	No	Sum Wison Road	Nations Ford Rd. to South Tryon St.	2-lane road	Widening (2), Bike Lanes	Local	Charlotte	Local	2	0	1	-2	0	0	1	2	2	0	8
3250	287	No	Arbuckle Dr-Shopton Rd. Connector	Old Dowd Rd. to I-85	2-lane road	Widening (2), Bike Lanes	Local	Charlotte	Local	1	3	0	-2	0	0	0	1	0	3	8
3137	288	No	Fairview Road (ChalkRk)	Concord Rd. to I-85	4-lane, undivided	Widening (4), Bike Lanes	Local	Charlotte	Local	5	2	0	0	0	0	0	0	0	0	7
3087	289	No	Fairview Road (ChalkRk)	Concord Rd. to I-85	4-lane, divided	Widening (4), Bike Lanes	Local	Charlotte	Local	5	2	0	0	0	0	0	0	0	0	7
3297	290	No	Vance Rd. Extension	Hambright Rd. to Glend Rd.	n/a	New Road (4), Median, Bike Lanes	Equity	Huntersville	State	4	2	0	3	-2	1	0	0	0	1	7
3234	291	No	Prosperity Church Road Ext.	Eastfield Road to Davidson-Concord Road	n/a	New Road (4), Median, Bike Lanes	Equity	Huntersville	State	4	1	0	2	-1	0	2	-2	0	1	7
3102	292	No	Harrisburg Road	I-485 to Cabarrus County line	2-lane, undivided	Widening (4), Bike Lanes	Equity	Charlotte	State	2	3	0	0	0	0	0	0	0	2	7
3138	293	No	W. Main Street	I-485 to Cabarrus County line	2-lane, undivided	Widening (4), Bike Lanes	Equity	Charlotte	State	1	2	0	-1	0	0	0	0	0	3	7
3135	294	No	W. Main Street	Stonewall St. to I-277 WB Ramp	3-lane road	Widening (4), Bike Lanes (1)	Local	Charlotte	Local	1	0	0	-1	0	0	0	0	0	3	7
3066	295	No	Church Street	Stonewall St. to I-277 WB Ramp	3-lane road	Widening (4), Bike Lanes (1)	Local	Charlotte	Local	1	0	0	0	3	0	1	0	0	1	7
3291	296	No	Concord Highway (US 601)	Lawyers Road to Cabarrus County Line	n/a	Widening (4), Median, Bike Lanes	Equity	Union County	State	0	3	0	-2	0	0	1	0	0	2	7
3115	297	No	Eastway Drive	I-277/N. Tryon Street/N. Caldwell Street	n/a	Reverse interchange	Local	Charlotte	State	0	3	0	0	2	0	0	0	0	2	7
3086	298	No	Eastway Drive	Kilborne Dr. to Sugar Creek Rd.	4-lane, undivided	Widening (4), Bike Lanes	Local	Charlotte	State	5	2	0	0	0	0	0	0	0	0	7
3097	299	No	Eastway Drive	Caldwell Street to Sugar Creek Rd.	4-lane, undivided	Widening (4), Bike Lanes	Local	Charlotte	State	5	2	0	0	0	0	0	0	0	0	6
3107	300	No	Graham Street (NC 81 S 73)	Albemarle Rd. to I-85 (US 601)	2-lane, 9'	Widening (4), Bike Lanes	Equity	Charlotte	Local	0	2	0	0	1	0	0	0	0	2	6
3077	301	No	Remount Road (NC 27)	Central Av. to Harris Blvd.	4-lane, median divided	Widening (4), Bike Lanes	Equity	Charlotte	State	4	1	0	0	0	0	0	0	0	0	5
3240	302	No	Remount Road Extension	Greenland Av. to Camp Green St.	n/a	New Road (2), Bike Lanes	Local	Charlotte	Local	3	2	0	-2	1	0	1	-3	0	2	5
3027	303	No	Allington Church Road	Brier Road to NC 218	n/a	New Road (2), Bike Lanes	Equity	Mint Hill	State	1	0	0	-2	0	0	1	-3	0	2	5
3089	304	No	Fifth Church Road Extension	Moore Road to Potter Road	n/a	New Road (2), (24' + paved shoulder)	Equity	Mint Hill	State	1	0	0	-2	0	0	1	-3	0	2	5
3113	305	No	I-277/Earth Street	Interchange	n/a	Reverse interchange	Local	Charlotte	State	1	0	0	0	2	0	0	0	0	2	5
3028	306	No	Allington Church Road	Albemarle Rd. to Rocky River Ch. Rd.	n/a	New Road (2), Bike Lanes	Equity	Union County	State	2	0	0	0	0	0	2	0	0	0	4
3198	307	No	NC 218	US 601 to NC 205	2-lane, undivided	Widening (4), Median, Bike Lanes	Equity	Union County	State	0	3	0	-3	0	0	1	0	0	2	4

APPENDIX B
Public Involvement

- **February 2008 Open House Meeting Materials** Pages B-2 to B-6
- **August 2009 Public Meeting Materials** Pages B-7 to B-10
- **February 2010 Open House Meeting Materials** Pages B-11 to B-12
- **LRTP Brochure** Pages B-13 to B-14
- **Publication Affidavits** Pages B-15 to B-22



**MECKLENBURG - UNION
METROPOLITAN PLANNING ORGANIZATION**

600 East Fourth Street
Charlotte, North Carolina 28202-2853
704-336-2205
www.mumpo.org

CHARLOTTE
CORNELIUS
DAVIDSON
HUNTERSVILLE
INDIAN TRAIL
MATTHEWS
MECKLENBURG
COUNTY
MINT HILL
MORRISVILLE
NCDOT
PINEVILLE
STALLINGS
UNION
COUNTY
WAXHAM
WEDDINGTON
WESLEY CHAPEL
WINGATE

**Media Advisory
February 4, 2008**

Contact: Robert Cook
704-336-8643
rwcCook@ci.charlotte.nc.us

**MUMPO TO HOLD KICK-OFF MEETINGS FOR
LONG-RANGE TRANSPORTATION PLAN UPDATE**

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) will hold two Open House-format meetings to kick-off efforts to update its long-range transportation plan (LRTP). The meetings are scheduled for the following dates and locations:

Thursday, February 21-Charlotte
2:00 PM - 7:00 PM
Room 280
Charlotte-Mecklenburg Government Center
600 E. Fourth St.
Charlotte, NC 28202

Thursday, February 28-Monroe
2:00 PM - 7:00 PM
South Piedmont Community College-Old Charlotte Highway Campus in Monroe
Conference Center
4009 Old Charlotte Highway
Monroe, NC 28110

The public is invited to attend these meetings and provide MUMPO with its comments and concerns on the long-range transportation needs of the community.

The LRTP is a federally-mandated, long-term planning document detailing the transportation improvements and policies to be implemented in MUMPO's planning area. It will outline where and how roads, transit, bicycle and pedestrian facilities will be built up to the year 2035.

MUMPO is responsible for coordinating transportation policy for local governmental jurisdictions within the Charlotte Urbanized Area. For more information, visit our website at www.mumpo.org.

###



**MECKLENBURG-UNION
METROPOLITAN PLANNING ORGANIZATION**

Have A Voice In Transportation Needs

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) will hold two open houses to kick-off the public involvement efforts associated with the update to its long-range transportation plan (LRTP). The LRTP is a federally-mandated, long-term planning document detailing the transportation improvements and policies to be implemented in MUMPO's planning area. It will outline where and how roads, transit, bicycle and pedestrian facilities will be built up to the year 2035.

We invite you to attend one of the two open houses to tell us what your priorities are for our region's transportation future. There will be no formal presentations, so feel free to show up at any time during the time periods listed to the left.

For more information, contact Robert W. Cook at 704-336-8643 or rwcook@ci.charlotte.nc.us.

Thursday, February 21-Charlotte
2:00 PM - 7:00 PM
Room 280
Charlotte-Mecklenburg
Government Center
600 E. Fourth St.
Charlotte, NC 28202

Thursday, February 28-Monroe
2:00 PM - 7:00 PM
South Piedmont Community
College-Old Charlotte Highway
Campus in Monroe
Conference Center
4209 Old Charlotte Highway
Monroe, NC 28110

For more information, please
visit www.mumpo.org.

Mecklenburg-Union Metropolitan Planning Organization

WE NEED YOUR INPUT!

LONG-RANGE TRANSPORTATION PLAN UPDATE

MUMPO is beginning to update its Long-Range Transportation Plan (LRTP). The LRTP is a federally-mandated, long-term planning document detailing the transportation improvements and policies to be implemented in MUMPO's planning area. It will outline where and how roads, transit, bicycle and pedestrian facilities will be built up to the year 2035. MUMPO needs your input as it begins its update effort and invites you to two open house meetings (see below). For more information visit the MUMPO website:

www.mumpo.org

OPEN HOUSES

<p>Thursday, February 21, 2008 2:00pm – 7:00pm Chase-Meck Government Center Conference Room 200 600 E. 4th Street Charlotte, NC 28202</p>	<p>Thursday, February 28, 2008 2:00pm – 7:00pm 5. Piedmont Community College Conference Center (building "A") 4209 Old Charlotte Highway Monroe, NC 28110</p>
--	--

Contact person:

Robert Cook Phone: 704-336-8643 Fax: 704-336-5123 Email: rcook@i.charlotte.nc.us

PLEASE PRINT CLEARLY AND LEGIBLY AND INCLUDE FULL CONTACT INFORMATION

**MUNRO LRTP Update
Open House – Sign-in Sheet
February 24, 2022
North Piedmont Community College**

NAME	MAILING ADDRESS	E-MAIL ADDRESS	REPRESENTING? (Agency, Neighborhood, etc.)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			

B. Public Involvement

**MECKLENBURG-UNION
METROPOLITAN PLANNING ORGANIZATION**

**Long-Range Transportation Plan Update
Open House**

COMMENT SHEET

**February 28, 2008
South Piedmont Community College, Monroe**

Please submit comments or questions in the space provided below.

Name: _____

Address: _____

Phone Number: _____ **Email Address:** _____

Please provide any comments on MUMPO's long-range transportation plan update efforts:

Your input is important to us! Comments sheets may be given to a staff member tonight or returned by mail or fax so that they are received no later than April 30, 2008.

How did we do?

Today's meeting was helpful in letting me understand the process.

Strongly Agree Agree Neither Disagree Strongly Disagree

Clear and adequate information was provided about the process.

Strongly Agree Agree Neither Disagree Strongly Disagree

There was ample notice of public meeting.

Strongly Agree Agree Neither Disagree Strongly Disagree

There was ample opportunity to comment.

Strongly Agree Agree Neither Disagree Strongly Disagree

The meeting time and location was suitable.

Strongly Agree Agree Neither Disagree Strongly Disagree

How did you find out about the meeting?

E-mail Postcard Website Newspaper Ad Other _____

**Please send comments to: Robert W. Cook 600 E. Fourth St. Charlotte, NC 28202
Phone: (704) 336-8643 Fax: (704) 336-5123 rwcook@ci.charlotte.nc.us**



**M E C K L E N B U R G – U N I O N
METROPOLITAN PLANNING ORGANIZATION**

600 East Fourth Street
Charlotte, North Carolina 28202-2853
704-336-2205
www.mumpo.org

- CHARLOTTE
- CORNELIUS
- DAVIDSON
- HUNTERSVILLE
- INDIAN TRAIL
- MATTHEWS
- MECKLENBURG COUNTY
- MINT HILL
- MONROE
- NOGOT
- PINEVILLE
- STALLINGS
- UNION COUNTY
- WAXHAW
- WEDDINGTON
- WESLEY CHAPEL
- WINGATE

**Media Advisory
August 19, 2009**

Contact: Robert Cook
704-336-8643
rrcook@ci.charlotte.nc.us

**MUMPO TO HOLD PUBLIC MEETINGS FOR
LONG-RANGE TRANSPORTATION PLAN UPDATE**

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) will hold two Open House-format meetings to receive the public's input on the update its long-range transportation plan (LRTP). The focus of the meetings will be on draft fiscally-constrained project lists. The meetings are scheduled for the following dates and locations:

Monday, August 24-Charlotte 4:00 PM - 6:00 PM
Room 266
Charlotte-Mecklenburg Government Center
600 E. Fourth St.
Charlotte, NC 28208


Monday, August 31-Indian Trail 4:00 PM - 7:00 PM
Indian Trail Town Hall Civic Building
100 Navajo Trail
Indian Trail, NC 28079

The public is invited to attend these meetings and provide MUMPO with its comments and concerns on the long-range transportation needs of the community.

The LRTP is a federally-mandated, long-term planning document detailing the transportation improvements and policies to be implemented in MUMPO's planning area. It will outline where and how roads, transit, bicycle and pedestrian facilities will be built up to the year 2035.

MUMPO is responsible for coordinating transportation policy for local governmental jurisdictions within the Charlotte Urbanized Area. For more information, visit our website at www.mumpo.org.

###



**M E C K L E N B U R G U N I O N
M E T R O P O L I T A N P L A N N I N G O R G A N I Z A T I O N**

Have A Voice In Transportation Needs

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) will hold two open houses to review draft financially constrained road project lists for the update to the long-range transportation plan (LRTP). The LRTP is a federally-mandated, long-term planning document detailing the transportation improvements and policies to be implemented in MUMPO's planning area. It will outline where and how roads, transit, bicycle and pedestrian facilities will be built up to the year 2035.

You are invited to attend to provide your input on the projects lists, as well as your priorities for the region's transportation future. There will be no formal presentations, so feel free to show up at any time during the time periods listed to the left.

For more information, please contact Robert W. Cook at 704-336-8643 or rwcook@ci.charlotte.nc.us.

Monday, August 24-Charlotte
4:00 PM - 6:00 PM
Room 266
Charlotte-Mecklenburg
Government Center
600 E. Fourth St.
Charlotte, NC

Monday, August 31-Indian Trail
4:00 PM - 7:00 PM
Indian Trail Town Hall Civic Bldg.
100 Navajo Trail
Indian Trail, NC

For more information, please visit www.mumpo.org.

MECKLENBURG-UNION METROPOLITAN PLANNING ORGANIZATION
2035 Long Range Transportation Plan Update: DRAFT Financially-Constrained Project Lists
Public Meeting
Charlotte-Mecklenburg Government Center
August, 24, 2009

Please Print

NAME	MAILING ADDRESS	EMAIL ADDRESS

B. Public Involvement

Mecklenburg-Union Metropolitan Planning Organization

2035 Long Range Transportation Plan Update DRAFT Financially-Constrained Projects Lists

Public Meeting
Charlotte-Mecklenburg Government Center
August 24, 2009

COMMENT SHEET

You may use this sheet to write your comments. Please send them to:

Robert W. Cook, AICP
MUMPO Secretary
Charlotte-Mecklenburg Government Center, 8th floor
600 E. Fourth Street
Charlotte, NC 28202
FAX: 704-336-5123

You may also send comments electronically via MUMPO's website at www.mumpo.org

ALL COMMENTS MUST BE RECEIVED BY THE CLOSE OF BUSINESS ON SEPTEMBER 2, 2009.

Please submit comments or questions in the space provided below. Use additional sheets if needed.

Name: _____

Address: _____

Phone Number: _____

Email Address: _____

Comments: _____



MECKLENBURG - UNION
METROPOLITAN PLANNING ORGANIZATION

600 East Fourth Street
Charlotte, North Carolina 28202-2853
704-336-2205
www.mumpo.org

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COUNTY
MINT HILL
MONROE
NCDOT
PINEVILLE
STALLINGS
UNION
COUNTY
WAXHAW
WEDDINGTON
WESLEY CHAPEL
WINGATE

Media Advisory
February 5, 2010

Contact: Robert Cook
704-336-8643
rwcook@charlottenc.gov

MUMPO TO OPEN PUBLIC COMMENT PERIOD AND HOLD PUBLIC MEETINGS FOR LONG-RANGE TRANSPORTATION PLAN UPDATE, CONFORMITY DETERMINATION REPORT & TIP AMENDMENTS

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) will open a 30-day public comment period on Friday, February 5, 2010 and hold two Open House-format meetings to receive the public's input on its draft 2035 Long-Range Transportation Plan (LRTP), the Metrolina Conformity Determination Report and amendments to the Transportation Improvement Program to accelerate construction of the final segment of I-485. The meetings are scheduled for the following dates and locations:

Wednesday, February 24
4:00- 6:00 PM
Room 266
Charlotte-Mecklenburg Government
Center
600 E. Fourth St.
Charlotte, NC 28202

Thursday, February 25
4:00 -6:00 PM
Indian Trail Town Hall-Civic
Building
100 Navajo Trail
Indian Trail, NC 28079

The public is invited to attend these meetings and provide MUMPO with its comments and concerns on the three documents mentioned above. The public comment period closes on Monday, March 8, 2010.

All pertinent information can be found at MUMPO's website at:
http://www.mumpo.org/2035_LRTP.htm

The LRTP is a federally-mandated, long-term planning document detailing the transportation improvements and policies to be implemented in MUMPO's planning area, and outlines where and how roads, transit, bicycle and pedestrian facilities will be built up to the year 2035. The conformity determination report demonstrates that the financially constrained LRTP eliminates or reduces violation of the national ambient air quality standards (NAAQS) in the nonattainment area. The TIP amendments will shift the project start dates for the final section of I-485 and the I-485/I-85 interchange from 2015 and 2018 respectively to 2011.

MUMPO is responsible for coordinating transportation policy for local governmental jurisdictions within the Charlotte Urbanized Area. For more information, visit our website at www.mumpo.org.

###

NOTICE OF PUBLIC COMMENT PERIOD & PUBLIC COMMENT MEETINGS

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) is soliciting public review and comment on the following documents:

- DRAFT 2035 Long Range Transportation Plan (LRTP)
- 2009-2015 Transportation Improvement Program (TIP) Amendment
- DRAFT Metrolina Air Quality Conformity Determination Report (CDR) for the
 - DRAFT 2035 LRTP
 - 2009-2015 TIP Amendment

This ad covers both the MPO area of Mecklenburg and Union Counties and the rest of Union County outside of the MPO boundary which is part of the Rocky River Rural Planning Organization (RPO).

All documents will be available for public comment for 30 days, beginning on Friday, February 5, 2010 through Monday, March 8, 2010. In addition the public may attend two meetings being held to receive comments on these documents.

Wednesday, February 24

4:00- 6:00 PM

Room 266

Charlotte-Mecklenburg Government Center

600 E. Fourth St.

Charlotte, NC 28202

Thursday, February 25

4:00 -6:00 PM

Indian Trail Town Hall-Civic Building

100 Navajo Trail

Indian Trail, NC 28079

2035 Long-Range Transportation Plan (LRTP)

The LRTP is MUMPO's federally-mandated, financially-constrained, long-term planning document detailing the transportation improvements and policies to be implemented in the MPO's planning area through 2035. The draft plan complies with the Statewide and Metropolitan Transportation Planning regulations issued by the US Department of Transportation.

2009-2015 Transportation Improvement Program (TIP) Amendment

An amendment to MUMPO's TIP is necessary in order to move the following projects into FY 2011 of the TIP.

• R-2248F, construction of I-485 from NC 115 to I-85

• R-2123CE, construction of the I-485/I-85 interchange

Both projects are currently shown in the TIP to begin construction in 2015.

Metrolina Air Quality Conformity Determination Report (CDR)

The purpose of this report is to comply with the provisions of the Clean Air Act Amendments of 1990 and the Safe Accountable Flexible Efficient Transportation-Equity Act - Legacy for Users (SAFETEA-LU). It demonstrates that the financially constrained long-range transportation plan and the transportation improvement program (TIP) eliminates or reduces violation of the national ambient air quality standards (NAAQS) in the Metrolina area and conforms to the State Implementation Plan (SIP).

Copies of all documents are available for review from the Charlotte-Mecklenburg Planning Department located on the 8th floor of the Charlotte-Mecklenburg Government Center at 600 East Fourth Street, Charlotte, NC 28202. Copies are also available at the following Mecklenburg County libraries: Main, Morrison, North County, South County, University City, West Boulevard and Beatties Ford Road; and the following Union County libraries: Main, Union-West and Waxhaw. The report can also be found at the city/town halls of the following municipalities: Cornelius, Davidson, Huntersville, Indian Trail, Matthews, Mint Hill, Monroe, Pineville, Stallings, Waxhaw, Weddington, and Wingate. The documents may also be viewed at the MUMPO website: www.mumpo.org.

Comments may be sent by mail, email, or fax, to the following:

MUMPO c/o Robert Cook

600 E. Fourth St., 8th floor

Charlotte, NC 28202

rwcook@charlottenc.gov

FAX: 704-336-5123

All comments must be received by 5:00 PM, March 8, 2010.

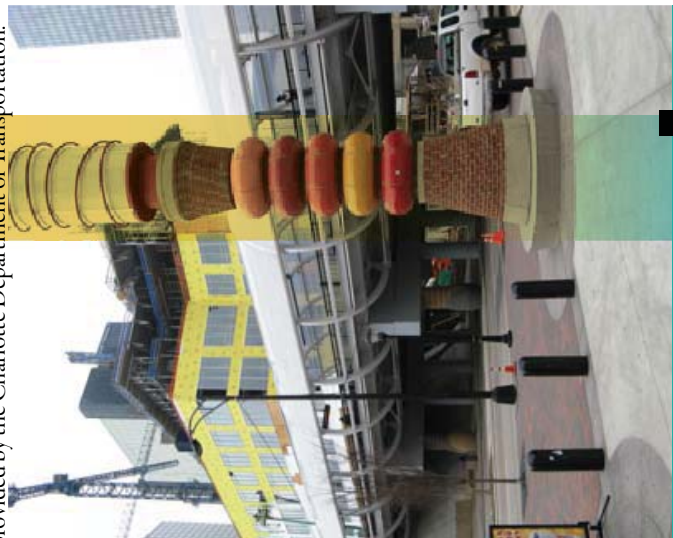
Additional MUMPO information can be obtained by contacting Robert Cook at 704-336-8643, by email at rwcook@charlottenc.gov, or by visiting the MUMPO website at www.mumpo.org. Staff will provide auxiliary aids and services per the Americans with Disabilities Act (ADA) for disabled persons wishing to attend the public meetings. Anyone requiring such services should contact staff as soon as possible.

The Program of Projects required by 49 USC 5307 is a subset of the Transportation Improvement Program and the public review and comment solicited for this Transportation Improvement Program is intended to explicitly include and satisfy the public review and comment required under 49 USC 5307(c) (1) through (7) for the Urbanized Area Formula Program.

The MUMPO Policy Board

The MUMPO Policy Board consists of elected officials representing Charlotte, Cornelius, Davidson, Huntersville, Matthews, Mecklenburg County, Mint Hill and Pineville in Mecklenburg County, and Indian Trail, Monroe, Stallings, Union County, Waxhaw, Weddington, Wesley Chapel and Wingate in Union County. A member of the North Carolina Board of Transportation is also a voting member. The Board includes non-voting members from the Charlotte-Mecklenburg Planning Commission, Union County Planning Board, North Carolina Turnpike Authority and the US Department of Transportation.

The Charlotte-Mecklenburg Planning Department is the Lead Planning Agency for MUMPO; staff support is also provided by the Charlotte Department of Transportation.



Mecklenburg-Union
Metropolitan Planning Organization

600 East 4th Street, 8th Floor
Charlotte, NC 28202-2853

2035 Long Range Transportation Plan

Your Input

we want
www.mumpo.org






Mecklenburg-Union

Metropolitan Planning Organization

An Introduction to MUMPO and the 2035 LRTP Update

What is MUMPO?

The Mecklenburg Union Metropolitan Planning Organization (MUMPO) is responsible for federally mandated transportation planning activities within all of Mecklenburg County and the urban portion of Union County. The primary duties of MUMPO include:

- Preparing long range transportation plans
- Preparing transportation-related air quality planning conformity analyses
- Any other transportation planning duties required by federal Law.



tation and land use decisions based on their available funds and community objectives. Due to air quality conditions caused in part by traffic within the Charlotte region, Federal law requires MUMPO to reevaluate and update its LRTP every four years. The LRTP update is currently underway!

What is the LRTP?

One of the most important duties of MUMPO is to prepare the Charlotte region's Long Range Transportation Plan (LRTP). The LRTP defines policies, programs and projects to be accomplished during at least the next twenty years. Because the plan update is to be finished in 2009, this LRTP will describe which roads, transit, and bicycle and pedestrian facilities will be built up to the year 2035. The LRTP will also help local governments make their transpor-

programs and other transportation related activities. The web site also contains information on the opportunities for citizens to provide their input into MUMPO programs, including the LRTP update. The website can be found at

www.mumpo.org

When the public meeting dates are set, they will be advertised in several media outlets and posted on the MUMPO web site. In addition, special invitations will be sent to those on the MUMPO mailing list. If you would like more information on how you can participate in MUMPO's transportation planning process and/or how to have you or your association, group or organization added to the MUMPO mailing list, please contact Robert Cook with MUMPO at 704-336-8643 or send him an e-mail at rwcook@ci.charlotte.nc.us.

Contact Us!

**Mecklenburg Union
Metropolitan Planning Organization**
600 East Fourth Street
8th Floor
Charlotte, North Carolina 28202
Phone: (704) 336-8643
Fax: (704) 336-5123
E-mail: rwcook@ci.charlotte.nc.us

We want your input!

MUMPO is undertaking several activities to encourage meaningful citizen participation in our LRTP update. Throughout 2009, MUMPO will provide citizens an opportunity to comment on transportation projects proposed for the 2030 LRTP update.

In addition, MUMPO's website contains useful information on its transportation plans, work

**NORTH CAROLINA,
UNION COUNTY**

AFFIDAVIT OF PUBLICATION

Before the undersigned, a Notary Public of said County and State, duly commissioned, qualified, and authorized by the law to administer oaths, personally appeared Pat Deese who being first duly sworn, deposes and says: that she is Principal Clerk engaged in the publication of a newspaper known as The Enquirer-Journal, published, issued, and entered as second class mail in the City of Monroe in said County and State; that he/she is authorized to make this affidavit and sworn statement; that the notice or other legal advertisement, a true copy of which is attached hereto, was published in The Enquirer-Journal on the following dates:

FEBRUARY 3, 10, 14, 21 2010

and that the said newspaper in which such notice, paper, document, or legal advertisement was published was, at the time of each and every such publication, a newspaper meeting all the requirements and qualifications of Section I-597 of the General Statutes of North Carolina and was a qualified newspaper within the meaning of Section I-597 of the General Status of North Carolina.

This 21 day of Feb. 2010

Sworn to and subscribed before me, this 21 day of Feb. 2010

Notary Public

Seal

May Commission expires: * May 11, 2013 *

Notice of Public Meeting	Inches: <u>31.50"</u>	Monroe, NC	Date: <u>Feb. 21,</u>	<u>2010</u>
<u>City of Charlotte</u>			Account #	<u>6104600</u>
<u>Ritz Marketing</u>			COST:	<u>\$ 1,000.00</u>
<u>512 Lexington Ave. East</u>				
<u>Charlotte, NC 28203</u>				

IN ACCOUNT WITH

THE ENQUIRER-JOURNAL

Post Office Box 5040
500 West Jefferson Street
Monroe, NC 28111-5040

IMPORTANT LEGAL DOCUMENT, PLEASE RETAIN

NORTH CAROLINA,
UNION COUNTY.

AFFIDAVIT OF PUBLICATION

Before the undersigned, a Notary Public of said County and State, duly commissioned, qualified, and authorized by law to administer oaths,

personally appeared Pat Deese

who being first duly sworn, deposes and says: that he is

Principal Clerk engaged in the publication of a newspaper known as The Enquirer-Journal, published, issued, and entered as second class mail in the City of Monroe in said County and State; that he is authorized to make this affidavit and sworn statement; that the notice or other legal advertisement, a true copy of which is attached hereto, was published in The Enquirer-Journal on the following dates:

February 3, 10, 14, 21 2010

and that the said newspaper in which such notice, paper, document, or legal advertisement was published was, at the time of each and every such publication, a newspaper meeting all the requirements and qualifications of Section 1-597 of the General Statutes of North Carolina and was a qualified newspaper within the meaning of Section I-597 of the General Statutes of North Carolina.

This 21 day of Feb 2010
Pat Deese

Sworn to and subscribed before me, this 21 day of Feb 2010
Bob P. Clutz Notary Public

My Commission expires: May 11, 2013

Inches: 3 1/2
MONROE, N.C. Feb 21 2010

M City of Charlotte Ritz Marketing Ad#
ACCOUNT #: 06104600
COST: \$ 1,000.00

-IN ACCOUNT WITH-

The Enquirer-Journal

P.O. Box 5040
500 W. Jefferson St.
Monroe, N.C. 28111-5040

2 of 2

Important Legal Document, Please Retain

The Charlotte Observer Publishing Co.
 Charlotte, NC
 Affidavit of Publication
 North Carolina) ss
 Mecklenburg County)

THE CHARLOTTE OBSERVER

ATTN KIM BALLARD
 RITZ MARKETING/COUNTY ACCTS
 512 LEXINGTON AVE
 CHARLOTTE NC 28203

REFERENCE: 30060184
 6434118 City of Charlotte

Before the undersigned, a Notary Public of said County and State, duly authorized to administer oaths affirmations, etc., personally appeared, being duly sworn or affirmed according to law, doth depose and say that he/she is a Representative of The Charlotte Observer Publishing Company, a corporation organized and doing business under the laws of the State of Delaware, and publishing a newspaper known as The Charlotte Observer in the city of Charlotte, County of Mecklenburg, and State of North Carolina and that as such he/she is familiar with the books, records, files, and business of said Corporation and by reference to the files of said publication, the attached advertisement was inserted. The following is correctly copied from the books and files of the aforesaid Corporation and Publication.

PUBLISHED ON: 02/02

AD SPACE: 12.000 INCH
 FILED ON: 03/25/10

NAME: Janeth M. Deane TITLE: Acctg Clerk
 DATE: 03-25-10

In Testimony Whereof I have hereunto set my hand and affixed my seal, the day and year aforesaid.

Notary: Signe M. Jirsa My Commission Expires: 1/1

My Commission Expires May 27, 2011

The Charlotte Observer Publishing Co.
Charlotte, NC

North Carolina) ss
Mecklenburg County)

Affidavit of Publication

THE CHARLOTTE OBSERVER

ATTN KIM BALLARD
RITZ MARKETING/COUNTY ACCTS
512 LEXINGTON AVE
CHARLOTTE NC 28203

REFERENCE: 30060184
6434118 City of Charlotte

Before the undersigned, a Notary Public of said County and State, duly authorized to administer oaths affirmations, etc., personally appeared, being duly sworn or affirmed according to law, doth depose and say that he/she is a representative of The Charlotte Observer Publishing Company, a corporation organized and doing business under the laws of the State of Delaware, and publishing a newspaper known as The Charlotte Observer in the city of Charlotte, County of Mecklenburg, and State of North Carolina and that as such he/she is familiar with the books, records, files, and business of said Corporation and by reference to the files of said publication, the attached advertisement was inserted. The following is correctly copied from the books and files of the aforesaid Corporation and Publication.

PUBLISHED ON: 02/02

AD SPACE: 12.000 INCH
FILED ON: 03/25/10

NAME: Judith M. Deans TITLE: Account Clerk
DATE: 03-25-10

In Testimony Whereof I have hereunto set my hand and affixed my seal, the day and year aforesaid.

Notary: Suzanne M. J. [Signature] My Commission Expires: 1/1/11

My Commission Expires May 27, 2011

The Charlotte Observer Publishing Co.
Charlotte, NC
Affidavit of Publication

North Carolina) ss
Mecklenburg County)

MECK NEIGHBORS CITY

ATTN KIM BALLARD
RITZ MARKETING/COUNTY ACCTS
512 LEXINGTON AVE
CHARLOTTE NC 28203

REFERENCE: 30060184
6434139 City Of Charlotte

Before the undersigned, a Notary Public of said County and State, duly authorized to administer oaths affirmations, etc., personally appeared, being duly sworn or affirmed according to law, doth depose and say that he/she is a representative of The Charlotte Observer Publishing Company, a corporation organized and doing business under the laws of the State of Delaware, and publishing a newspaper known as The Charlotte Observer in the city of Charlotte, County of Mecklenburg, and State of North Carolina and that as such he/she is familiar with the books, records, files, and business of said Corporation and by reference to the files of said publication, the attached advertisement was inserted. The following is correctly copied from the books and files of the aforesaid Corporation and Publication.

PUBLISHED ON: 02/14 02/21

AD SPACE: 33.750 INCH
FILED ON: 03/25/10

NAME: Judith M. Jones TITLE: Acctg Clerk
DATE: 03-25-10

In Testimony Whereof I have hereunto set my hand and affixed my seal, the day and year aforesaid.

Notary: Seana M. Jones My Commission Expires: 1/1/11

My Commission Expires May 27, 2011

The Charlotte Observer Publishing Co.
Charlotte, NC

North Carolina } ss
Mecklenburg County}

Affidavit of Publication

LAKE NORMAN SOUTH

ATTN KIM BALLARD
RITZ MARKETING/COUNTY ACCTS
512 LEXINGTON AVE
CHARLOTTE NC 28203

REFERENCE: 30060184
6434139 City Of Charlotte

Before the undersigned, a Notary Public of said County and State, duly authorized to administer oaths affirmations, etc., personally appeared, being duly sworn or affirmed according to law, doth depose and say that he/she is a representative of The Charlotte Observer Publishing Company, a corporation organized and doing business under the laws of the State of Delaware, and publishing a newspaper known as The Charlotte Observer in the city of Charlotte, County of Mecklenburg, and State of North Carolina and that as such he/she is familiar with the books, records, files, and business of said Corporation and by reference to the files of said publication, the attached advertisement was inserted. The following is correctly copied from the books and files of the aforesaid Corporation and Publication.

PUBLISHED ON: 02/14 02/21

AD SPACE: 33.750 INCH
FILED ON: 03/25/10

NAME: Qualith M. Lewis TITLE: County Clerk
DATE: 03-25-10

In Testimony Whereof I have hereunto set my hand and affixed my seal, the day and year aforesaid.

Notary: Stephan M. Lewis My Commission Expires: 1/1/11

My Commission Expires May 27, 2011

The Charlotte Observer Publishing Co.
Charlotte, NC
Affidavit of Publication

North Carolina) ss
Mecklenburg County)

SOUTH MECK EAST

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PUBLISHED ON: 02/14 02/21

AD SPACE: 33.750 INCH
FILED ON: 03/25/10

NAME: Judith M. Dear TITLE: Accts Clerk
DATE: 03-25-10

In Testimony Whereof I have hereunto set my hand and affixed my seal, the day and year aforesaid.

Notary: [Signature] My Commission Expires: 1/1/11

My Commission Expires May 27, 2011

The Charlotte Observer Publishing Co.
 Charlotte, NC
 North Carolina) ss Affidavit of Publication
 Mecklenburg County)

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PUBLISHED ON: 02/14 02/21

AD SPACE: 33.750 INCH
 FILED ON: 03/25/10

NAME: Justith M. Adams TITLE: Accts Clerk
 DATE: 03-25-10

In Testimony Whereof I have hereunto set my hand and affixed my seal, the day and year aforesaid.

Notary Stephan M. Freeman My Commission Expires: 1/1/11

My Commission Expires May 27, 2011

APPENDIX C

Congestion Management

C-1: Congested Corridors	Pages C-2 to C-7
C-2: Congested Hot Spots	Page C-8 to C-9
C-3: Mitigation Strategy Toolbox	Pages C-10 to C-17

C-1: Congested Corridors

(two Excel charts in the following 6 pages) →

Congested Corridors	Links	Limits	Roadway Type	Causes of Congestion	Roadway Improvements				Transit Improvements				TDM		ITS/FSM			Access Management						
					Increase # of Lanes w/o Widening	Implement Geometric Design Improvements	Implement Managed Lanes	Grade Separations	Eliminate At-Grade Rail Crossings	Add Connectivity	Increase Bus Route Coverage or Frequencies	Implement Park-and-Ride Lots	Implement Rapid Transit	Install Bus Lanes	Transit Signal Prioritization	Ridesharing	Congestion Pricing	Traffic Signal Coordination (incl. add traffic signal)	Reversible Travel Lanes	Freeway Incident Detection & Management	Ramp Metering	Variable Message Signs	Left-turn Restrictions (also incl. add turn lanes)	Turn Lanes into Properties and Relocation of Driveways and Exit Ramps
24 Rocky River Road	Rocky River Road	Secret Shortcut Road to Goldmine Road	Arterial	Road geometrics - curbing/widening roads (narrow 2 lane roadways)	R	R		NR	NR	NR	NR	NR			R	NR		NR	R	R	I	NR	R	
	Goldmine Road	Airport Road to Rocky River Road		Lack of left turn lanes and substandard lane width	I	R		NR	NR	NR	NR	NR				R	NR		NR	R	R	R	NR	R
25 NC 75/Walkup Ave	Secret Shortcut Road	Slovens Mill Rd. to Rocky River Road	Arterial	lack of deceleration lanes and turn lanes	R	I		NR	NR	NR	NR	NR			R	NR		NR	R	R	R	NR	R	
	NC 75/Franklin St./Morgan Mill Rd/Walkup Ave. Road	Marlin Luther King Blvd to Suberland Ave.		Intersection capacity. Signal exists but still congested	NR	R		NR	NR	NR	NR	NR				R	NR		NR	R	R	NR	R	R
26 Charlotte Ave	Charlotte Ave	Church Street to Concord Ave	Arterial	Bottleneck due to change from multi-lanes to two lanes	R	I		NR	NR	NR	NR	NR			R	NR		NR	R	R	NR	R	R	
27 I-77 South	I-77 S	South Carolina Line to Trade St.	Freeway	Unable to widen due to location of existing neighborhoods and causeway at Lake Norman	NR	I	R	NR	NR	NR	NR	NR			R	NR		NR	R	R	NR	R	R	
28 I-77 North	I-77 N	Iredell Co Line to Trade St.	Freeway	Four lane highway then reduces to 3 lanes in the northbound direction between I-485 and Cleard Rd. Traffic back up on ramps - little cue spacing because of close proximity to Statesville Rd. at exits 23, 25, and 28.	NR	I	R	NR	NR	NR	NR	NR			R	NR		NR	R	R	R	R	R	
29 I-485 West	I-485 W	I-77 North to I-77 South	Freeway	Not really a congested corridor but could become more congested with the airport expansion and relocation of the intermodal terminal.	NR	I	R	NR	NR	NR	NR	NR			R	NR		NR	R	R	R	R	R	
30 I-485 South	I-485 S	US 74 East to I-77 South	Freeway		NR	I	R	NR	NR	NR	NR	NR			R	NR		NR	R	R	R	R	R	
31 I-485 East	I-485 E	US-74 East to I-85 North	Freeway		NR	I	NR	NR	NR	NR	NR	NR			R	NR		NR	R	R	R	R	R	
32 I-85 East	I-85 E	Cabarrus Co Line to I-77	Freeway	Commuters travelling in both directions	NR	I	NR	NR	NR	NR	NR	NR			R	NR		NR	R	R	R	R	R	
33 I-85 West	I-85 W	Gaston Co Line to I-77	Freeway	Congestion at Concord Mills	NR	I	NR	NR	NR	NR	NR	NR			R	NR		NR	R	R	R	R	R	
34 I-277	I-277	I-77N to I-77S	Freeway	Only congested during peak periods	NR	I	NR	NR	NR	NR	NR	NR			R	NR		NR	R	R	R	R	R	
				Weaving issues	NR	I	NR	NR	NR	NR	NR	NR			R	NR		NR	R	R	R	R	R	

*Grey shading indicates strategy not appropriate for roadway type based on congestion toolbox in Appendix C.

*Letter "I" indicates strategy has been implemented on corridor in the past.

*Green shading indicates strategy should be considered/evaluated on roadway prior to adding capacity.

NR indicates strategy is appropriate for general roadway type but not recommended as part of the CMP.

Travel Corridor = Parallel roadways serving the same primary travel pattern

**APPENDIX C-1
Congested Corridors**

**MUMPO Congestion Management Process
Project Screening**

**Project
Recommendations**

Congested Corridors	Links	Limits	Roadway Type	Causes of Congestion	Mitigation Strategies (past, present, and future)	Recommended Projects <i>(Highlights indicate priority projects where capacity adding projects are recommended but only after mitigation strategies are evaluated in future CMPS)</i>	Justification
1 Statesville Road	Statesville Road	Graham Street to Catawba Ave	Travel Corridor	Serves as an alternate route for I-77 Little distance in between signals. Close proximity to several intersections At a few problem intersections, unable to make a left turn and lack of traffic light Serves as a subregional and a local route Access management issues Lack of left turn lanes Serves as an alternate route for I-85	Considering a split diamond interchange at NC 73/Statesville	Widen Statesville Rd between Harris Rd. and Gilead Rd. (2035)	Provides alternative to I-77 for local traffic from I-485.
	NC 115	I-77 North to Beatty Street					
2 Brookshire Blvd	Eastfield Road	NC 115 to Cabarrus County	Travel Corridor	NC 16 Functions as a Class II Arterial but designed as a hybrid arterial carrying speeds up to 55 mph	Implemented interchange upgrades Upgrade simple diamond to single point diamond Add auxiliary lanes at North 85 - 1/2 mile Mt Holly Rd/Brookshire - connect local street to create half clover interchange at Coolack Dr and Callabridge Ct.		
	NC 16	I-77 South to Gaston County					
3 Beatties Ford Road	Bellhaven/Rozelles Ferry Rd.	Brookshire Blvd (S) to Brookshire Blvd. (N)	Arterial	Serves as an alternate route when there is an accident on I-77 Significant residential development in Huntersville - housing and schools Lack of connectivity - no east/west connections Lack of access management Too many curb cuts Reduces from 6 to 4 lanes near the river Serves as an alternate route when an traffic incident occurs on I-85	Add 4 lanes - widen to 44 feet Improvements in Huntersville - 2 lane facility - widening and provide bike lanes.	Widen Beatties Ford from 2 to 4 lanes from Capps Hill Mine Rd to Sunset Rd. (2015)	Extends four lane section of Beatties Ford Rd as alternative to I-77. The mitigation strategies recommended for consideration on this corridor will not be as effective on this portion of the Beatties Ford since there are fewer access issues.
	Beatties Ford Road	Trade Street to Gilead Road					
4 Wilkison Blvd	Wilkison Blvd	I-277 to Gaston County	Arterial	Rapidly growing area - on land use side considering consolidating driveways Serves as alternate route to 77 - lots of people in York County and SC travel inbound.	Add median to control left turn		
	NC 49 South	I-277 to Lake Wylie					
5 Nations Ford Road	Nations Ford Spur	South Tryon to Westinghouse Road	Arterial	Serves as an alternate route to I-77	Widened to 4 lanes and improved access mgmt issues. Also added signals at Choke and Palisades	Extension of Community House Rd. from Endhaven Ln to South of I-485	Adds connectivity and will relieve pressure on Johnston Road/I-485 interchange
	Park Blvd.	Caldwell Street to I-485 Charlotte/owne Av to Highway 51					
6 Park Road	South Blvd.	Charlotte/owne Av to Highway 51	Travel Corridor	Significant commercial and residential development People commuting from Union County to Mecklenburg County to access jobs Serves as alternate route for US 74	Addressed assess management - added driveways No strategies implemented	Improvements from Sharon Amity Rd to Conference Drive (2015)	This project is part of the continued transition of Independence Boulevard to more of a limited access freeway. The project enhance transit options through the use of HOV and improves throughput on general use lanes by restricting turning movements and access. This widening to be implemented in conjunction with the mitigation strategies recommended
	Providence Road	I-277 to Rea Rd					
7 Providence Road	E. 3rd St./Providence Road	I-277 to Rea Rd	Arterial	Mx of commercial, industrial, and office activity Road of regional significance and statewide significance. Essentially a surface street that carries most traffic in Charlotte but is not a freeway. Signals not coordinated throughout corridor	Considering managed lanes and roadway extension		
	7th Street/Monroe Rd/John Street/Old Monroe Rd./Old Charlotte Hwy./Charlotte Ave.	Central Avenue to NC 75					
8 US 74	Idlewild Rd/Secret Shortcut Rd	Monroe Road to Fowler Road	Travel Corridor	Mixed use corridor - business, commercial, industrial No alternative routes Too many signals	Strategies have not been implemented because NCDOT limits the number of traffic signals on that road Need to continue data collection on conditions in corridor	Improvements from Krefeld Drive to NC 51 (two projects 2035)	This project is also part of the continued transition of Independence Boulevard to more of a limited access freeway. The project enhance transit options through the use of HOV and improves throughput on general use lanes by restricting turning movements and access.
	Rocky River Road	US 74 to NC 84					
8 US 74	Concord Avenue	US 74 to Charlotte Ave	Travel Corridor				
	US 601	US 74 to SC Line					
8 US 74	US 74	I-485 to US 601 South	Travel Corridor				
	Old Monroe Rd/Old Charlotte	Mecklenburg County to Brewer Dr.					
8 US 74	Leominster/Johnson Spur	Charlotte Ave to NC 75	Travel Corridor				
	Sunset Spur	US 74 to Medlin Rd.					
8 US 74	Wesley Chapel-Stouss Road	US 74 to Rogers Road	Travel Corridor				

**APPENDIX C-1
Congested Corridors**

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Project Screening**

**Project
Recommendations**

Congested Corridors	Links	Limits	Roadway Type	Causes of Congestion	Mitigation Strategies (past, present, and future)	Recommended Projects <i>(Highlights indicate priority projects where capacity adding projects are recommended but only after mitigation strategies are evaluated in future CM/PS)</i>	Justification
9 Albemarle Road	Central/Albemarle/Lawyers Albemarle/Wilgrove-Mint Hill/NC 218	7th Street to Ridge Road (Union County) Lawyers Road to US 601	Travel Corridor	Lacks access management Lane reduction from 6 lanes to 4 Serves as alternate route for 85 for people trying to avoid congestion at Concord Mills Serves as an alternate route for I-85S and provides a straight shot to Uptown Highly congested area - University Research Park and subdivision traffic	Installed double left turn lanes Widened lanes from 3 to 4 Made intersection improvements Made pedestrian improvements		
10 N. Graham St.	N. Graham St./Mallard Creek Road	I-277 to I-485	Travel Corridor		Widened lanes to standard width and added left turn lanes Made intersection improvements and added left turn lanes		
11 North Tryon St.	North Tryon/University City Blvd	Cabarrus County to University City Blvd Cabarrus County to College Street	Travel Corridor	Congested at Concord Mills especially on 85. People get off on 29 if Harris Blvd is backed up and head north on 29 Direct route into Concord and Cabarrus County - bedroom community to Charlotte Intersects Harris Blvd to create one of the most congested intersections in the City Heavily congested particularly at 29/49 split and East Mallard Creech Church Rd.	Widened roadway to 6 lanes		
12 NC 200	NC 200/Morgan Mill Rd/Franklin St./Hayne St./Lancaster Ave.	Baucom Deese to Martin Luther King Blvd.	Arterial	Road geometrics; substandard lane width; lack of intersection capacity	Considered roundabouts but funding was not available Widened to 3 lanes		
13 Freedom Dr	Freedom Dr	I-277 to Gaston County	Travel Corridor	Petroleum tanks on corridor which cause spills, clean-up issues and leakage into drainage Truck traffic - Inland Intermodal terminal located on corridor. CSX has freight intermodal terminal and Pipe line tank farm.	Added planning and sidewalks		
14 Woodlawn Road	Woodlawn Road Wendover Road Eastway Drive	Selwyn Avenue to South Tryon Street Monroe Road to Selwyn Ave. N. Tryon St. to Monroe Road	Arterial	Functions as an inner loop - circumferential route	Considered improving signal timings		
15 W.T. Harris Blvd	W.T. Harris Blvd Sharon Amity Road	I-77N to Idlewild Road W.T. Harris Blvd to Sharon Road	Travel Corridor	Poor access management Close signal spacing Intersects multiple high volume cross streets - particularly in the University City area	Interchange project planned at Harris Blvd. Roadway extension under construction on Lawyers Rd. Install a median		
16 NC 51	NC 51	South Carolina state line to Idlewild Road	Travel Corridor	Serves as an alternate route to I-485 Intersects multiple high volume radial routes Numerous traffic signals in close proximity to one another High amount of retail development in Pineville area and Matthews area Business access with front loaded driveways. No shared access localatons.	Widening to Township Pkwy to Lawyers from 2 to 4 lanes Widen NC 51 from four to six lanes between Sardis Road and Monroe Road. Add an additional lane	Could serve as an alternative route for US 74 but should evaluate mitigation strategies before widening.	
17 Tyvola Road	Tyvola Road/Fainview Road	I-77 to Providence Road	Arterial	Heavy mix of retail, office and residential activity	Proposed project to widen Carmel Rd. to Providence from 4 to 6 lanes		
18 Ballantyne Commons Pkwy	Rea Rd Ballantyne Commons Pkwy Providence Rd.	I-485 to Blakeney Heath Road Piper Glen Dr to Ballantyne Commons Pkwy Kuykendall Road to Providence Road	Travel Corridor	Access management issues Functions as a major east/west route in the area Significant new development in the area	Signal Intersection Improvements Bryant Farms Rd Extension project Farm-to-market project on Community House Rd.		
19 US 601/Skyway Dr./Hayne St.	US 601	Ridge Road to Sunset Dr.	Travel Corridor	Lack of left turn lanes Lack of deceleration lanes School buses Serves as business and commercial corridor	No strategies were implemented due to funding and because the road is owned by NCDOT.		
20 Potter Road	Potter Rd	US 74 to Wesley Chapel-Stouts Road	Arterial	Two-lane road connecting other heavily traveled roads	Need data		
21 Sam Furr (NC 73)	NC 73/Sam Furr Road	Lincoln County to Cabarrus County	Travel Corridor	Serves as a regional highway - and serves as the only significant east/west thoroughfare between I-85 (crossing I-77) and NC 150	Widening interstate from NC 115 to NC 73 - quadrant roadway intersection.		

Congested Corridors	Links	Limits	Roadway Type	Causes of Congestion	Mitigation Strategies (past, present, and future)	Recommended Projects <i>(Highlights indicate priority projects where capacity adding projects are recommended but only after mitigation strategies are evaluated in future CM/PS)</i>	Justification
22 Steele Creek Road (NC 160)	Steele Creek Road	US 74 to Billy Howey Road	Travel Corridor	Rural character with pockets of development which create congestion at NC 49. Functions as a 2 lane road except at I-485 and NC 49	Added left turn lanes Relocation of roadway		
23 Sardis Church Road	Sardis Church Rd/Unionville-Indian Trail Rd.	Monroe Road to Poplin Road (E)	Arterial	Still trying to determine primary cause of congestion (lane roadways) Lack of left turn lanes	Intersection improvements		
	Rocky River Rd	Secret Shortcut to Goldmine			Added left turn lanes and sidewalks		
24 Rocky River Road	Sardis Church Road	Monroe Road to Poplin Road	Arterial	Lack of left turn lanes	Widened Secret Shortcut Dr.		
	Rocky River Road	Secret Shortcut Road to Goldmine Road			Shoulder pavement		
25 NC 75/Walkup Ave	NC 75/Franklin St/Morgan Mill Rd/Walkup Ave. Road	Martin Luther King Blvd to Sutherland Ave.	Arterial	Intersection capacity. Signal exists but still congested	No strategies implemented		
26 Charlotte Ave	Secret Shortcut Road	Rockwell Drive to Rocky River Road	Arterial	Bottleneck due to change from multi-lane to two lanes	Realigned Concord Ave with Charlotte Ave. This provides short-term relief and prepares roadway for future widening.		
27 I77 South	I-77 S	South Carolina Line to Trade St.	Freeway	Primary commute route into Uptown - high volume	Considering managed lanes		
28 I77 North	I-77 N	Churcut Street to Concord Ave	Freeway	Unable to widen due to location of existing neighborhoods and causeway at Lake Norman	Proposing managed lanes	Add General Purpose or HOV Lanelane from Hambright Rd to Catawba Av (2015)	Addresses bottleneck for northbound travel where lanes are reduced N. of Exit 25. Supports new interchange at Westmoreland Rd also scheduled for 2015
				Four lane highway then reduces to 3 lanes in the northbound direction between I-485 and Gilead Rd. Traffic back up on ramps - little cue spacing because of close proximity to Statesville Rd. at exits 23, 25, and 28.	Proposed 485 widening project will add an additional lane in each direction		
29 I-485 West	I-485 W	I-77North to I-77 South	Freeway	Corridor could become more congested with the airport expansion and relocation of the intermodal terminal.	Considering managed lanes for truck traffic		
30 I-485 South	I-485 S	US 74 East to I-77 South	Freeway	Highest congestion in terms of volume in the Region - highest growth area with major interchanges at Providence, Rea, Johnston and South.	Considering managed lanes and widening to 6 lanes	New interchange at Wedding Road (2015)	Distributes access to areas of development to the south. New interchange will alleviate pressure on Providence and Rea Rd interchanges.
31 I-485 East	I-485 E	US-74 East to I-85 North	Freeway	High growth area	Widen to 6 lanes		
32 I-85 East	I-85 E	Cabarrus Co Line to I-77	Freeway	Commuters traveling in both directions	Widen to 8 lanes	I-485 Completion between I-77 North and I-85 North	Completion of beltline roadway will provide alternative for through traffic on I-85
				Congestion at Concord Mills		Widening of I-85 between Mallard Creek to Cabarrus County Line	Project in conjunction with the completion of I-485 and relief of bottleneck north of Concord Mills interchange.
33 I-85 West	I-85 W	Gaston Co Line to I-77	Freeway	Only congested during peak periods	Very short segment that will be very dependent on improvements to the north in Cabarrus County	Widening Freedom Drive from Edgewood Rd to Toddville Rd 2015	Interchange and arterial connectivity improvements reduce potential for backups onto I-85
34 I-277	I-277	I-77N to I-77S	Freeway	Weaving issues	Removed cloverleaf and made ramp improvements		

C-2: Congested Hot Spots

Street Name	A Cross Street	B Cross Street
SB COL/DIS I-77	EB 74 South Ramps	WB 74 North Ramps
SB COL/DIS I-77	WB 74 North Ramps	1-77 South
Southbound I-277 Frontage Road	Fourth Street	I-277 South
I-77 Southbound Frontage Road	Fifth Street	I-77 South
The Plaza	Barrington Drive	
Plaza Road Extension	Harris Boulevard	
Shamrock Drive	East Ford Road	Eastwood Drive
Robinson Church	W.T. Harris Boulevard	
Brief Road	NC 218	
Weddington Road	Monroe Road	Sadie Drive
Queens Road West	East Boulevard	Radcliffe
Lancaster Highway	Carolina Place Parkway	Dorman Road
East Boulevard	Garden Terrace	Lombardy Circle
Gleneagles Road	Park Road	
Harrisburg Road	Albemarle Road	Pence Road
Briar Creek Road	Monroe Road	US 74 EB
Caswell Road	East Fourth St.	East Fifth St.
Caswell Road	East Fifth St.	East Seventh St.
Laurel Avenue	Providence Road	Cherokee Road
Sharon Road	Selwyn Avenue	Malvern Road
NC 84	NC 16	Weddington Road
Hawthorne Lane	East Seventh St.	Bay Street
Ridge Road	Mallard Creek Road	Beard Road
Sam Newell Road	Independence Pointe Parkway	
Sam Newell Road		Arequipa Drive
I-77 Northbound Frontage Road	1-77 North	Trade Street
I-277	I-277 East	Southbound Kenilworth Avenue Off-Ramp
I-277	Frontage Road	Kenilworth Avenue
Sixth Street	I-277 Southbound	McDowell St.
Tenth Street	I-277 Eastbound Off Ramp	Poplar Street
I-77 Southbound Frontage Road	I-77 South	Trade Street
East Tenth Street	Twelfth Street	Seigle Avenue

Street Name	A Cross Street	B Cross Street
Clanton Road	South Tryon Street	South Boulevard
Farm Pond Lane	Executive Center Drive	Albemarle Road
Brunswick Avenue	Brunswick Avenue	Kings Drive
Old Concord Road	W.T. Harris Boulevard	McLean Drive
Remount Road	Youngblood	South Boulevard
Community House Road		Bryant Farms Road
Dorman Road		Lancaster Highway
Conference Drive	US 74 Eastbound	US 74 Westbound

C-3: Mitigation Strategy Toolbox

(the 8-page report begins on the next page) →



METROPOLITAN PLANNING ORGANIZATION

CONGESTION MANAGEMENT TOOLBOX



PREPARED BY: URS CORPORATION
NOVEMBER 2009

INTRODUCTION

A central component of the Congestion Management Process is development of a toolbox of strategies to alleviate congestion and enhance mobility beyond traditional capacity adding efforts. The MUMPO CMP toolbox forms the basis of a screening methodology that is designed to identify, test, and effectively match mitigation strategies with identified congested corridors.

The first step in building the toolbox was review of the Institute of Transportation Engineers' (ITE) "*Toolbox for Alleviating Traffic Congestion*." Strategies included in the final toolbox were deemed appropriate for the region by local stakeholders and in general have been implemented successfully in the past.

The MUMPO CMP Toolbox is divided into five (5) broad categories:

1. **Highway**
2. **Transit**
3. **Transportation Demand Management**
4. **Intelligent Transportation System and Transportation System Management**
5. **Access Management**

IMPLEMENTED STRATEGIES NOT INCLUDED IN TOOLBOX

The MUMPO CMP Toolbox is restricted to mitigation strategies with potential impacts that can be measured at the regional level. There are additional strategies that are commonly applied in the Mecklenburg and Union County region but cannot be assessed using regional performance measures.

These strategies are provided below.

Bicycle & Pedestrian Strategies
<ul style="list-style-type: none">• Add new sidewalks and designated bicycle lanes• Improve bicycle facilities at transit stations and other trip destinations• Design guidelines for pedestrian-oriented development• Improve safety of existing bicycle and pedestrian facilities• Exclusive non-motorized ROW

Parking Strategies
<ul style="list-style-type: none">• On-street parking and standing restrictions• Employer/landlord parking agreements• Preferential or free parking for HOVs• Location-specific parking ordinances

Land Use Strategies
<ul style="list-style-type: none">• Mixed-use development• Infill and densification• Transit-oriented development• Develop special land use districts• Develop Transportation Management Organizations• Implement land use policies/regulations

Transportation Demand Management Strategies
<ul style="list-style-type: none">• Alternative work hours• Telecommuting

MUMPO CMP TOOLBOX

The following toolbox is organized by the five categories outlined above and, for each strategy, includes a definition, appropriate roadway type for application, benefits, costs and other impacts, and implementation time frame.

1. HIGHWAY

Strategy	Roadway Type	Congestion Impacts	Costs & Other Impacts	Implementation Period
<p>1a. Increase Number of Lanes without Widening Road Takes advantage of excess width in highway cross-section (including medians or shoulders) used for breakdown lanes or median.</p>	All	<ul style="list-style-type: none"> Increase capacity 	<ul style="list-style-type: none"> Construction & Engineering Maintenance Limited Space for Incident Response if shoulder removed Safety, if median removed 	<ul style="list-style-type: none"> Arterials: Short-term Freeway: Medium-term
<p>1b. Implement Geometric Design Improvements/Unconventional Intersection Treatments Includes widening to provide shoulders, additional turn lanes at intersections, improved sight lines, and auxiliary lanes to improve merging and diverging. Unconventional intersections include quadrant roadway, bow tie, and roundabouts.</p>	All	<ul style="list-style-type: none"> Improve mobility Reduce congestion by improving bottlenecks Increase traffic flow and improve safety 	<ul style="list-style-type: none"> Costs vary by type of design 	<ul style="list-style-type: none"> Short-term
<p>1c. Managed Lanes Includes HOV, HOT, and truck only lanes. Can include constructing separate ROW, constructing barriers, and implementing contraflow lanes.</p>	Freeway	<ul style="list-style-type: none"> Reduce regional VMT Reduce transit delay Reduce regional trips Increase vehicle occupancy Improve travel times Reduce transit delay or increase transit travel 	<ul style="list-style-type: none"> Costs depend on construction--separate ROW cost, barrier separated costs, contraflow costs Annual operations and enforcement Can create environmental and community impacts 	<ul style="list-style-type: none"> Medium-term
<p>1d. Super Street Arterials Involves converting existing major arterials with signalized intersections into “super streets” that restrict left-turn movements. Can include grade-separation.</p>	Major Arterials	<ul style="list-style-type: none"> Increase capacity Improve mobility 	<ul style="list-style-type: none"> Construction & Engineering substantial for grade separation Maintenance may vary by area 	<ul style="list-style-type: none"> Medium-term
Implementation Periods:	Short-term: 1-5 years	Medium Term: 5-10 years	Long Term: 10+ years	

1. HIGHWAY (CONT'D)

Strategy	Roadway Type	Congestion Impacts	Costs & Other Impacts	Implementation Period
1a. Eliminate At-Grade Rail Crossings	Arterials	<ul style="list-style-type: none"> Improve mobility Increase traffic flow and improve safety 	<ul style="list-style-type: none"> Construction & Engineering costs 	<ul style="list-style-type: none"> Long-term
1b. Highway Widening by Adding Lanes Adds new highway lanes; traditional way to deal with congestion	All	<ul style="list-style-type: none"> Increase capacity Improve mobility 	<ul style="list-style-type: none"> Cost vary Can create environmental land and community impacts 	<ul style="list-style-type: none"> Long-term
1c. Add Connectivity Program Additional connectivity options can alleviate congestion.	All	<ul style="list-style-type: none"> Increase capacity Improve mobility 	<ul style="list-style-type: none"> Cost vary Can create environmental land and community impacts 	
2. TRANSIT				
2a. Reduce Transit Fares This encourages additional transit use, to the extent that high fares are a real barrier to transit. For MUMPO region, includes ozone alert days and event passes.	All	<ul style="list-style-type: none"> Reduce daily VMT Reduce congestion Increase transit ridership 	<ul style="list-style-type: none"> Lost revenue per rider Capital costs per passenger trip Operating costs per passenger trip likely decrease Operating subsidies needed to replace lost fare revenue Alternative financial arrangements need to be negotiated with donor agencies 	<ul style="list-style-type: none"> Short-term
2b. Increase Bus Route Coverage or Frequencies This provides better accessibility to transit to a greater share of the population. Increasing frequency makes transit more attractive to use.	All	<ul style="list-style-type: none"> Reduce daily VMT Decrease travel time Increase transit ridership 	<ul style="list-style-type: none"> Capital costs per passenger trip Increase in operating costs New bus purchases likely 	<ul style="list-style-type: none"> Short-term
Implementation Periods:	Short-term: 1-5 years	Medium Term: 5-10 years	Long Term: 10+ years	

2. TRANSIT (CONT'D)

Strategy	Roadway Type	Congestion Impacts	Costs & Other Impacts	Implementation Period
<p>2c. Implementing Park-and-Ride Lots Can be used in conjunction with managed lanes and/or express bus services. They are particularly helpful for encouraging managed lane use for longer distance commute trips.</p>	<ul style="list-style-type: none"> Freeway Major Arterial Travel Corridor 	<ul style="list-style-type: none"> Reduce regional VMT Increase mobility and transit efficiency 	<ul style="list-style-type: none"> Structure costs for transit stations 	<ul style="list-style-type: none"> Medium-term
<p>2d. Implement Rapid Transit This best serves dense urban centers where travelers can walk to their destinations. Rapid transit from suburban areas can sometimes be enhanced by providing park-and-ride lots.</p>	<ul style="list-style-type: none"> Travel Corridors 	<ul style="list-style-type: none"> Reduce daily VMT 	<ul style="list-style-type: none"> Capital costs per passenger New systems require large up-front capital outlays & ongoing sources of operating subsidies, in addition to funds that may be obtained from federal sources, under increasingly tight competition. 	<ul style="list-style-type: none"> Long-term
<p>2e. Install Bus Lanes This involves adding new lanes for bus travel only. Can include new park-and-ride lots.</p>	<ul style="list-style-type: none"> Travel Corridors 	<ul style="list-style-type: none"> Increase transit use and improve bus travel times 	<ul style="list-style-type: none"> New bus purchases likely Separate ROW costs Annual operations and enforcement Can create environmental and community impacts 	<ul style="list-style-type: none"> Medium-term
<p>2f. Transit Signal Prioritization Involves special treatment for transit at traffic signals. Signal preemption for rail and adjusting red or green phase for bus.</p>	<ul style="list-style-type: none"> Travel Corridors 	<ul style="list-style-type: none"> Improve transit travel time Increase transit use 	<ul style="list-style-type: none"> Operating and maintenance costs per signal Signalized intersections per mile costs variable 	<ul style="list-style-type: none"> Medium-term (typically incorporated into road projects)
<p>2g. Construct Additional Transit Center or Expand Existing Transit Center Involves construction of new or expansion of existing facilities utilized by transit passengers.</p>	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> Increase transit use Increase mobility and transit efficiency 	<ul style="list-style-type: none"> Administrative costs Increased revenue per passenger trip 	<ul style="list-style-type: none"> Medium-term to Long-term (longer term for new facilities)

Implementation Periods: Short-term: 1-5 years Medium Term: 5-10 years Long Term: 10+ years

2. TRANSIT (CONT'D)

Strategy	Roadway Type	Congestion Impacts	Costs & Other Impacts	Implementation Period
<p>2b. Construct Transit Only Interchange Provides direct connection to park and ride lots</p>	Freeway	<ul style="list-style-type: none"> • Increase transit use • Increase mobility and transit efficiency 	<ul style="list-style-type: none"> • Structure costs for station and interchange 	<ul style="list-style-type: none"> • Medium-term
<h3>3. TRANSPORTATION DEMAND MANAGEMENT</h3>				
<p>3a. Ridesharing Ridesharing programs are typically arranged/encouraged through employers or transportation management agencies (TMA), which provide ride-matching services. Ridesharing includes carpools, vanpools, and Guaranteed Ride Home programs.</p>	Travel sheds	<ul style="list-style-type: none"> • Reduce work VMT • Reduce SOV trips 	<ul style="list-style-type: none"> • Savings per carpool & vanpool riders • Costs per year per free parking space/trip provided • Administrative costs • Most cost-effective 	<ul style="list-style-type: none"> • Short-term
<p>3b. Congestion Pricing Motorists pay for use of certain roads and bridges. This includes use of traditional toll roads. In MUMPO region, also encompasses change in parking prices on certain days to encourage use of alternatives modes.</p>	Freeway	<ul style="list-style-type: none"> • Decrease VMT • Increase transit and non-motorized mode shares • Reduce delay • Reduce transit delay or increase transit travel times 	<ul style="list-style-type: none"> • Implementation and maintenance costs vary • Substantial capital investment required 	<ul style="list-style-type: none"> • Medium-term
<h3>4. INTELLIGENT TRANSPORTATION SYSTEM & TRANSPORTATION SYSTEM MANAGEMENT</h3>				
<p>4a. Traffic Signal Coordination This improves traffic flow and reduces emissions by minimizing stops on arterial streets.</p>	Arterials	<ul style="list-style-type: none"> • Improve travel times • Reduce the number of stops • Reduce vehicle delay and associated emissions 	<ul style="list-style-type: none"> • Operations and maintenance costs per signal • Signalized intersections per mile costs variable 	<ul style="list-style-type: none"> • Short-term
<p>4b. Reversible Travel Lanes These are appropriate where traffic flow is highly directional.</p>	Arterials	<ul style="list-style-type: none"> • Increase peak direction capacity • Reduce peak travel times • Improve mobility 	<ul style="list-style-type: none"> • Barrier separated costs per mile • Operation costs per mile • Maintenance costs vary • Typically requires median removal - safety impacts • Overhead signs confusing 	<ul style="list-style-type: none"> • Short-term
Implementation Periods:	Short-term: 1-5 years	Medium Term: 5-10 years	Long Term: 10+ years	

4. INTELLIGENT TRANSPORTATION SYSTEM & TRANSPORTATION SYSTEM MANAGEMENT (CONT'D)

Strategy	Roadway Type	Congestion Impacts	Costs & Other Impacts	Implementation Period
<p>4c. Incident Detection and Management This is an effective way to alleviate non-recurring congestion. Systems can include video monitoring, automated sensors, variable message signs, dispatch system, roving service patrol vehicles, and Incident Management Assistance Patrols (IMAP).</p>	<p>Freeway Major Arterial Travel Corridor</p>	<ul style="list-style-type: none"> • Reduce incident delay • Reduce travel time 	<ul style="list-style-type: none"> • Capital costs variable and substantial • Annual operating and maintenance costs 	<ul style="list-style-type: none"> • Short-term
<p>4d. Ramp Metering This allows freeways to operate at their optimal flow rates, thereby increasing travel speed and reducing collisions.</p>	<p>Freeway</p>	<ul style="list-style-type: none"> • Decrease travel time • Decrease incidents • Improve traffic flow on major facilities 	<ul style="list-style-type: none"> • Capital and operations & maintenance costs • Significant costs associated with enhancements to centralized control system • Can create congestion on arterials 	<ul style="list-style-type: none"> • Medium-term
<h3>5. ACCESS MANAGEMENT</h3>				
<p>5a. Left-Turn Restrictions Limits turning vehicles, which can impede traffic flow and are more likely to be involved in incidents. Can be restricted by time of day and involve construction of medians.</p>	<p>Arterial</p>	<ul style="list-style-type: none"> • Uses arterial capacity more efficiently • Improved mobility on facility • Improve travel times and decrease delay for through traffic 	<ul style="list-style-type: none"> • Implementation and maintenance costs vary; range from new signage and striping to more costly permanent median barriers and curbs 	<ul style="list-style-type: none"> • Short-term
<p>5b. Turn Lanes; Relocation of Driveways and Exit Ramps In some situations, increasing or modifying access to a property can be more beneficial than reducing access. Driveways are located such that traffic conflicts caused by ingress/egress are minimized.</p>	<p>Arterial</p>	<ul style="list-style-type: none"> • Uses arterial capacity more efficiently • Improved mobility and safety on facility • Improved travel times and reduced delay for all traffic 	<ul style="list-style-type: none"> • Additional ROW costs • Design, construction, and maintenance costs 	<ul style="list-style-type: none"> • Short-term
<p>Implementation Periods:</p>	<p>Short-term: 1-5 years</p>	<p>Medium Term: 5-10 years</p>	<p>Long Term: 10+ years</p>	

5. ACCESS MANAGEMENT (CONT'D)

Strategy	Roadway Type	Congestion Impacts	Costs & Other Impacts	Implementation Period
<p>5c. Interchange Modifications Involves decreasing weaving section on free-ways.</p>	Freeway	<ul style="list-style-type: none"> • Uses roadway capacity more efficiently • Improved mobility • Improved travel time and reduced delay for through traffic • Fewer incidents due to fewer conflict points 	<ul style="list-style-type: none"> • Design and construction costs 	<ul style="list-style-type: none"> • Short-term
<p>5d. Craft Policies that Govern Access in Corridors Can include driveway spacing and policies for new business approvals.</p>	Arterials Travel Corridor	<ul style="list-style-type: none"> • Uses arterial capacity more efficiently • Improved mobility • Improved travel time and reduced delay for through traffic 	<ul style="list-style-type: none"> • Design and construction costs during implementation • Long term impacts 	<ul style="list-style-type: none"> • Short-term
Implementation Periods:		Short-term: 1-5 years	Medium Term: 5-10 years	Long Term: 10+ years

APPENDIX D Environment

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D-1: Consultation Process Procedures

Mecklenburg-Union Metropolitan Planning Organization
2035 Long-Range Transportation Plan
Consultation Process Procedures

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) is committed to developing “a transportation system that preserves and enhances the natural and built environment.” If this goal is to be achieved, the preparation of the long-range transportation plan (LRTP) must be guided by a comprehensive analysis of potential environmental constraints.

The purpose of this document is to outline the procedures MUMPO will follow in order to achieve this goal by fulfilling and exceeding its responsibilities in relation to the Consultation process (23 CFR 450.322(g)) as it develops its *2035 Long-Range Transportation Plan*. While not a formal part of MUMPO’s adopted Public Involvement Plan (PIP), these procedures are in the spirit of that document, which seeks to make public involvement, in its broadest sense, a means by which high quality transportation planning is accomplished.

Communication Methods

The Consultation process involves many agencies with offices outside the Charlotte area. In order to be as effective as possible, our primary means of communicating with the resource agencies will be by e-mail; however, other means will be used if preferred by a specific agency, if e-mail contact is not possible, or if the nature of the correspondence requires it.

MUMPO maintains a website (www.mumpo.org) that reaches a wide audience and, due to the dispersed nature of agency locations, will be relied upon to post relevant information. This will allow for information to be reviewed at times other than traditional meetings. The website has been updated with a section devoted to the Consultation process, and can be found at: www.mumpo.org/2035_LRTP_RAC.htm. Hardcopies of any document will be provided on request.

Databases

- **Address List**

MUMPO will strive to develop and maintain an address list of all federal, state and local agencies responsible for land use management, natural resources, environmental protection, conservation and historic preservation. The purpose of this will be to ensure that our outreach is as comprehensive as possible.

- **Environmental Data**

All agencies on the address list will be contacted and requested to provide the latest maps, inventories, plans and strategies. This request will be made as early as possible to ensure that the LRTP's development is informed by the agencies' information from the outset. The data will be used in MUMPO's roadway project ranking process as staff and members of the Technical Coordinating Committee (TCC) compare the submitted information to the existing and proposed roadway network.

Outreach Efforts

There are several milestones in the preparation of an LRTP where the input of resource agencies will be crucial. MUMPO is committed to including the agencies at the following milestones:

- **LRTP Development Kick Off**

The PIP recommends that an Open House be held to begin the LRTP development effort. This event provides all concerned parties (resource agencies, public interest groups, the general public, etc.) with an opportunity to discuss significant issues and concerns before any substantive work on LRTP preparation has begun.

- **Roadway Project Ranking**

This is a technical analysis of roadway projects nominated for potential inclusion in the LRTP by MUMPO's member jurisdictions. The roadways are analyzed using the project ranking criteria adopted by the MPO (see Appendix A for details on the project ranking methodology). One criterion is entitled "Impacts on the Natural Environment," which attempts to gauge a project's potential environmental impact. Invitations will be extended to participate in the roadway project ranking process.

- **Final Project List Review**

The final project list is the result of the roadway project ranking process. It is likely that some project scopes, descriptions, and/or limits will have been changed as a result of the technical review. The list will be endorsed by the Technical Coordinating Committee (TCC) and MPO and therefore is the list from which the fiscally constrained LRTP will be developed. To the greatest extent possible, documentation of the scores assigned to the "Impacts on the Natural Environment" will be provided. A map of all projects will be available.

As this list constitutes the comprehensive list of potential LRTP projects, this review period will also provide MUMPO with the opportunity to discuss potential system-level mitigation strategies as per 23 CFR 450.322 (f)(7).

- **Final Scored Project List Review**

The technical analysis is not complete until the “Reduces Congestion” criterion (from the project ranking criteria) scores are assigned by the travel demand model. This review will provide the agencies with an opportunity to review the final, scored project list.

- **Draft Fiscally Constrained Project List Review**

After MUMPO develops its financial plan, it will assess its future revenue and cost assumptions against the project list and develop a draft project list which assigns projects to the LRTP’s horizon years.

- **Final Fiscally Constrained Project List Review**

The review of this list will take place in conjunction with the standard 30-day public comment period required for the LRTP.

On-Going Consultation

MUMPO recognizes that resource agencies have limited staff and resources, so it is important to note that while the above specific outreach efforts are important, other interaction with the resource agencies is welcomed. MUMPO’s website will be frequently updated with relevant information, allowing the agencies to analyze information at any time. Moreover, MUMPO encourages individual agencies to contact staff with questions, comments, concerns, etc. about any project.

D-2: Consultation Process Documentation

Mecklenburg-Union Metropolitan Planning Organization
2035 Long-Range Transportation Plan
Consultation Process Documentation

The information below documents MUMPO’s efforts to engage local, state and federal agencies involved with land use management, conservation, natural resources, environmental protection and historic preservation in the development of the 2035 Long-Range Transportation Plan. These efforts are being undertaken to satisfy the Consultation requirements as outlined in 23 CFR 450.322(g).

1. The MUMPO website was updated on **December 18, 2007** with a section on the 2035 Plan update. The section included a subsection entitled Resource Agency Consultation (RAC), and contained information that would assist those on MUMPO’s Consultation address lists with reviewing adopted documents. As of December 22, 2009 the RAC section included the following information:

- 2030 LRTP
 - 2030 LRTP Amendment II- May 2007
 - 2030 LRTP Amendment - September 2005
 - Project Horizon Year Maps
 - Goals & Objectives
 - 2007-2013 State Transportation Improvement Program (This was the TIP in effect at the time the information was posted.)
 - 2009-2015 State Transportation Improvement Program - Draft (The 2009-2015 TIP was in its “draft” stage at the time the information was posted.)
 - 2030 Charlotte Area Transit System Corridor System Plan
 - Mecklenburg-Union Thoroughfare Plan
 - Roadway Project Ranking Criteria
 - MUMPO Contact Information
 - 2035 LRTP Roadway Ranking Project List
 - Financially-constrained project lists based on varying revenue scenarios
2. A memo was sent to all agencies listed on the Local Consultation Address List and State & Federal Consultation Address List on **December 18, 2007**. This memo notified the agencies that MUMPO was beginning the effort to update the LRTP and requested their “participation in the development and review of our Plan.” A specific request was made for the agencies’ latest “adopted maps, inventories, plans and strategies.” The stated response deadline was January 18, 2008. The memo referenced MUMPO’s website and the information available in the RAC section.
 3. An e-mail was sent to all* parties on both Consultation address lists on **January 7, 2008** notifying them that MUMPO’s project ranking process would begin in the near future and that they were invited to participate. Prior to this date, the RAC section of the website was updated to include this same information. The e-mail stated that the agencies would be contacted as soon as meetings were scheduled.
 4. Southern Towns Meeting-**January 17, 2008**. This meeting allowed staff to meet with Mecklenburg County’s southern towns (Matthews, Mint Hill (absent), Pineville) and the County’s Land Use & Environmental Services Agency (LUESA) staff to review maps depicting the current networks along with environmental features.
 5. An email was sent on **January 25, 2008** to all agencies on our Local Consultation Address List and State & Federal Consultation Address List notifying them of the dates of MUMPO’s LRTP update kick-off meetings on February 21 (Mecklenburg) and February 28 (Union).
 6. An email was sent on **February 1, 2008** to all agencies on our Local Consultation Address List and State & Federal Consultation Address List notifying them of the dates of MUMPO’s project ranking meetings.
 7. A postcard was sent on **February 6, 2008** to all agencies on our Local Consultation Address List and State & Federal Consultation Address List notifying them of the dates of MUMPO’s LRTP update kick-off meetings on February 21 (Meck;enburg) and February 28 (Union).

8. A presentation was made to the Union County Planners group on **February 14, 2008**. Those in attendance were asked to mark up maps to indicate such items as, new or proposed residential subdivisions, new or proposed commercial developments, updated environmental information (natural and human environment), etc.
9. The two LRTP kick-off meetings were held on **Thursday, February 21 and Thursday, February 28, 2008**. The February 21 meeting was held in conjunction with the Gaston MPO and provided an opportunity to meet with three environmental agencies: USF&W; WRC; DWQ (Feb 28 meeting).
10. **June 4, 2008**: E-mailed resource agencies seeking their input on how best to review MUMPO's project list, which was endorsed at the May 21, 2008 MPO meeting.
11. **July 10, 2008**: Phone conversation with Suzanne Klimek, Director of Operations for the NC Ecosystem Enhancement Program (EEP). Discussed the basics of why the EEP was contacted as a part of MUMPO's Consultation and Mitigation efforts. Committed to meeting with EEP staff in August to review the project list, map and other pertinent LRTP-related material, as well as to review the MPO process and how EEP can assist in the LRTP development process, particularly with the Mitigation component.
12. **July 14, 2008**: A presentation was made to the Charlotte-Mecklenburg Planning Commission to discuss the LRTP and the Consultation requirements.
13. **July 31, 2008**: A meeting was held with EPA (Chris Militscher), US Fish & Wildlife Service (Marella Buncick) and the NC Wildlife Resources Commission (Marla Chambers) at the Charlotte-Mecklenburg Government Center. The purpose of this meeting was to:
 - Familiarize agencies with MUMPO's LRTP development
 - Introduce the full range of roadway projects that may go into the final LRTP
 - Obtain feedback on the agencies' concerns
 - Discuss MUMPO's roadway ranking process & LRTP development
 - Review of projects and environmental comments
 - Discuss of agencies' concernsThe EPA provided additional feedback in the form of a letter dated October 10, 2008.
14. **August 21, 2008**: Met with representatives of the Ecosystem Enhancement Program (EEP) of NC DENR. (Suzanne Klimek; Beth Harmon, James Stanfill) The primary purpose of the meeting was to discuss the required Mitigation element of the LRTP, but also to discuss the Consultation requirements. MPO staff conducted a Power Point presentation to introduce MUMPO (and MPOs in general) to the EEP. EEP staff discussed its role in the provision of mitigation for NCDOT projects.
15. **September 4, 2008**: Made presentation to Mecklenburg County's Environmental Policy Coordinating Council (EPCC). The EPCC is a citizen advisory council formed to provide advisory services to the Mecklenburg County Board of Commissioners, specifically with regard to compiling and prioritizing important and strategic environmental issues the advisory boards, City, County and Towns are facing and/or addressing within the County and is made up of the following representatives:

- Chair of the Air Quality Commission,
- Chair of the Waste Management Advisory Board,
- Chair of the Stormwater Advisory Committee,
- Chair of the Planning Commission,
- Chair of the Zoning Board of Adjustment,
- Chair of the Park and Recreation Commission, and
- Chair of the Building Development Commission.

Additionally, the EPCC consists of the following members by invitation:

- A representative of the Lake Norman Marine Commission,
- A representative of the Mt. Island Lake Marine Commission,
- A representative of the Lake Wylie Marine Commission,
- A representative of the Mecklenburg-Union Metropolitan Planning Organization,
- Chair of the Charlotte-Mecklenburg Utilities Committee,
- Chair of the Transit Services Advisory Committee,
- A representative from the City of Charlotte,
- A representative from the Town of Huntersville,
- A representative from the Town of Matthews,
- A representative from the Town of Cornelius,
- A representative from the Town of Pineville,
- A representative from the Town of Davidson, and
- A representative from the Town of Mint Hill

- 16. June 18, 2009:** An email was sent to all parties on MUMPO's Resource Agency Consultation (RAC) distribution list notifying them of the upcoming release of the final ranked project list.
- 17. July 6, 2009:** Email sent to all parties on MUMPO's Resource Agency Consultation (RAC) distribution list notifying them that the initial ranked project list was available for review. The email included a link to MUMPO's website where the list could be viewed; the ranking methodology was also attached.
- 18. August 7, 2009:** Email sent to all parties on MUMPO's Resource Agency Consultation (RAC) distribution list notifying them that draft financially-constrained roadway project lists were available for review. The lists and maps provided information on road projects being considered as a part of three scenarios being analyzed. The first scenario assumed that no additional revenue will be available, the second scenario assumed 1/8 (0.125) of a cent of new revenue for roadways, and the third scenario assumed 1/4 (0.25) of a cent of new revenue for roadways. Comments were requested by September 2, 2009.
- 19. October 22, 2009:** Email sent to all parties on MUMPO's Resource Agency Consultation (RAC) distribution list notifying them that MUMPO had updated its long-range transportation plan (LRTP) update information by preparing maps that overlaid draft 2035 LRTP roadway networks on the environmental features map.

Comments Received

- US EPA 10-10-08
- LUESA/EPCC 11-9-09
- US Fish & Wildlife 11-13-09

Regularly Scheduled Staff Meetings

In addition to the above correspondence, MUMPO held monthly staff-level meetings of interested and affected parties who were a part of the LRTP development process. This group met the third Wednesday of each month between May 2009 and January 2010 to review the process, solicit peer review, and manage the plan document development. The invited agencies included:

- Charlotte Department of Transportation
- NCDOT-Transportation Planning Branch
- Charlotte Area Transit System
- Union County Public Works
- North Carolina Turnpike Authority
- Mecklenburg County Parks and Recreation
- Federal Highway Administration
- Town of Huntersville
- City of Monroe

Members of this group wrote and reviewed all sections of the plan, but did not specifically address environmental issues with projects. Rather, the staff members incorporated these issues into the overall plan.

D-3: Comments Received (pages D-8 through D-15)

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Raleigh Office
Terry Sanford Federal Courthouse
310 New Bern Avenue
Raleigh, North Carolina 27601**

October 10, 2008

Mr. Robert W. Cook, AICP
Secretary, Mecklenburg-Union Metropolitan Planning Organization
600 E. Fourth Street
Charlotte, North Carolina 28202

RE: MUMPO 2035 LRTP Consultation Meeting and Review of the Project
Environmental Ranking Factors

Dear Mr. Cook:

This letter is in response to MUMPO's request for review and technical feedback on the Draft 2035 LRTP Roadway Ranking Project List and accompanying 'Environmental Features Map', dated 7/31/08. On July 31, 2008, The U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife (FWS) and N.C. Wildlife Resources Commission (WRC) met with you and your staff to discuss the Draft 2035 Roadway Ranking Project List. Generally, EPA's believes the development of a ranking list and the use of environmental criteria is an excellent beginning to developing a comprehensive LRTP that addresses potentially critical environmental issues as early in the planning process as possible. Please consider that these 'early planning technical comments' as informal, and that they do not officially represent EPA's legal or regulatory position on any proposed project under the National Environmental Policy Act (NEPA), Clean Water Act (CWA), Clean Air Act (CAA), etc. EPA's has several specific technical comments to offer regarding the Environmental Features Map:

1. The Environmental Features Map might also include and consider streams and rivers that are listed on the Clean Water Act Section 303(d) list for impaired waters. Further information can be found at http://h2o.enr.state.nc.us/tmdl/General_303d.htm
2. The Environmental Features Map should make the distinction regarding the classification of the 'hatched' water supply watershed (e.g., DWQ classifications, WS-I, II, III, IV, critical areas, protected areas, etc.).
3. The Environmental Features Map might also identify, where possible, farmlands that are listed on the N.C. Century Farm List (e.g., Mecklenburg County shows at

least 15 potential properties; Union County shows 12 potential properties). More information can be found at <http://www.agr.state.nc.us/paffairs/Century/index.htm>

4. MUMPO may also wish to consider the local and state sponsored voluntary Agricultural Districts in the Environmental Features Map. More information on this program can also be found with the N.C. State Department of Agriculture and Consumer Service's website.

From a general 'cursory' review of the hundreds of projects shown in the list and on the Environmental Features Map, EPA has some environmental concerns for a few of the projects on new location that traverse the Goose and Crooked Creek Watersheds (e.g., Project #175). One of the most difficult issues involving this early environmental input is that many of the projects do not have a full description of the scope of the project and the general description of its purpose and need. Ms. Loretta Barren of Federal Highway Administration requested that EPA evaluate this Roadway Ranking Project List from a 'system network' perspective. Unfortunately, without traffic data or the specific transportation information needed to understand the discrete connectivity and system linkage aspects of each project, it is not possible for EPA to discern what is necessary to the overall transportation system network. In concert with the general priority of SAFETEA-LU, EPA would recommend that the projects that have the greatest congestion and safety concerns on the major Interstate routes (e.g., I-485 and I-77) would be given the highest priority and ranking. From an air quality standpoint, EPA would recommend that additional priority and weight be given to those potential projects that reduce vehicle miles traveled (vmt). Conversely, EPA would have some of the most 'environmental concerns' for the projects that do not substantially improve congestion and in actuality may induce traffic (e.g., R-0211EC, New Interchange at Weddington Road).

For clarity purposes, the type of project (e.g., New location versus widening) could be shown by line color differentiation between the two major types of projects and 'other improvement' projects (e.g., 'Bike-ped' improvements). All of the ranked projects shown on the Environmental Features Map are shown as 'rust colored'.

Another aid to identifying projects that may pose more environmental concerns than others includes a 'pre-scoping' designation. For example, minor roadway improvements (e.g., Shoulder widening) less than ½ mile that involve bicycle lane accommodations would typically not require the preparation of an Environmental Assessment under NEPA. These minor improvement projects could be shown on another 'tiered' type of project planning and ranking map.

In addition to the environmental concerns for the numerous projects in the Goose and Crooked Creek Watershed, EPA also has environmental concerns for those projects included within the 'hatched' water supply watersheds. These designated water supply areas are primarily in Union County north and south of the Town of Monroe. EPA notes that some of these projects are appropriately ranked in the '200's and '300's (i.e., Given less priority).

From an overall project corridor selection, EPA has identified some potential projects that could be very difficult to ‘permit’. For example, ranked project #69, Eastern Circumferential (new location 4-lane facility) from Rocky River Road to Pence Road is shown as going through a designated park (i.e., Potentially a Section 4(f) resource under the Department of Transportation Act of 1966). The impacts on the Natural Environment Score indicate a –1 for this project. By EPA’s estimate, a new, 4-lane divided facility through a local, county, or State park should potentially receive a –3 or –4 score. There may be other examples not highlighted as having a ‘score conflict’ (Such as #66 and #67) that certain environmental agencies would have a serious environmental problem with that are not shown in the project tables. Without specific traffic numbers and other system network information, all of the Eastern Circumferential projects (#63 to #70) appear to have considerable environmental impacts to both the human and natural environment. The Eastern Circumferential projects appear to be a close parallel inner loop within I-485. EPA does not directly understand the system network purpose and need for this parallel multi-lane inner loop. Until other sections of I-485 are improved or widened, EPA does not understand the ‘purpose and need’ for an inner loop and how it functions in the overall transportation system. Project #68 appears to ‘dead-end’ into Mallard Creek Church Road. It is not possible to discern if Mallard Creek Church Road is a two-lane or multi-lane facility. Similarly, EPA cannot fully understand the Statesville Road widening projects (#281-283) when this existing roadway very closely parallels I-77 for more than 10 miles.

From a general analysis standpoint, EPA estimates that approximately 12 projects out of 341 received a –3 or –4 score on the impacts to the natural environment. This represents a ‘severe’ environmental scoring for approximately 3.5% of the proposed projects. EPA would estimate that this percentage is potentially optimistic. Furthermore, if one critical segment of a project received a –3 or –4 score, this could translate to substantial environmental concerns for other segments where the environmental scores were not as low. The roadway project list does not address the issues of independent utility for these segments and the potential limitation of alternatives from one ‘failed’ segment. Again using the Eastern Circumferential projects as an example, if Project #69 ‘fails environmentally’, segments #68 and #70 may also ‘fail’. There may be no environmentally acceptable alternatives on either end of Project #69 if this project cannot be permitted.

Another example of the difficulty in accurately scoring and ranking projects strictly from an impact on the natural environment basis is the ‘human impact’ consideration and the indirect and cumulative impacts to the natural environment. As you are aware, Project #175, the Monroe Bypass/Connector projects have been in planning for more than 15 years. This project scored a –2 on the impacts to the natural environment. Major portions of this project traverse a water supply watershed and the Goose and Crooked Creek Watersheds. Long-term water quality impacts and potential indirect and cumulative impacts to endangered species may not be fully incorporated into the current ranking criteria and scoring system.

Many of the proposed projects include additional or widened paved shoulders to accommodate bicycles. EPA is generally very supportive of multi-modal options and bicycle improvements. However, the current map and project listing does not include the 'approved' bicycle-pedestrian plan for the MUMPO area and it is very difficult to estimate how the overall 'bicycle system' is proposed to be comprehensively improved.

EPA believes that MUMPO should update the current scoring criteria to include other environmental factors such as 'prime farmlands' and Section 303(d) listed streams. As explained during the July 31, 2008, meeting, it is a potential violation of the Clean Water Act to further degrade a Section 303(d) listed stream. Even with the use of 'Best Management Practices' (BMPs), NCDOT has conducted recent research through North Carolina State University that indicates there are severe soil erosion and sediment losses from Piedmont roadway projects (Citation: *Dr. Dan Line, NCSU, InterAgency Coordination Meeting: Pre and Post Construction Water Quality Research, 9/25/08*). This research suggests that as much as 18.5 tons/acre can be lost even with the use of BMPs. For Section 303(d) listed streams that are impaired for turbidity, these sediment losses into streams can significantly degrade jurisdictional waters of the U.S. that are already impaired. EPA also recommends that the existing project list and the environmental scoring be re-evaluated once these additional environmental factors, such as Section 303(d) listed streams, are detailed on the Environmental Features Map and further evaluated by you and your staff.

Once MUMPO has had an opportunity to review and consider these technical comments, I would be pleased to a follow-up meeting to further discuss the issues or any questions you may have. EPA recognizes that funding constraints and other potential project limitations were not included in this environmental project ranking effort and this could change future planning priorities. Overall, the graphic quality of the Ranking Project List 'Environmental Features Map' is excellent. I appreciate the opportunity to comment and look forward to future coordination with you and your staff. Please feel free to call me at 919-856-4206. Thank you.

Sincerely,



Christopher A. Militscher, REM, CHMM
Environmental Scientist

cc: L. Barren, FHWA
J. Hunkins, NCDOT



MECKLENBURG COUNTY
Land Use and Environmental Services Agency

November 9, 2009

Robert W. Cook, AICP , Secretary
Mecklenburg-Union Metropolitan Planning Organization
600 E. Fourth Street
Charlotte, North Carolina 28202
rwcook@ci.charlotte.nc.us

Re: MUMPO 2035 Long-Range Transportation Plan Update

Dear Mr. Cook:

Representatives of the Mecklenburg County Land Use and Environmental Services Agency (LUESA) have reviewed the above referenced project for the MUMP 2035 Long-Range Transportation Plan Update. A survey of the LUESA staff regarding your project indicates the following information you may want to consider in relation to this project:

The Air Quality program does not have any comment or additional information to that provided during and within your meeting structure. Groundwater Services and Solid Waste do not have any comment.

Storm Water

Goose Creek and Sixmile Creek are home to the Carolina heelsplitter (*Lasmigona decorata*), that has been listed as a federally endangered species since 1993. A Water Quality Management Plan has been established by the State of North Carolina for the Goose Creek Watershed. The proposed Roadway Ranking Project List calls out Fairview Road (NC 218) (Mint Hill/Union County) from Brief Road to US 601 for widening (4), a median, and bike lanes. This stretch of NC 218 crosses Goose Creek and tributaries to Goose Creek approximately nine times. Other planned road improvements cross Goose Creek and tributaries approximately another 15 times. With regards to water quality impacts and the Carolina heelsplitter, improvements should not be made to NC 218 or other roads within the Goose Creek Watershed or the Sixmile Creek Watershed. If you have any questions, please contact Heather Sorensen at 704-432-1969.

If you have any additional questions, please do not hesitate to contact me at (704) 336-5597.

Respectfully,
Heidi Pruess, CEP
Environmental Policy Administrator

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From: Marella_Buncick@fws.gov
 Sent: Friday, November 13, 2009 12:40 PM
 To: Cook, Robert (Planning)
 Subject: Re: MUMPO Long-Range Transportation Plan Update

Bob,

I finally had time to look at the maps of the fiscally constrained projects. Is it safe to assume the most likely set to be selected will be the ones with no new funding? In any case, I looked at that map and the "with sales tax" map and there are no projects that appear to be of great concern to the FWS, with the obvious exception of the Monroe/By-pass and Connector and we're fully engaged on that one.

Thanks for the opportunity to review and comment. If you should have specific questions about individual projects or if I missed anything about the overall program, please let me know.

marella

marella buncick
 USFWS
 160 Zillicoa St.
 Asheville, NC 28801
 828-258-3939 ext 237

People don't resist change, they resist being changed.

"Cook, Robert (Planning)" <rwcook@ci.charlotte.nc.us>

10/22/2009 01:27 PM

To "Barren, Loretta (FHWA)" <loretta.barren@fhwa.dot.gov>, "Basham, Stuart" <sbasham@ci.charlotte.nc.us>, "Bean, Douglas" <DBean@ci.charlotte.nc.us>, "Black, Richard (Union Planning)" <rblack@co.union.nc.us>, "Blackburn, Lauren (Davidson Historic)" <lblackburn@ci.davidson.nc.us>, "Boothe, Laura" <Laura.Boothe@ncmail.net>, "Brooks, Vicky (Mineral Springs)" <mrvickybrooks@aol.com>, "Buncick, Marella (US FWS)" <Marella_buncick@fws.gov>, "Burke, Neil" <nburke@ci.mooreville.nc.us>, "Byrd, Anganette" <Anganette.Byrd@mecklenburgcountync.gov>, "Cable, Dave (CLC)" <dave@catawbalands.org>, "Chambers, Marla (NC WRC)" <marla.chambers@ctc.net>, "Christy Shumate" <christy.shumate@ncturnpike.org>, "Clark, Cheri (Lake Park)" <cheri.clark@lakeparknc.gov>, "Clark, Julie" <Julie.Clark@mecklenburgcountync.gov>, "Conrad, Phil (CRMPO)" <pconrad@mblsolution.com>, "Cunningham, David (UC Env Health)" <davidc@co.union.nc.us>, Davidson Lands Conservancy

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cc

Subject MUMPO Long-Range Transportation Plan Update

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Resource Agency Consultation Partner:

The Mecklenburg-Union Metropolitan Planning Organization (MUMPO) has updated its long-range transportation plan (LRTP) update information by preparing maps that overlay draft 2035 LRTP roadway networks on our environmental features map. These new maps will make reviewing our draft project lists much easier. The new maps can be found by clicking on this link: [Maps](#)

The original project lists and accompanying maps can be viewed by clicking on this link: [Project Lists & Maps](#).
Hardcopies of all maps are available upon request.

The lists and maps provide information on road projects being considered as a part of three scenarios now being analyzed. The first scenario assumes that no additional revenue will be available, the second scenario assumes 1/8 (0.125) of a cent of new revenue for roadways, and the third scenario assumes 1/4 (0.25) of a cent of new revenue for roadways. It is anticipated that the MPO will act on a specific scenario on November 18, 2009.

A request for comments on the projects associated with the draft scenarios was made in August, and a deadline of September 2, 2009 was established. Because of the additional information that may make your review easier, the comment period has been reopened and any comments you have would be appreciated by November 11, 2009.

MUMPO staff is available to meet with you to review the draft lists to discuss them in greater detail. Please contact Robert Cook to make the necessary arrangements.

Please call the number below if you have any questions.

Robert W. Cook, AICP
Secretary
Mecklenburg-Union Metropolitan Planning Organization
600 E. Fourth Street
Charlotte, North Carolina 28202
704-336-8643

APPENDIX E
MPO Resolution Adopting Plan
March 24, 2010

**A RESOLUTION ADOPTING THE 2035 LONG-RANGE
TRANSPORTATION PLAN FOR THE MECKLENBURG-UNION METROPOLITAN
PLANNING ORGANIZATION**

A motion was made by Dumont Clarke and seconded by MPO Member James Taylor for the adoption of the following resolution, and upon being put to a vote was duly adopted.

WHEREAS, the Safe, Accountable, Flexible, Efficient Transportation Equity Act-A Legacy for Users (SAFETEA-LU) requires all Metropolitan Planning Organizations to develop and maintain a Long-Range Transportation Plan and; and

WHEREAS, the Long-Range Transportation Plan must address all modes of transportation in an urban area, have a horizon year of at least 20 years, and be financially constrained (23 CFR Part 450.322); and


WHEREAS, the 2035 Long Range Transportation Plan for the Mecklenburg-Union Metropolitan Planning Organization (MUMPO) has been found to be in conformance with the State Implementation Plan for air quality; and

WHEREAS, the 2035 Long Range Transportation Plan and the Conformity Analysis and Determination Report for MUMPO is based on the latest planning assumptions and transportation demand model with a horizon year of 2035; and

WHEREAS, the MUMPO 2035 Long-Range Transportation Plan and the Conformity Analysis and Determination Report were reviewed by the general public in accordance with the MUMPO Public Participation Policy.

NOW THEREFORE, be it resolved that the Mecklenburg-Union Metropolitan Planning Organization approves the 2035 Long-Range Transportation Plan.

I, Ted Biggers, MUMPO Chairman, do hereby certify that the above is a true and correct copy of an excerpt from the minutes of a meeting of the Mecklenburg-Union Metropolitan Planning Organization duly held on the 24th day of March 2010.


Ted Biggers, Chairman


Robert W. Cook, Secretary