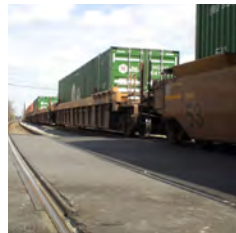
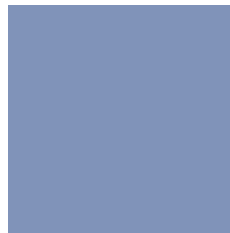
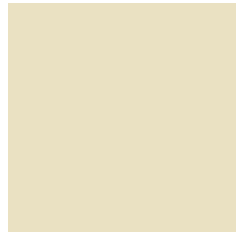
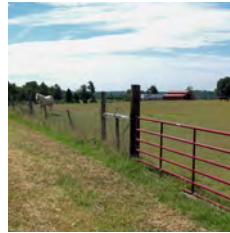
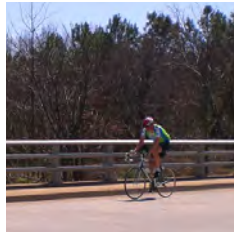


2045 MTP

METROPOLITAN TRANSPORTATION PLAN



2045 MTP

METROPOLITAN TRANSPORTATION PLAN



Prepared for

GASTON-CLEVELAND-LINCOLN



Prepared by

RS&H



RESOLUTION ADOPTING AMENDMENTS TO THE 2045 METROPOLITAN TRANSPORTATION PLAN (MTP)

WHEREAS, the Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) and the North Carolina Department of Transportation (NCDOT) are actively involved in transportation planning for the Gaston-Cleveland-Lincoln Urban Area; and

WHEREAS, the GCLMPO Board has found that the Metropolitan Planning Organization is conducting transportation planning in a continuous, cooperative, and comprehensive manner in accordance with 23 CFR Part 450.322; and

WHEREAS, the GCLMPO has an existing 2045 MTP adopted in March 2018 and amended on October 25, 2018; and

WHEREAS, the GCLMPO Technical Coordinating Committee (TCC) and the MPO Board have prepared additional amendments to the 2045 MTP for the MPO; and

WHEREAS, it is recognized that the proper movement of traffic within and through the GCLMPO area is a highly desirable element of the MTP for the orderly growth and development of the Urban Area; and

WHEREAS, after the full study of the updated MTP, the Board of the GCLMPO finds the 2045 MTP meets the goals and objectives for the Gaston-Cleveland-Lincoln MPO Urban Area; and

WHEREAS, after the full study of the amended MTP, the MPO Board finds the plan to be compliant with the requirements of the Fixing America's Surface Transportation (FAST) Act; and

WHEREAS, the MTP has at least a 20-year horizon year and is fiscally constrained as required by 23 CFR Part 450.322; and

WHEREAS, the public has had the opportunity to review and comment on the amendments to the 2045 MTP through public meetings and comment period;

NOW, THEREFORE BE IT RESOLVED, by the GCLMPO Board that the amendments to the 2045 Metropolitan Transportation Plan (MTP) for the Gaston-Cleveland-Lincoln Metropolitan Planning Organization be adopted on this the 23rd day of January, 2020.

Richard Turner, GCLMPO Board Chairman
Gaston-Cleveland-Lincoln MPO

ATTESTED:



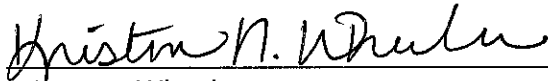
Randi P. Gates, AICP, Principal Transportation Planner
Gaston-Cleveland-Lincoln MPO Administrator

Resolution adopted upon a motion of Mr. Ervin, seconded
by Mr. McCorkle, by a vote of the majority of the Gaston-Cleveland-Lincoln MPO
Board.

North Carolina
Gaston County

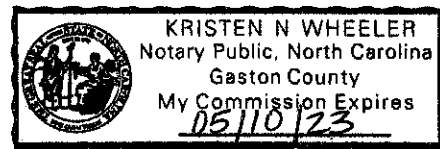
I, Kristen N. Wheeler, a Notary Public for said County and State, do hereby certify that Richard
Turner personally appeared before me on this the 23 day of January, 2020, and acknowledge
the due execution of the foregoing instrument.

Witness my hand and official seal, this the 23 day of January, 2020.



Kristen N. Wheeler
Notary Public

My Commission expires May 10, 2023.





RESOLUTION FINDING THE GASTON-CLEVELAND-LINCOLN METROPOLITAN PLANNING ORGANIZATION (GCLMPO) AMENDED 2045 METROPOLITAN TRANSPORTATION PLAN AND THE 2020-2024 TRANSPORTATION IMPROVEMENT PROGRAM IN COMPLIANCE WITH THE PROVISIONS OF THE CLEAN AIR ACT AMENDMENTS OF 1990 AND THE FIXING AMERICA'S SURFACE TRANSPORTATION (FAST) ACT

WHEREAS, the GCLMPO Board is the duly recognized decision making body of the 3-C transportation planning process for the Gaston-Cleveland-Lincoln MPO; and

WHEREAS, the GCLMPO amended 2045 Metropolitan Transportation Plan meets the planning requirements of 23 CFR Part 450.322; and

WHEREAS, the 2020-2024 Transportation Improvement Program is a direct subset of the 2045 Metropolitan Transportation Plan; and

WHEREAS, the United States Environmental Protection Agency (USEPA) designated the GCLMPO as a moderate nonattainment area for the prior 1997 8-hour ozone standard on June 15, 2004, and due to improved air quality in the region was re-designated as a maintenance area on January 2, 2014; and

WHEREAS, the USEPA designated GCLMPO as a marginal nonattainment area for the 2008 8-hour ozone standard on July 20, 2012, and due to improved air quality in the region was re-designated as a maintenance area on August 27, 2015; and

WHEREAS, the transportation conformity analysis of the amended 2045 MTP is based on the most recent estimates of population, employment, travel, and congestion; and

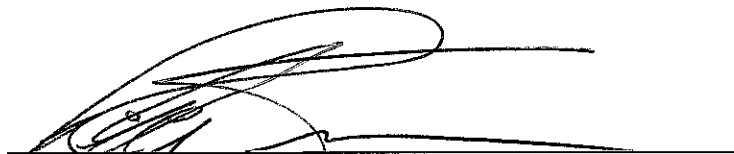
WHEREAS, the amended 2045 MTP is financially constrained; and

WHEREAS, there are no transportation control measures in the North Carolina State Implementation Plan (SIP) that pertain to the GCLMPO area; and


WHEREAS, the most recent vehicle emissions model was used to prepared the quantitative emissions analysis; and

WHEREAS, those projects and programs included in the amended 2045 MTP contribute to annual emissions reductions as shown by the quantitative emissions analysis;

NOW, THEREFORE BE IT RESOLVED, that the GCLMPO Board finds that both the amended 2045 Metropolitan Transportation Plan and the 2020-2024 Transportation Improvement Program conform to the purpose of the North Carolina State Implementation Plan in accordance with Clean Air Act as Amended (CAAA) and the FAST Act.


Richard Turner, GCLMPO Board Chairman
Gaston-Cleveland-Lincoln MPO

ATTESTED:



Randi P. Gates, AICP, Principal Transportation Planner
Gaston-Cleveland-Lincoln MPO Administrator

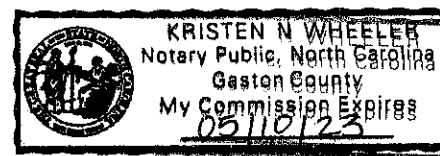
Resolution adopted upon a motion of Mr. Permenter, seconded
by Mr. Ervin, by a vote of the majority of the Gaston-Cleveland-Lincoln MPO
Board.

North Carolina
Gaston County

I, Kristen N. Wheeler, a Notary Public for said County and State, do hereby certify that Richard
Turner personally appeared before me on this the 23 day of January, 2020, and acknowledge
the due execution of the foregoing instrument.

Witness my hand and official seal, this the 23 day of January, 2020.


Kristen N. Wheeler
Notary Public



My Commission expires May 10, 2023.

Gaston-Cleveland-Lincoln MPO Board

2018 MEMBERSHIP ROSTER

REPRESENTING	NAME	TITLE
Belmont	Richard Turner	Council Member
	Martha Stowe	Council Member
Bessemer City	Becky Smith	Mayor
	Joe Will	Mayor Pro Tem
Boiling Springs	Cliff Hamrick	Commissioner
Cherryville	Henry L. Beam III	Mayor
	Jill Puett	Council Member
Cramerton	Demetrios Koutsoupas	Commissioner
	Donald Rice	Commissioner
Dallas	Rick Coleman	Mayor
Gastonia	David Humphries	Council Member
	James Gallagher	Council Member
	Todd Pierceall	Mayor Pro Tem
Kings Mountain	Scott Neisler	Mayor
	Ketith Miller	Council Member
Lincolnton	Martin Eaddy	Council Member
Lowell	Ken Ervin	Council Member
	Phil Bonham	Council Member
Mount Holly	Perry Toomey	Council Member
	Charles McCorkle	Council Member
Ranlo	Robin Conner	Commissioner
Shelby	Dicky Amaya	Council Member
	Eric Hendrick	Council Member
Stanley	Danny Sparrow	Mayor Pro Tem
Cleveland County	Johnny Hutchins	Commissioner
	Ronnie Worley	Commissioner
Gaston County	Allen Fraley	Commissioner
	Ronnie Worley	Commissioner
Lincoln County	Richard Permenter	Commissioner
	Martin Oakes	Commissioner
NCDOT	John Pope	NCDOT Div 12 Board Member

Gaston-Cleveland-Lincoln MPO Technical Coordinating Committee

2018 MEMBERSHIP ROSTER

AGENCY	NAME	TITLE
Belmont	Alex Robinson	Senior Planner
	Shelley DeHart	Planning Director
Bessemer City	James Inman	City Manager
	Josh Ross	Economic Development Officer
Boiling Springs	Scott Dadson	Interim Town Manager
Cherryville	Ben Blackburn	City Manager
	Jeff Hawkins	Planning Director
Cramerton	Dave Pettine	Director of Planning
	David Pugh	Town Manager
Dallas	Tiffany Faro	Development Services Director
	Maria Stroupe	Town Manager
Gastonia - Planning	Jason Thompson	Director of Planning
	Jana McMakin	Planner II
Gastonia - Engineering	Rusty Bost	Director, City Engineering
	Gregory Moyer	Civil Engineer II
Gastonia - Economic Development	Kristy Crisp	Economic Development Director
	Phil Boggan	Economic Development Specialist
Kings Mountain	Jonathan Wells	Interim Planning Director
Lincolnton	Laura Elam	Planning Director
	Brett Hicks	Zoning Administrator
Lowell	Kevin Krouse	City Manager
Mount Holly	Brian DuPont	Planner
	Jonathan Wilson	Planner
Ranlo	Tim Anderson	Town Administrator (Interim)
	Tracey Smith	Town Clerk
Shelby	Walter Scharer	Planning Director
	Ben Yarboro	City Engineer

Gaston-Cleveland-Lincoln MPO Technical Coordinating Committee (Continued)

2018 MEMBERSHIP ROSTER

AGENCY	NAME	TITLE
Stanley	Heath Jenkins	Town Manager
	Catherine Greder	Town Clerk
Cleveland County	Chris Martin	Planning Director
	Henry Earle	Planner
Gaston County	David Williams, AICP	Planning Director
	Willie King	Planner III
Lincoln County	Andrew Bryant, AICP	Planning Director
	Jordan Tubbs	Planner II
Gastonia Transit	Cindy Forrester	Transportation Services Administrator
	Kristi Davis	Grants Manager
Gaston County ACCESS	Cheree Wilson	Transportation Coordinator
	Michael Coone	Administrator - Adult & Aging Services
Transportation Administration of Cleveland County	Bob Davis	Director
Transportation Lincoln County	Ron Rombs	Director
	Kristal Ford	Transportation Manager
Cleveland County Economic Development Partnership	Kristin Reese	Executive Vice President
	Beth Norman	Director of Business Services
Gaston County Economic Development Commission	Alisha Sheets Barnes	Economic Development Specialist
	Malissa Gordon	Existing Industry Manager
Lincoln Economic Development Association	Kara Brown	Account Services Manager
	Cliff Brumfield	Executive Director
NCDOT - Transportation Planning Division	Andy Bailey	GCLMPO Coordinator
	Brian Wert	Group Supervisor
NCDOT - Division 12	Anil Panicker	Planning Engineer
	Jackie McSwain, PE	Project Manager
NCDOT - Public Transportation Division	Phillip Vereen	Mobility Development Specialist

*Prepared by the Gaston-Cleveland-Lincoln Metropolitan
Planning Organization Technical Coordinating Commit-
tee, the GCLMPO Staff, and the City of Gastonia Planning
Department Staff*

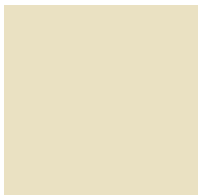
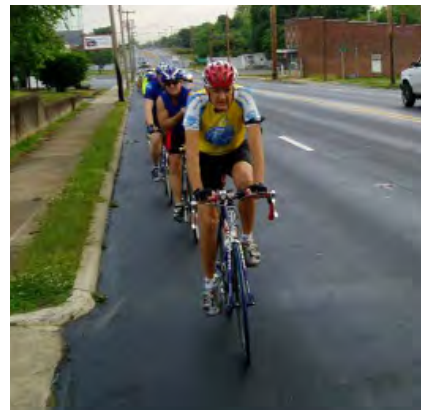
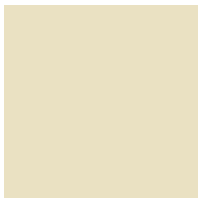


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A large, diverse crowd of people is gathered in a city square, filling the foreground and middle ground. In the background, a grand classical building with a pediment and six tall columns stands prominently. The scene is set on a sunny day, with people wearing summer attire like hats, sunglasses, and t-shirts. Various colorful umbrellas and festival banners are visible, suggesting a lively outdoor event.

Figure 1-1. North Carolina Metropolitan and Rural Planning Organizations With NCDOT Division Boundaries



General Requirements

1. **Findings** - *It is in the national interest to encourage and promote the safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight and foster economic growth and development within and through urbanized areas, while minimizing transportation-related fuel consumption and air pollution.*
2. **Development of plans and programs** - *To accomplish the objective stated in paragraph (1), metropolitan planning organizations designated under subsection (b), in cooperation with the State and public transit operators, shall develop transportation plans and programs for urbanized areas of the State.*
3. **Contents** - *The plans and programs for each metropolitan area shall provide for the development and integrated management and operation of transportation systems and facilities (including pedestrian walkways and bicycle transportation facilities) that will function as an intermodal transportation system for the metropolitan area and as an integral part of an intermodal transportation system for the State and the United States.*
4. **Process of development** - *The process for developing the plans and programs shall provide for consideration of all modes of transportation and shall be continuing, cooperative, and comprehensive to the degree appropriate, based on the complexity of the transportation problems to be addressed."*



As required by federal law, the 3-C process in each urban area is carried out by its Metropolitan Planning Organization. A Memorandum of Understanding (MOU) signed by the participating local governing bodies as well as NCDOT and Federal Highway Administration (FHWA), established the specific framework for how each MPO operates.

On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act into law. This federal law serves to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act funds surface transportation programs at over \$305 billion through FY 2020.



Administered by the Federal Highway Administration (FHWA), the Fast Act promises the following:

- *Improves mobility on America's highways*

The FAST Act establishes and funds new programs to support critical transportation projects to ease congestion and facilitate the movement of freight on the Interstate System and other major roads. Examples include developing a new National Multi-modal Freight Policy, apportioning funding through a new National Highway Freight Program, and authorizing a new discretionary grant program for Nationally Significant Freight and Highway Projects (FASTLANE Grants).

- *Creates jobs and supports economic growth*

The FAST Act authorizes \$226.3 billion in Federal funding for FY 2016 through 2020 for road, bridge, bicycling, and walking improvements. In addition, the FAST Act includes a number of provisions designed to improve freight movement in support of national goals.

- *Accelerates project delivery and promotes innovation*

Building on the reforms of MAP-21 and FHWA's Every Day Counts initiative, the FAST Act incorporates changes aimed at ensuring the timely delivery of transportation projects. These changes will improve innovation and efficiency in the development of projects, through the planning and environmental review process, to project delivery.

MTP Requirements

Each of the nineteen (19) North Carolina MPOs, in cooperation with the North Carolina Department of Transportation (NCDOT), shall develop a Metropolitan Transportation Plan (MTP). The MTP is a comprehensive plan that defines a transportation network that will serve both present and projected volumes of vehicular traffic and transit use in and around the urban area.



The MTP is based on the most accurate and complete information available including, but not limited to, population and economic development growth and land development patterns in and around the urban area. The MTP shall also provide for the safe and effective use of streets and highways through such means as parking regulations, signal systems, traffic signs, markings, and other devices.

Metropolitan Transportation Plans shall include:

- Description of the transportation system performance measures and respective performance targets.
- System performance report and subsequent updates evaluating the condition and performance of the transportation system progress achieved by the MPO in meeting the performance targets in comparison with system performance recorded in previous reports.
- For MPOs that voluntarily elect to develop multiple scenarios, an analysis of how the preferred scenario improves transportation system conditions and performance.

Additionally, the FAST Act requires the planning process to consider projects/strategies to: improve the resilience and reliability of the transportation system, stormwater mitigation, and enhance travel and tourism.

Optional Scenario Development

MPOs that choose to develop scenarios are encouraged to consider:

- Potential regional investment strategies for the planning horizon
- Assumed distribution of population and employment
- A scenario that maintains baseline conditions for the transportation system performance measures
- A scenario that improves the baseline conditions for as many of the transportation system performance measures as possible
- Revenue-constrained scenarios based on the total revenue reasonably expected to be available
- Estimated costs and potential revenues available to support each scenario
- In addition to the USDOT transportation system performance measures, MPOs may evaluate scenarios using locally developed measures.
- Secretary shall conduct a study on metropolitan planning scenario development

- The Secretary shall evaluate the costs and benefits associated with MPOs developing multiple scenarios for consideration as part of the development of the MTP
- The evaluation shall include an analysis of the technical and financial capacity of the MPO needed to develop scenarios

GCLMPO Jurisdictions

The Gaston-Cleveland-Lincoln Metropolitan Planning Organization was established in 2013 following the release of new Urbanized Area delineations, based on 2010 US Census data. The Metropolitan Planning Area (MPA) underwent a major expansion in 2013 based on input and a request from Cleveland and Lincoln Counties to be represented by one transportation planning organization. Based on the consolidation of these two counties into the Gaston County-based MPO, the GCLMPO grew from 12 member jurisdictions to 17. The MPO now includes the municipalities of Belmont, Bessemer City, Boiling Springs, Cherryville, Cramerton, Dallas, Gastonia, Kings Mountain, Lincolnton, Lowell, Mount Holly, Ranlo, Shelby, and Stanley and the counties of Gaston, Cleveland, and Lincoln. There are several smaller municipalities within the MPO area that are not voting members of the MPO, but may have a representative serve as non-voting members.

The GCLMPO total population is 382,429 based on the 2010 Census. The three county MPO area includes seventeen (17) member governments and a total of thirty four (34) jurisdictions. **Figure 1-2** displays the Gaston-Cleveland-Lincoln MPO boundary with the location of each municipality within the MPO.

GASTON COUNTY

Gaston County is located in the southwestern edge of the Piedmont section of North Carolina just west of the City of Charlotte and Mecklenburg County, NC. It is bounded on the east by the Catawba River and Mecklenburg County, on the west by Cleveland County, on the north by Lincoln County and on the south by York County, South Carolina. Gaston was formed from the lower portion of Lincoln County in 1846. Today, Gaston County is part of the Greater Charlotte Metropolitan Statistical Area (MSA) and is the most urban of the three Gaston-Cleveland-Lincoln MPO counties.

Gastonia is the largest city and county seat of Gaston County and serves as the Lead Planning Agency (LPA) for the GCLMPO.



CLEVELAND COUNTY

Cleveland County is nestled in the rolling piedmont of the southwest portion of North Carolina and is situated in the foothills of the Blue Ridge Mountains. The county lies equidistant from Asheville and Charlotte and is centered between two rapidly urbanizing metropolitan areas along the I-85 corridor: Charlotte, NC and Greenville/Spartanburg, SC.

Cleveland County's easy access to Interstate Highways 85, 40, 26 and 77 assures that goods and services flow freely to their destinations from one of 250 trucking firms located throughout the area. More than half of the nation can be reached by automobile within 24 hours.

Shelby is the largest city in Cleveland County. Affectionately known as the "City of Pleasant Living", Shelby was incorporated in 1843 and named for Colonel Isaac Shelby, a Revolutionary War hero at the nearby Battle of Kings Mountain. The Uptown Central Business District is a nationally registered historic district by the US Department of the Interior. Shelby is also home to the annual American Legion Baseball World Series.



LINCOLN COUNTY

Lincoln County lies to the north of Gaston County. The county was formed in 1779 from the eastern part of then-Tryon County. It was named for Benjamin Lincoln, a general in the American Revolutionary War.

In 1782 the southeastern part of Burke County was annexed to Lincoln County. In 1841 parts of Lincoln County and Rutherford County were combined to form Cleveland County. In 1842 the northern third of Lincoln County became Catawba County. In 1846 the southern half of what was left of Lincoln County became Gaston County.

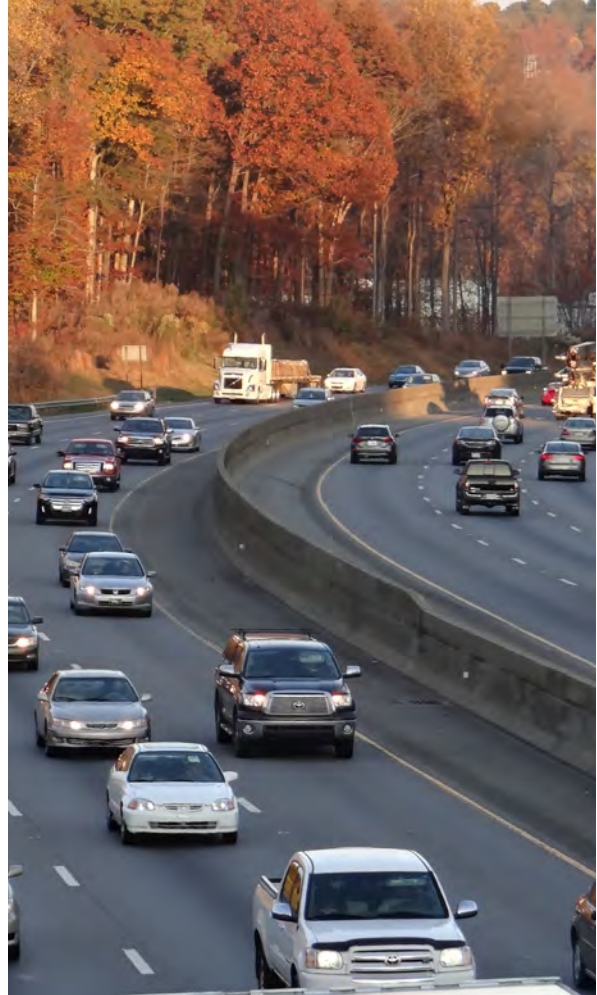
The Madison Cold-blast Charcoal Iron Furnace was built in 1809 on Leiper's Creek near Lincolnton, owned by James F. & R. D. Johnson. By 1815, North Carolina had 23 iron works, mostly in the Piedmont area. By 1823, Lincoln County had ten operating forges and four furnaces, producing 900 tons of bar iron and 200 tons of cast hollow ware items.

Lincolnton was established in 1785 and is the only municipality in the county and serves as the county seat of Lincoln County. It was laid out with a central courthouse surrounded by a grid plan of streets, blocks, and lots with four primary streets—East Main, West Main, North Aspen and South Aspen—leading from the courthouse and dividing the town into quadrants. Due to a steady influx of pioneers to North Carolina's backcountry, by 1840 Lincoln County was one of the largest and most populous counties of the State.

Coordination with Federal Transportation Planning

Federal law (20 CFR Part 450 Subpart C) mandates that the MTP be fiscally constrained, have at least a twenty-year planning horizon and be updated every five years (four in non-attainment areas). The last MTP, the 2040 MTP, was adopted in 2014. In response to the 8-hour ozone (O₃) non-attainment designation of “marginal” by the United States Environmental Protection Agency, a new set of projections for the region’s travel demand model has been developed for the greater Charlotte region. The regional travel demand model has been developed through coordination and collaboration between the Charlotte Regional Transportation Planning Organization (CRTPO); Gaston-Cleveland-Lincoln MPO (GCLMPO); Cabarrus – Rowan MPO (CRMPO); and the Rocky River Rural Planning Organization (RRRPO) in North Carolina and the Rock Hill – Fort Mill Area Transportation Study (RFATS) in South Carolina.

The 2045 MTP includes socioeconomic data forecasts and a financial plan. Since population and economic growth often occur in ways that are unexpected, it is necessary to review the dwelling unit and employment forecasts every three years and to make adjustments as needed. For the 2045 MTP, an economist was contracted to produce population, household, and employment estimates in five-year increments from 2010 to 2050 using a top down approach. The regional partners (listed above) then applied local knowledge to finalize the county totals in their areas and produce the Traffic Analysis Zone (TAZ) level base year data. GCLMPO used the Metrolina CommunityViz Model 16v1.0 as a base year data management tool and applied the model to develop TAZ level projections. The Financial Plan describes the expected revenue and expenditures for the Gaston-Cleveland-Lin-



coln MPO and outlines funding resources and how this money will be spent to implement the Metropolitan Transportation Plan. Assumptions regarding the amount of funds were developed regionally through collaboration between the four MPOs and one RPO. The detailed Financial Plan is included in **Chapter 10**.

The remaining chapters cover each of the modal elements of the MTP as well as Goals and Objectives, Planning Factors and Performance Measures, Public Involvement, Physical and Human Environment, Socio-Economic Projections, Travel Patterns, Safety and Security, Bicycle and Pedestrian, Public Transportation, Aviation, Freight and Other Transportation Modes.

In addition to the MTP, there are other required documents that the MPO must follow: the annual Unified Planning Work Program (UPWP), and the Metropolitan Transportation Improvement Program (MTIP). The UPWP describes all of the tasks and projects that the MPO will embark on each fiscal year, including the amount of funds allocated to each work task. The MTIP is established through NCDOT's Board of Transportation to allocate funds to highway, transit, congestion management, bicycle and pedestrian, transit and other transportation programs within immediate funding cycles.

For a complete list of previous and current planning activities visit www.gclmpo.org.



Transportation Boards

In North Carolina, each urban area's MPO is defined as an "umbrella" organization which includes all member local governments, NCDOT, USDOT, and any other providers of transportation services, such as airports, and transit operators. The MPO organizational structure has three main components:

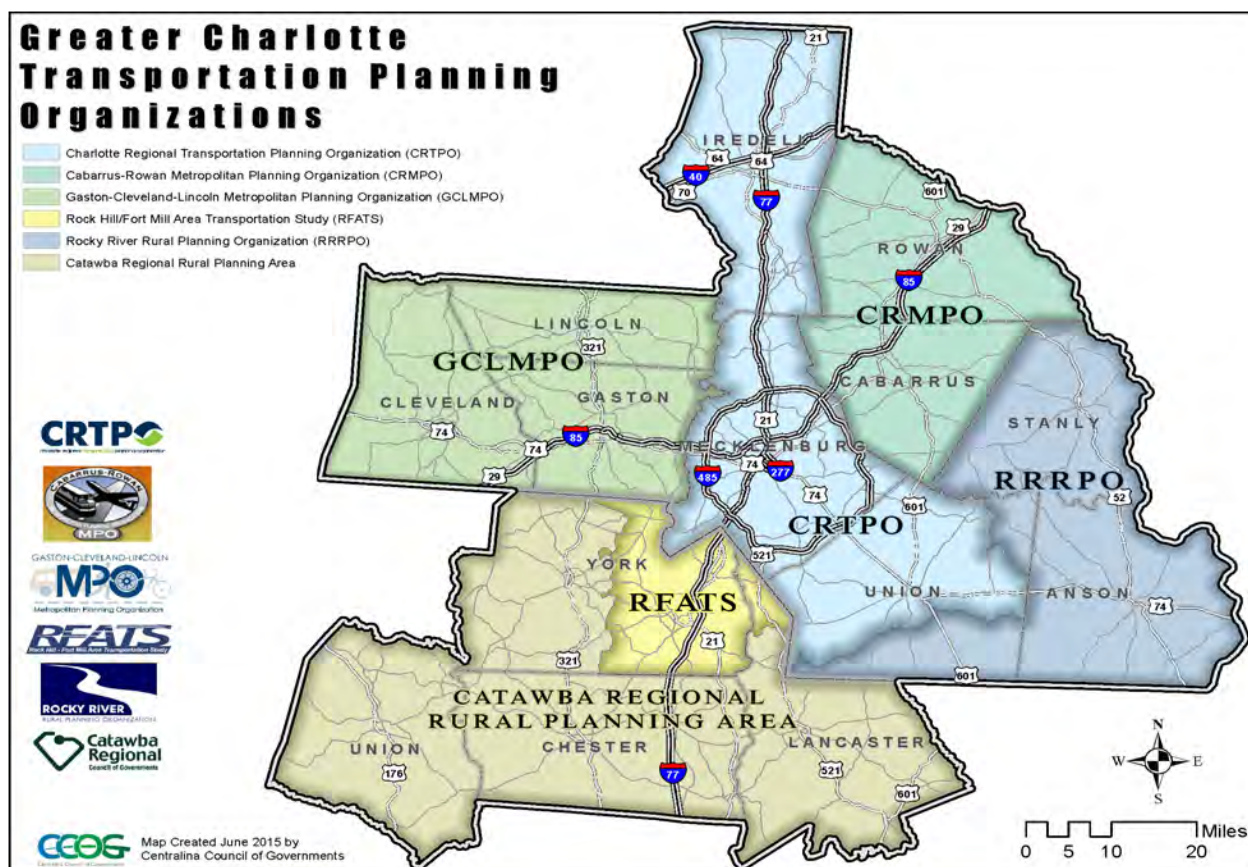
MPO BOARD

The MPO Board is the decision making policy board for the MPO. The membership includes elected officials from each member local government, the area's representative on the North Carolina Board of Transportation, and an advisory non-voting member from FHWA. The MPO Board provides policy direction for the planning process, facilitates communication and coordination among the member jurisdictions and guides the development of a comprehensive multimodal transportation program for the urban area. The MPO Board directs the 3-C process through its annual review and approval of the Unified Planning Work Program, the MPO's Metropolitan Transportation Improvement Program, and through review and approval of changes to the Metropolitan Transportation Plan.

TECHNICAL COORDINATING COMMITTEE (TCC)

The TCC is comprised of staff representatives of the various member governments, NCDOT, FHWA, and other agencies with an interest in transportation planning. The TCC has the responsibility of supervising and coordinating the 3-C process by making technical recommendations to the MPO Board on decisions required pertaining to that process.

Figure 1-3. Charlotte Regional Alliance for Transportation (CRAFT)



LEAD PLANNING AGENCY (LPA)

The City of Gastonia is the LPA for the Gaston-Cleveland-Lincoln MPO and provides staff support to the MPO. The LPA conducts planning studies, forecasts travel demand and patterns, prepares the MPO Board and TCC meeting materials, schedules meetings, administers the distribution of federal transportation planning funds (PL) to member governments, and carries out the directives of the MPO Board and TCC.

CHARLOTTE REGIONAL ALLIANCE FOR TRANSPORTATION (CRAFT)

In addition to the federal and state required components, the Gaston-Cleveland-Lincoln MPO implemented a participatory memorandum of understanding to be a party of a regional organization that was established in 2001. Known as the Charlotte Regional Alliance for

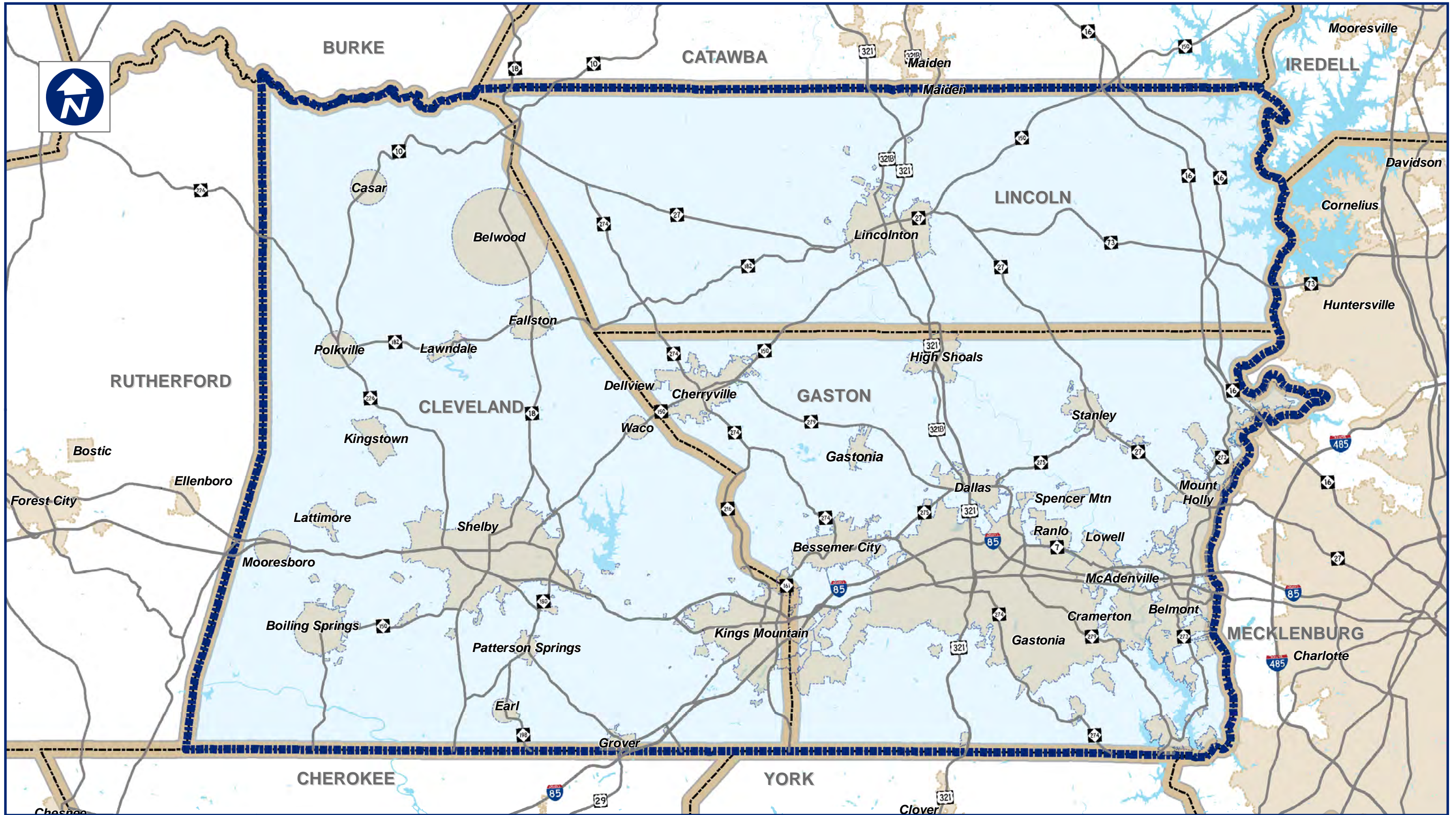
Transportation (CRAFT), neighboring transportation planning organizations within the Charlotte metropolitan bi-state region work together in a continuing, cooperative and comprehensive regional transportation planning process. Members of CRAFT include the Cabarrus-Rowan Metropolitan Planning Organization (CRMPO), Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO), Charlotte Regional Transportation Planning Organization (CRTPO), the Rock Hill-Fort Mill Area Transportation Study (RFATS), and Rocky River Rural Planning Organization (RRRPO). CRAFT's role is to enhance communication among jurisdictions, promote awareness of regional concerns, and to provide an educational forum that addresses significant common transportation issues. The CRAFT boundary is shown in **Figure 1-3**.

NORTH CAROLINA BOARD OF TRANSPORTATION (NCBOT)

Besides local and regional involvement, there is a statewide Board that oversees the transportation infrastructure in North Carolina. In 1931, North Carolina took ownership of all county and local roads in order to construct, manage, maintain and plan for a transportation network. At that time, the state established the State Highway Commission to control and take responsibility as the governing body for the transportation network. In 1973, the name was changed to the NC Board of Transportation. Each Highway Division has a member on the Board to represent their area.

The Governor of the State of North Carolina appoints the BOT. The BOT adopts the Statewide Transportation Improvement Program (STIP), the ten-year investment program determining how state and federal transportation funds will be spent statewide. The BOT then awards contracts for construction based on the MTIP. They set policies for state maintained and operated transportation systems regardless of mode. Nineteen men and women from across the state make up the BOT. Each member represents a specific transportation division or at-large area of interest and works with NCDOT staff members to make decisions about transportation priorities. The BOT meets monthly in Raleigh, typically the first Thursday of each month, with subcommittee meetings held the first Wednesday.





LEGEND

- Highways
- Major Roads
- MPO Area
- Municipalities
- Counties
- Regional Waters

0 2 4 8 Miles

Goals, Objectives, and Policies



The Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) has set goals, policies, and objectives relating to various responsibilities charged to the organization. One goal is to develop and direct a continuing, comprehensive transportation planning process implemented cooperatively with the NCDOT and the communities within the GCLMPO area, in conformance with federal guidelines. In addition, the MPO is responsible for the general review, guidance, and coordination of the transportation planning process, the facilitation and coordination between the various urban area jurisdictions, developing MPO alternative transportation plans, and adopting a Metropolitan Transportation Plan for the Metropolitan Planning Area.

Mission

The GCLMPO will plan for a system of transportation modes that are consistent with the development and growth desired for the jurisdictions that comprise the GCLMPO. The system of roadway, transit, freight, aviation, bicycle, and pedestrian travel modes will deliver safe and efficient movement of people and goods. The GCLMPO will strive to implement transportation choices and mobility that positively coexist with the natural and built environments and strengthen the economic prosperity of the region, while promoting community safety and health.

Programs and projects recommended for implementation by this Metropolitan Transportation Plan (MTP) were selected through a process that included an assessment of existing travel conditions and a variety of land development and environmental factors. The assessment was based on the Goals and Objectives for the MPO's study area described in the following pages.

GOALS

- Provide a safe, comprehensive, and efficient transportation system that allows the movement of goods and people into, through, and out of each jurisdiction within Gaston, Cleveland and Lincoln counties
- Improve the quality of life for residents of the Gaston-Cleveland-Lincoln MPO area
- Provide a transportation system that affords the public with mobility choices including walking, bicycling, aviation, freight, and transit options
- Provide a transportation system that is sensitive to significant features of the natural and human environment
- Provide equitable transportation options to low-income and minority neighborhoods
- Engage the public and stakeholders
- Provide a fair and equitable distribution of planning services to each member jurisdiction of the GCLMPO
- Research how new technologies will impact transportation systems
- Incorporate performance measures for safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays
- Improve the resiliency and reliability of the transportation system

Objectives

REGIONAL CONNECTIVITY

Require and promote transportation improvements to better connect Gaston, Cleveland, and Lincoln counties to other counties in the region.

- Promote additional bridge crossings and widen existing crossings over the Catawba River to handle increases in traffic in and out of Mecklenburg County.
- Strengthen major GCLMPO municipal, multi-modal connections to the regional transportation network (Gastonia, Lincolnton, Kings Mountain, and Shelby).



LAND USE

Promote land use patterns that coordinate different uses such as industrial, retail and residential.

- Promote efficient land development that improves both cost benefit and functional efficiency of the MPO's transportation system.
- Utilize regional scenario planning tools to quantify the impact of different transportation choices on development patterns in the MPO study area.
- Evaluate the impact of land use on the transportation system when new development plans are adopted and policy decisions are made.
- Promote and implement Context Sensitive Solutions, taking into consideration safety, health, mobility, community, and environmental goals in all projects.

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.
- Improve access to city and town centers.
- Enhance mobility by increasing the connectivity of the existing street network, which will better connect people to education, healthcare, job and recreation centers.
- Develop streets and highways that serve regional transportation needs in a manner which minimizes travel times and distances.
- Support highway improvements and congestion relief projects to support freight movement and commuter needs.

- Optimize the inter-city, inter-regional and intra-regional capacities of major transportation corridors.
- Consider and incorporate all modes of transportation when building new projects or making improvements to existing infrastructure (Complete Streets) in order to provide the transportation options needed to serve the community and complement the context of the area.
- Develop visually attractive corridors.
- Plan for projects that help minimize crash potential and severity.
- Incorporate sidewalks and bicycle facilities into the design and construction of roadways to accommodate and encourage pedestrian and bicycle travel.
- Efficiently manage the existing transportation system to reduce delay and congestion caused by weather events and incidents, and by implementing Intelligent Transportation Systems (ITS) and relatively low-cost improvements such as signalization improvements and Travel Demand Management.
- Ensure that all planning studies and design standards for future facilities, where practicable, incorporate specific features that are known to reduce crashes, fatalities, or injuries.
- Improve access to all modes in the transportation system to promote active transportation.
- Require right-of-way dedication, and/or payments in lieu of construction, and/or installation of transportation improvements when warranted for new development.
- Consider how future technology will impact the future transportation system.



PUBLIC TRANSPORTATION

Promote an integrated multimodal local and regional public transit system.

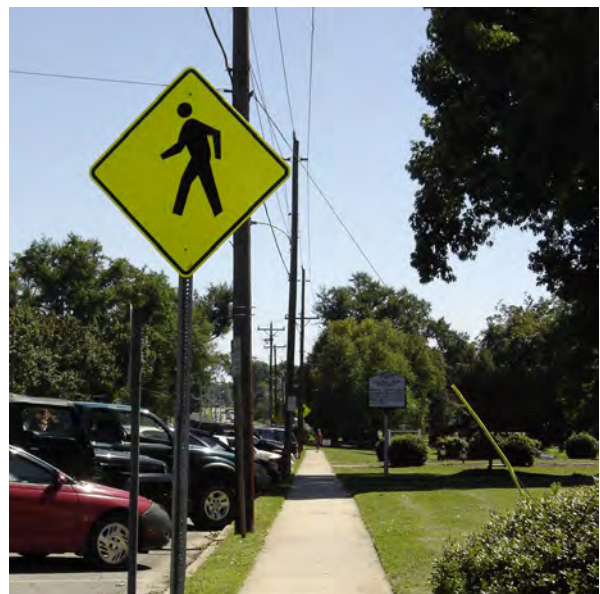
- Promote a safe, efficient and diverse public transportation system that is accessible to various segments of the population.
- Support safe and efficient scheduled transit service that minimizes travel times and distances.
- Encourage collaboration between the various public transportation systems in the MPO area to enhance transportation options for all citizens.
- Support the use of land density criteria for transit centers and corridors.
- Support programs and incentives that encourage ridesharing and/or eliminate barriers thereto.
- Enhance the visibility and public image of the fixed-route, inter-city, and community transportation systems.

- Support effective paratransit for the elderly, disabled, and transportation disadvantaged populations with convenient transportation to needed services.
- Reserve designated rail and transit corridors for future needs.
- Consider alternative transportation solutions to relieve congestion and accommodate customer choice for movement of people, goods, and freight in high-growth corridors.
- Support ridesharing programs, park-and-ride programs, telecommuting programs, and transit benefit programs to increase peak-period travel options and reduce the rate of growth of vehicle miles traveled.
- Support improved technology for the various public transportation systems, including: scheduling and dispatching software, Automatic Vehicle Location (AVL) systems, Transit Automated Voice Annunciator Systems, Automatic Passenger Counting Systems (APC), Interactive Voice Response (IVR), and the addition of fare card readers.
- Improve routes leading to transit stops so they are safer and more accessible for bicyclists and pedestrians and encourage the installation of bike racks on all buses.

PEDESTRIAN AND BICYCLE TRANSPORTATION

Develop a transportation system that integrates pedestrian and bicycle modes of transportation with motor vehicle transportation and encourages the use of walking and bicycling as alternative modes.

- Increase the design sensitivity of specific transportation projects to the needs of pedestrians and bicyclists.
- Assist the development of pedestrian and bikeway systems for both recreation and transportation purposes.
- 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.
- Advocate for linkages for pedestrians and/or bicyclists between neighborhoods, employment centers, services, cultural facilities, schools, parks, businesses, and other important destinations.



- Incorporate appropriate sidewalk, crosswalk, signalization and greenway/trail facilities, and support Safe Routes to School-based strategies including Evaluation and Planning, that accommodate active transportation to and from schools; particularly when considering new school construction and when developing projects within 1-mile of existing schools.
- Improve bicycle and pedestrian access to transit.



RAIL AND AIR TRANSPORTATION

Maximize rail and air transportation opportunities.

- Support expansion opportunities for the Charlotte Douglas International Airport that will increase the attractiveness of the airport as a major passenger and intermodal facility.
- Support the GCLMPO's airports' ongoing long range planning functions.
- Promote future opportunities for inter-regional mobility with enhancements to inter-city rail service and the provision of high-speed rail service.
- Support airport expansions in Gaston, Cleveland and Lincoln counties.
- Support economic development in the GCLMPO area.

FREIGHT AND GOODS MOVEMENT

Support and promote a freight transportation system which supports the movement of goods.

- Develop, integrate, and support a freight transportation system that supports the region's position as a major freight hub via a network of highways, railroads and airports.

- Develop streets and highways that are accessible to and compatible with multiple modes of transportation.
- Promote coordination among transportation modes through the establishment of intermodal facilities.
- Identify opportunities to share rail corridors with transit.
- Support expansion opportunities at Charlotte Douglas International Airport that increase the attractiveness of the airport as a major cargo facility.
- Promote safe routes, with minimal urban exposure, for the transport of hazardous materials.
- Plan for truck routes that minimize exposure to neighborhoods and to historic and cultural resources.
- Identify and build high-impact projects that connect transportation modes seamlessly so that people and freight can move efficiently around and through the region.
- Encourage land use planning that supports and promotes the efficient movement of freight.

- Consider freight impacts on existing infrastructure.
- Identify existing transportation projects with freight impact.
- Promote competitive freight options by improving existing transportation facilities in strategic corridors.
- Formulate a relationship between the private and public sectors to leverage available public and private revenue resources.



THE ENVIRONMENT

Physical

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

- Develop transportation systems and programs that maintain or improve air quality.
- Design transportation facilities that minimize transmission of traffic noise to surrounding properties.
- Design transportation systems and facilities that preserve and complement the area's natural features.
- Plan transportation facilities that reinforce the community's standard 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 minimize exposure to neighborhoods and historic and cultural resources.
- Identify, protect, and/or acquire future right-of-way as early as possible to minimize negative impacts on communities and the natural environment.
- Reduce the impact of transportation facilities on water quality, watersheds, and ecosystems, working to identify and avoid or mitigate impacts to irreplaceable natural resources.



Human

Develop a transportation system that is designed to support and improve community health.

- Encourage transportation and land-use planning policies, such as a Complete Streets policy, that support healthy and active communities.
- Establish performance measures to promote safe, affordable and equitable public transit and alternative modes of transportation such as walking and cycling.
- Use health impact assessments to inform and guide transportation policy, projects and planning.
- Foster the participation of local communities and underserved populations in all stages of the transportation planning and development process.
- Support community-based transportation programs and services that promote health and provide access to healthy food and water, affordable housing, employment, schools, health care and recreation.
- Fund programs that expand transportation options for disadvantaged populations and people with disabilities, and that promote safe, convenient transportation options for children and seniors.
- Design and construct multi-modal transportation systems to meet the needs of users of all ages and abilities, including those in rural areas.
- Collect data and fund research to evaluate how transportation and planning policies affect public health and health equity.
- Support reductions in transportation-related emissions and greenhouse gases.
- Increase vehicle, motorist, passenger, cyclist and pedestrian safety.

FINANCIAL

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

- Maximize cost-benefit ratio on transportation projects.
- Develop transportation projects that enhance the local and regional economies.
- Emphasize cost-effectiveness in project prioritizations.
- Build new and stronger partnerships, public and private, to develop and finance transportation projects that maximize public investments and support community and regional growth strategies.

PUBLIC INVOLVEMENT

Actively engage the public and regional stakeholders in all phases of planning.

- Provide meaningful opportunities for public involvement in the transportation planning process.
- Actively engage minority and disadvantaged communities in identifying transportation needs, developing alternative strategies to meet those needs, and implementing solutions that are affordable and sensitive to a community's heritage and supportive of local economic institutions.
- Coordinate transportation investment strategies with other state agencies to support balanced economic growth across the Metrolina Region with particular focus on tourism and similar industries that are highly dependent on the transportation system.the area.



Policies

The following policies were adopted by the GCLMPO on May 25, 2017:

- The GCLMPO will research develop and implement tools to improve and enhance the comprehensive transportation system.
- The GCLMPO will research, develop and implement tools to improve and enhance the street and highway system.
- The GCLMPO will research, develop and implement tools to improve, enhance, and link public transportation systems in the area.
- The GCLMPO will research, develop and implement tools to improve and enhance the bicycle and pedestrian system.
- The GCLMPO will research, develop and implement tools to improve and enhance the rail and access to aviation systems.
- The GCLMPO will research, develop and implement tools to improve and enhance the environment.
- The GCLMPO will research, develop and implement tools to improve and enhance the movement of freight and goods into and out of the area.
- The GCLMPO will research, develop and implement tools to improve and enhance public participation in the transportation planning process.



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Planning Factors and Performance Management

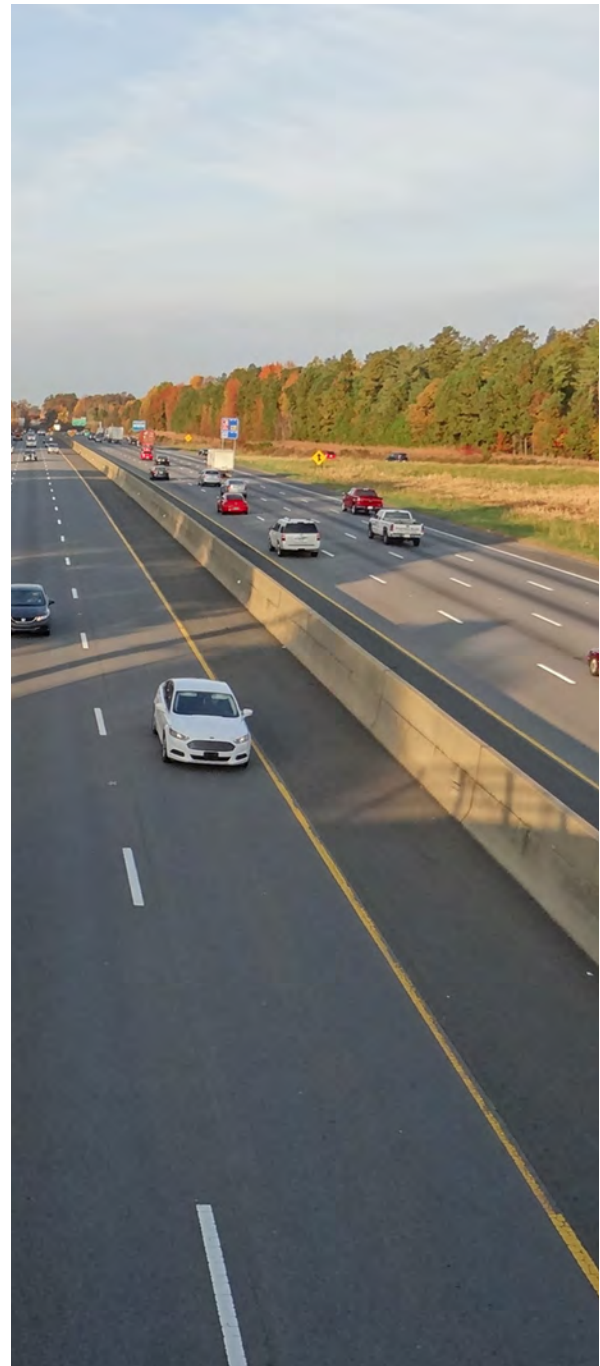


Passed in 2013, the Strategic Transportation Investments (STI) law is a more efficient way of funding infrastructure investments that will better connect citizens to opportunities, increase jobs, and enhance economic development. STI allows us to make a stronger investment in our people and our state sooner by focusing on reducing congestion and travel time, while increasing economic competitiveness, freight and multimodal connectivity. The law also cancelled a legislative mandate for construction of three turnpike projects in Currituck, New Hanover and Gaston counties.

STI also established the Strategic Mobility Formula, which allocates available revenues based on data-driven scoring and local input. The new formula was sponsored by Representatives William Brawley, John Torbett, Frank Iler, Phil Shepard, and Senators Kathy Harrington and Bill Rabon. It serves as the first step in addressing a decline in North Carolina transportation revenue, and issues related to an increasing state population, by allowing NCDOT to more efficiently use existing funds. This will result in more transportation projects and more jobs for North Carolina. NCDOT will work closely with the N.C. Department of Commerce, local municipalities, and metro and regional planning organizations to identify projects that spur economic growth throughout the state through the new data-driven process.

The Strategic Mobility Formula takes a tiered approach to funding transportation improvements, with the statewide level receiving 40 percent of available funding (\$6 billion), the regional level receiving 30 percent of available funding (\$4.5 billion) and the division level also receiving 30 percent of available funding (\$4.5 billion) over the next 10 years.

Projects are selected using a combination of quantitative data as well as local input, with local input weighing more heavily for division projects than for regional impact projects.



Ten Planning Factors

1. ECONOMIC VITALITY

The GCLMPO has worked extensively over the years with NCDOT and other state and federal agencies on transportation projects that enhance the economic prosperity of the study area. GCLMPO developed a local methodology for ranking and prioritizing local projects which considers freight and congestion as well as actively including chamber of commerce representatives in the transportation planning process.

2. SAFETY

GCLMPO takes a number of measures to increase the safety of the transportation system for all users. NCDOT 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 has a safety program to address these needs.

Further efforts supported by the Gaston-Cleveland-Lincoln MPO to ensure safety include: the construction of median guardrails on freeways, the replacement of deficient bridges and other roadway 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.



3. SECURITY

The GCLMPO is considering security projects including the expansion of camera enforcement programs aimed at helping reduce congestion and provide for safe evacuation during emergency situations.

With the increasing attention put on emergency response, MPO staff and NCDOT personnel are becoming more comfortable and proactive in their roles as incident response partners. We will continue to work with our emergency agencies at the local, regional and state level to develop a strong working relationship together.

The Gastonia Transit safety and security plan works in conjunction with the City of Gastonia emergency operation plan in order to provide coverage to the users and its citizens. There is constant review the plans to provide the best practices to use in case of a natural or man-made disaster.

4. ACCESSIBILITY AND MOBILITY OPTIONS OF PEOPLE AND FREIGHT

1. Actively participate in future deliberations by NCDOT in developing compliant performance metrics for freight movement in North Carolina that:
 - Give incentives to projects improving travel time reliability
 - Decrease on-road emissions from freight movement
 - Develop a reliable network with flexible routing options
 - Improve access to freight-intensive land uses

These deliberations should occur in consultation with area MPOs to ensure a consistent position and perspective from the region to NCDOT.



2. Initiate data collection and analysis programs to assess the effectiveness of completed projects, consistent with FAST Act regulations and metrics as approved by US-DOT, NCDOT, and GCLMPO.
3. GCLMPO was an active participant in the Greater Charlotte Regional Freight Mobility Plan (December 2016). The Freight Mobility Plan serves urban, suburban, and rural areas of the region by:
 - Aiding in the understanding of current and future levels of freight network activity
 - Identifying issues and opportunities
 - Defining feasible solutions supported by the private sector
 - Identifying new technologies to improve freight flow and attract new businesses to the region
 - Guiding the region's investments in freight infrastructure
4. Retain freight-oriented variables in GCLMPO MTP project ranking processes to adequately consider important freight-related variables, such as:
 - Land access
 - Travel time reliability
 - Congestion
 - Inter-modal connections
 - Safety
5. Implement Seven Portals Study recommendations for logistics villages and general freight-oriented development, including:
 - Improved access roads to freight facilities, i.e. "the last mile"
 - Increased rest areas and parking areas for trucks and their drivers
 - Addressing choke points and bottlenecks in transportation systems

Increasing the accessibility and mobility options available to people and for freight is one of the most important objectives of GCLMPO. 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 and implementing fixed-route mass transit options.

Land use and transportation policies are being instituted that support transit, walking and bicycling, and reduce the 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.

5. ENVIRONMENTAL PROTECTION, ENERGY CONSERVATION PROMOTION, QUALITY OF LIFE IMPROVEMENTS AND CONSISTENCY BETWEEN TRANSPORTATION IMPROVEMENTS AND STATE AND LOCAL PLANNED GROWTH AND ECONOMIC DEVELOPMENT

The GCLMPO is committed to protecting and enhancing the environment, promoting energy conservation, and improving the quality of life for citizens living, working or visiting the area. The member governments within the study area look to protect its important resources by enacting environmentally sensitive land use policies and transportation choices, and promoting air quality education programs. In some localities, land use decisions are being made to direct growth to reduce travel demand, which in turn leads to energy conservation and reduced pollutants.



6. SYSTEM INTEGRATION AND CONNECTIVITY

The GCLMPO has begun to develop and support programs and projects that enhance the development, integration, and connectivity of a multi-modal transportation system. The proposed Catawba Crossings and southern connector opportunity, as well as the expansion of the Charlotte Douglas International Airport and Intermodal Yard provides a critical link for movement of goods between rail, highway, and air. Park-and-ride lots will provide auto commuters an opportunity to access public transit and will be available for a future rapid transit system. Bike racks on buses allow people the flexibility to access bus stops by bike, improving the efficiency of the system. GCLMPO policy is to add sidewalks to non-freeway roadways which will enable citizens to leave their vehicle at home for short trips.

In 2009, The GCLMPO along with the City of Gastonia completed a Conceptual Design and Feasibility Study for a Multimodal Center to build in Downtown Gastonia. This work, accompanied by the re-activation of the old P&N railroad, will allow GCLMPO to pursue opportunities to fund commuter rail in between Gastonia and Charlotte, while providing a one-stop destination for other travel needs.

7. EFFICIENT SYSTEM MANAGEMENT AND OPERATIONS

The GCLMPO will continue its work on the analysis of a Congestion Management System in cooperation with the NCDOT. The system identifies improvements to reduce traffic congestion at intersections throughout the urban area.

Traffic Management System

The North Carolina Department of Transportation completes biannual traffic counts for the entire MPO. The City of Gastonia currently has thirteen (13) closed circuit television (CCTV) cameras for its computerized traffic signal system, as is currently working to add an additional thirty-two (32) cameras in the near future. The traffic system in Gastonia is also linked to the Metrolina Regional Traffic Management Center (MRTMC) in Charlotte. The cameras are used to provide depictions of the traffic patterns/flows during peak times, as well as during incidents that require the detour of I-85 traffic to Franklin Boulevard (US29/74).

In addition, the City of Belmont and the Towns of Cramerton and McAdenville adopted the Build a Better Boulevard: Wilkinson Boulevard Corridor Study in January 2015 that proposes traffic management recommendations for improving traffic flows along the Wilkinson Boulevard (US 29/74) Corridor through the three municipalities. Working through STI, there is currently a project funded in the 2018-2027 State Transportation Improvement Program (STIP) to construct and implement an Adaptive Signal System along Wilkinson Boulevard in eastern Gaston County, which will adjust signal phase order and duration based on real time measured traffic demand.

The traffic management operations being employed will allow for the revision/tweaking of traffic signal timing to accommodate the existing conditions, thereby reducing delays, increasing capacity, decreasing idle time, and improving air quality.

Safety Management System

The GCLMPO works with NCDOT's Traffic Engineering Branch in implementing safety improvements on the State highway system. One new resource for the MPO is linking with the Strategic Highway safety plan, which is a statewide, comprehensive, data driven plan that provides a collaborative framework for safety on public roads by reducing serious injuries and fatalities on public roads.

8. PRESERVATION OF THE EXISTING SYSTEM

GCLMPO has worked with NCDOT for many years in establishing and maintaining a transportation planning program that incorporates a standard set of planning principles. These 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
- Minimizing adverse impacts to the natural, social and economic environments

The MPO is also committed to providing the necessary resources for maintaining and preserving the existing and future transportation system.



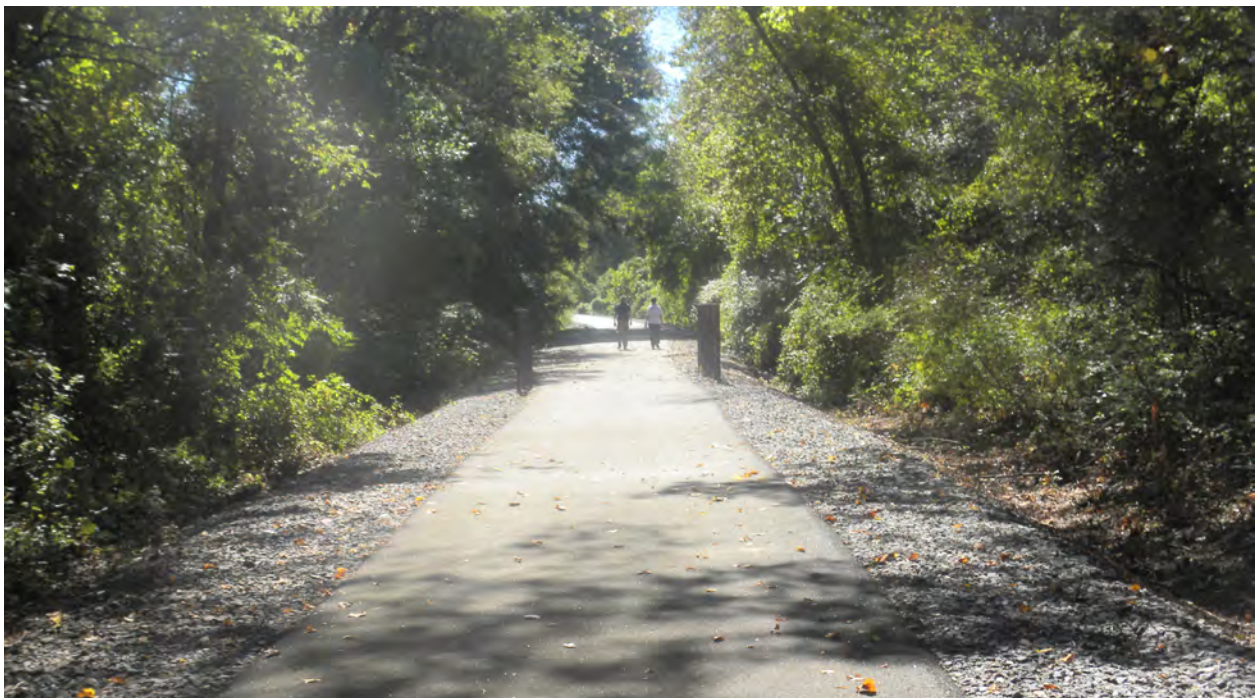
9. IMPROVE RESILIENCY AND RELIABILITY OF THE EXISTING SYSTEM AND REDUCE (OR MITIGATE) STORMWATER IMPACTS

The USDOT defines resilience as: “An ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.” The transportation system is increasingly vulnerable to severe weather, climate change, natural disasters, and other unexpected events that impact the region’s transportation network.

Planning for a system that reduces the impact of these potential threats is the intent of this planning factor. GCLMPO continues to partner with NCDOT and regional MPOs to identify and conduct planning studies and collect data that will contribute to improving transportation reliability in this growing and changing region. Through these efforts, the region is able to develop strategies that will help address transportation issues now and into the future.

The CONNECT Our Future study, encompassing a 14-county region – including the three counties within the GCLMPO planning area – addressed climate change and hazard mitigation, among various other topics. In particular, the study identified the following strategies that can be applied in the region to contend with potential hazards:

- Establish a forum for cross-departmental, cross-jurisdictional (within a county or group of counties – such as the GCLMPO planning area) to assess and provide recommendations for issues related to hazard mitigation and resilience.
- Work with local government and policy-makers to ensure that hazard mitigation planning recommendations that intersect with other adopted plans (such as the MTP) are both included and consistent.
- Encourage municipal and county – and NCDOT in the case of transportation – participation in hazard mitigation coordination and resilience planning efforts.





Recognizing the importance of mitigating against future hazards, the GCLMPO intends to explore the possibility of implementing these and/or similar strategies within its planning area, through a collaborative process with its partner agencies.

Along with extreme weather events, when precipitation of any accumulation occurs over highways and other impervious surfaces, the resulting stormwater can carry debris, sediment, trash, gasoline, heavy metals, and other polluting chemicals into water sources, having a huge impact on water quality. Additionally, de-icing chemicals, sand, and salt that are used during snow and ice events can contaminate groundwater and pollute surface waters. Acid rain, which takes place when vehicle and industrial emissions are released into the atmosphere and react with water, oxygen, and other compounds, further pollute water sources.

Other GCLMPO activities that contribute to a resilient and reliable transportation system include:

- Traffic monitoring and management
- Providing traveler information
- Traffic incident management
- Performance management

Specific analyses related to resiliency and reliability of the transportation system have not previously been conducted for the GCLMPO planning area. The NCDOT owns and operates much of the transportation infrastructure within North Carolina. The GCLMPO will continue to collaborate with NCDOT, as well as the area's other MPOs, to explore opportunities to evaluate the resiliency of the regional transportation network and better understand the potential impacts.

A more resilient transportation system can be achieved by addressing:

Existing Infrastructure Resilience: As environmental risks change, the probability of unexpected failures may increase; therefore, as existing infrastructure approaches the end of its service life, decisions about replacement or abandonment should take into account changing future risks.

New Infrastructure Resilience: Newly constructed infrastructure should be designed and built in recognition of the best current understanding of future environmental risks.

System Resilience: Best viewed across transportation modes and multiple system owners, some key elements of system resilience are obvious while other dependencies may be less well recognized (e.g. transportation systems are interdependent when passengers or freight carriers rely on multiple transportation modes to reach their destination).

10. ENHANCE TRAVEL AND TOURISM

Whether maintaining existing infrastructure or constructing new roads, bicycle and pedestrian facilities, airports, and public transportation corridors, transportation is an integral part of the tourism industry. Visitors must have confidence that they can travel through a region safely and quickly, and tourism is an important industry for all of North Carolina, including Gaston, Cleveland, and Lincoln Counties. In fact, according to the Gaston Gazette newspaper, tourism brought \$251.7 million in revenue for Gaston County in 2016 which was the 7th year in a row of increased revenue in this sector.

Gaston County has a “Go Gaston. Get Outside” campaign which encourages residents and visitors to take advantage of the numerous outdoor sites for family friendly activities, such as Crowders Mountain State Park and the Daniel Stowe Botanical Gardens. There are many other great tourist attractions including, but not limited to, golf courses, art centers, performance theaters, retail stores, and restaurants located throughout the MPO area. New hotels, including a Hilton Garden Inn, which is currently under construction near the intersection of Interstate 85 and Cox Road in Gaston County, contribute to the steady growth in the tourism sector which is here to stay.

In order to enhance travel and tourism, the MPO will continue to partner with NCDOT, member local governments, economic development groups, and the various Chambers of Commerce and tourism groups within the three county planning area to better the transportation system and reduce any negative effects of increased traffic.



Gaston County Travel and Tourism

The Gaston County Bike Share Program was started by Gaston County Travel and Tourism, with Atrium Health as the founding sponsor. This program provides residents and visitors with a convenient, affordable, and healthy way to get around Gaston County. Bike Share Stations are located at the Gaston County Visitors Center, Dallas Park, Highland Rail Trail, George Poston Park, and Lineberger Park.

In addition, Gaston County Travel and Tourism has teamed with Gaston Together, a Gaston County non-profit, to promote “Gaston Footsteps”, a website that highlights the county’s numerous greenways, trails, and blueways (www.footstepstrail.com).

Performance Management

A national performance-based planning requirement for federal, state, and regional agencies was originally established in 2012, with the Moving Ahead for Progress in the 21st Century (MAP-21) surface transportation program, in order to tie investments to transportation system performance. It was continued in 2015 with the passage of the federal transportation bill, Fixing America's Surface Transportation (FAST) Act. FAST Act continues the aggressive path toward performance-based planning and more specifically, performance-based transportation outcomes. Several divisions of the U.S. Department of Transportation (USDOT) are responsible for administering the national surface transportation, performance-based planning program with rule-making oversight by the FHWA and FTA. The performance management framework is based upon seven (7) national goals established MAP-21 and FAST Act.

Federally mandated rules associated with performance management have also been released, which include requirements for MPOs, State DOTs, and transit agencies to establish performance targets. Another significant component of performance management is monitoring and reporting on transportation system performance. As the MPO for Gaston, Cleveland, and Lincoln counties, the GCLMPO is responsible for reporting on performance management in its 2045 MTP. **Figure 3-1** displays an overview of the performance-based planning process. The following pages contain more details about the requirements, and related tasks accomplished by the GCLMPO.

National Performance Goals

- **Safety**—To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure condition**—To maintain the highway infrastructure asset system in a state of good repair.
- **Congestion reduction**—To achieve a significant reduction in congestion on the NHS.
- **System reliability**—To improve the efficiency of the surface transportation system.
- **Freight movement and economic vitality**—To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental sustainability**—To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced project delivery delays**—To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process.

Federal Performance Measures

Federal performance measures for both the highway and transit system have been established as part of the federal performance management initiative. For each performance measure, the effective (starting) date of the measure, the recommended data sources, and the network applicability (Interstate system, National Highway System, all public roads, etc.) have been defined. The highway system performance measures are listed in **Table 3-1**, and apply to all MPOs and State DOTs. The highway performance measures align with the seven national goals.

Figure 3-1. Performance-Based Planning Process

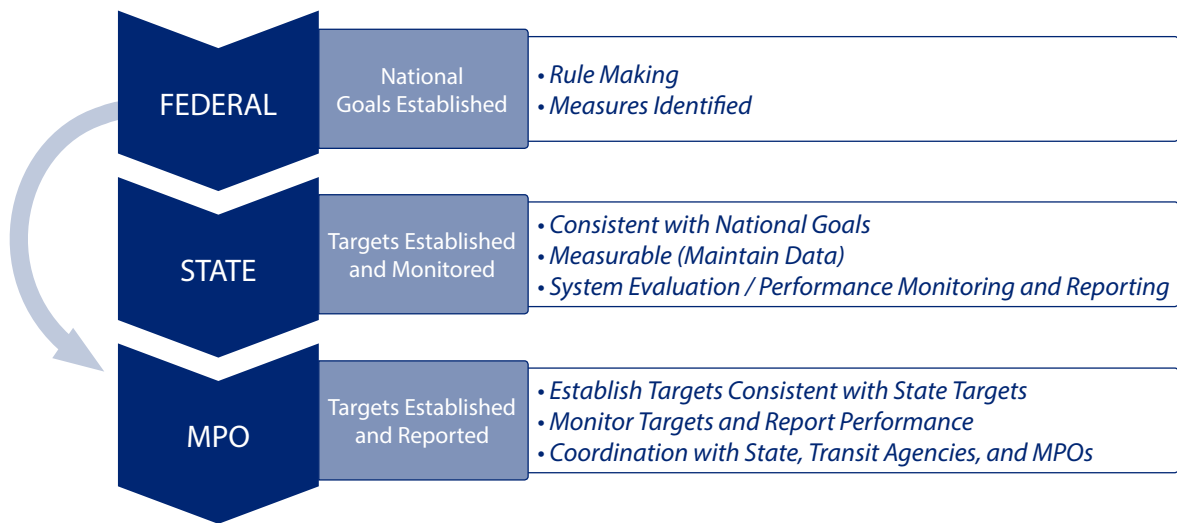


Table 3-1. Highway System Performance Measures

National Goal Area	Highway Category	Performance Measure
Safety	Safety	Number of Fatalities
		Rate of Fatalities
		Number of Serious Injuries
		Rate of Serious Injuries
		Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries
Infrastructure Condition	Infrastructure	Percentage of Pavements in Good Condition (Interstate)
		Percentage of Pavements in Poor Condition (Interstate)
		Percentage of Pavements in Good Condition (Non-Interstate NHS)
		Percentage of Pavements in Poor Condition (Non-Interstate NHS)
		Percentage of Bridges in Good Condition (NHS)
		Percentage of Bridges in Poor Condition (NHS)
System Reliability	System Performance	Percent of Reliable Person-Miles Traveled (Interstate)
		Percent of Reliable Person-Miles Traveled (Non-Interstate NHS)
Freight Movement & Economic Vitality		Truck Travel Time Reliability (TTTR) for the Interstate System
Environmental Sustainability		Total Emissions Reduction
Congestion Reduction		Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita on the National Highway System (NHS)
		Percent of Non-Single Occupancy Vehicle (SOV) Travel

Table 3-2 includes the transit system performance measures, which apply to transit agencies and State DOTs and also need to be established and monitored by MPOs.

Table 3-2. Transit System Performance Measures

TRANSIT CATEGORY	PERFORMANCE MEASURE
Transit Asset Management (TAM) and National Transit Database (NTD) Reporting	Equipment - Percent of equipment valued > \$50,000 (support, non-revenue service vehicles) that have met their Useful Life Benchmark (ULB)
	Rolling Stock - Percent of revenue vehicles surpassing their ULB by Asset Class
	Facilities - Percent of facilities with condition rating below 3.0 on FTA Transit Economic Requirements Model (TERM) Scale
	Infrastructure – Percent of guideway directional route miles with performance restrictions by class

Federal Performance Targets

Although federal performance measures are identified at the federal level, one of the key tasks for MPOs, State DOTs, and transit agencies is to establish performance targets based on those defined measures. Guidance is provided at the federal level regarding the development of performance targets, but it is up to each respective agency to coordinate to establish and monitor targets over time.

HIGHWAY TARGETS

Highway targets are generally required for State DOTs first, and then MPOs have 180 days after the State's targets are established to define their own targets. MPOs can establish targets one of two ways: 1) Agree to contribute toward the accomplishment of the State DOT target, or 2) Develop a quantifiable target for the MPO planning area.

Safety

NCDOT established its most recent safety targets in August 2019. Key facts are:

- Targets for each performance measure are based on 5-year rolling averages
- Targets are for calendar years
- Targets will be established annually
- NCDOT will coordinate with MPOs to establish targets
- NCDOT's targets call for a 50 percent reduction in the five metrics identified (by 2030).

The GCLMPO coordinated with NCDOT and adopted the state's most recent safety performance targets on January 23, 2020. The NCDOT safety performance targets are listed in **Table 3-3**. The projects programmed in the GLCMPO's 2045 MTP are intended to contribute to the accomplishment of NCDOT's safety targets.

NCDOT documents and reports its safety performance targets in its annual Highway Safety Improvement Program. Detailed information about NCDOT's targets can be found in the North Carolina Strategic Highway Safety Plan.

Table 3-3. Safety Performance Measures and Targets

CATEGORY	PERFORMANCE MEASURE	NCDOT TARGET (BY DEC. 31, 2020)
Safety	Number of Fatalities	1,227.8 (6.23% reduction)
	Rate of Fatalities per Million VMT	1.084 (5.39% reduction)
	Number of Serious Injuries	2,812.8 (8.54% reduction)
	Rate of Serious Injuries per Million VMT	2.462 (7.64% reduction)
	Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries	426.6 (7.13% reduction)

Infrastructure Condition

NCDOT established its infrastructure condition targets in May 2018, highlighted by the following:

- Targets are based on an evaluation of trends and external and internal factors. Details are provided in NCDOT's baseline report *NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy, and Target Setting*
- Target setting frequency: 2-year and/or 4-year
- The first performance period is January 1, 2018 through December 31, 2021
- States and MPOs will coordinate to establish targets

The GCLMPO coordinated with NCDOT and adopted the state's infrastructure condition targets on October 25, 2018. The NCDOT infrastructure condition targets are listed in **Table 3-4**. Target setting details are included in **Appendix A**.

NCDOT documented its infrastructure condition targets in a baseline performance period report submitted to FHWA in September 2018. It will report on progress in both a 2-year, mid-performance period progress report (October 1, 2020) and a 4-year, full performance period report (October 1, 2022). The 4-year targets can be adjusted in the mid-performance period progress report. Both progress toward achieving the first period performance targets and setting of new targets occur in the full performance period report.

Table 3-4. Infrastructure Condition Measures and Targets

CATEGORY	PERFORMANCE MEASURE	2 YEAR TARGET 1/1/2018 - 12/31/2019	4 YEAR TARGET 1/1/2018 - 12/31/2021
Infrastructure Condition	Percentage of Pavements in Good Condition (Interstate)	N/A	37.0%
	Percentage of Pavements in Poor Condition (Interstate)	N/A	2.2%
	Percentage of Pavements in Good Condition (Non-Interstate NHS)	27.0%	21.0%
	Percentage of Pavements in Poor Condition (Non-Interstate NHS)	4.2%	4.7%
	Percentage of Bridges in Good Condition (NHS)	33.0%	30.0%
	Percentage of Bridges in Poor Condition (NHS)	8.0%	9.0%

System Performance

NCDOT established its system performance targets in May 2018, highlighted by the following:

- Targets are based on an evaluation of trends and external and internal factors. Details are provided in NCDOT's baseline report *NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy, and Target Setting*
- Target setting frequency: 2-year and/or 4-year
- State DOTs whose geographic boundaries include any part of a nonattainment or maintenance area for ozone, carbon monoxide, or particulate matter must establish 2-year and 4-year emissions targets for each of these applicable criteria pollutants and precursors
- State DOTs and MPOs in urbanized areas of more than 1 million people (first performance period) and more than 200,000 (subsequent performance periods) that are also in nonattainment or maintenance areas for ozone, carbon monoxide or particulate matter must establish a single, unified 2-year and 4-year target for annual hours of peak hour excessive delay (PHED) per capita and percent of non-single occupant vehicle (SOV) travel
- The first performance period is January 1, 2018 through December 31, 2021



- States and MPOs will coordinate to establish targets

GCLMPO attended two meetings with all MPOs and State DOTs in the Charlotte, NC-SC Urbanized Area (UZA) in March 2018 to establish the required single, unified targets. These targets were supported by all agencies in the spring of 2018. GCLMPO also provided emissions targets at these meetings to help in the establishment of the statewide emissions targets. The GCLMPO coordinated with NCDOT and adopted the state system performance targets on October 25, 2018. The NCDOT system performance targets are listed in **Table 3-5**. Target setting details are included in **Appendix A**.

NCDOT documented its system performance targets in a baseline performance period report submitted to FHWA in September 2018. It reports on progress in both a 2-year, mid-performance period progress report and a 4-year, full performance period report. The 4-year targets can be adjusted in the mid-performance period progress report. Both progress toward achieving

Table 3-5. System Performance Measures and Targets

CATEGORY	PERFORMANCE MEASURE	2 YEAR TARGET	4 YEAR TARGET
		1/1/2018 - 12/31/2019	1/1/2018 - 12/31/2021
System Performance	Percent of Reliable Person-Miles Traveled (Interstate)	80.0%	75.0%
	Percent of Reliable Person-Miles Traveled (Non-Interstate NHS)	N/A	70.0%
	Truck Travel Time Reliability (TTTR) for the Interstate System	1.65	1.70
	Total Emissions Reduction	21.0%	21.0%
	Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita on the National Highway System (NHS)	N/A	34.0
	Percent of Non-Single Occupancy Vehicle (SOV) Travel	VOC: 0.252 kg/day NOx: 2.360 kg/day	VOC: 0.504 kg/day NOx: 4.720 kg/day

the first period performance targets and setting of new targets occurs in the full performance period report.

TRANSIT TARGETS

Transit agencies are defined in the federal regulations as either Tier I or Tier II agencies. These agency types are based upon the number of vehicles owned, operated, and managed by a respective transit agency:

- Tier I agencies own/operate/manage > 100 vehicles during peak service
- Tier II agencies own/operate/manage ≤ 100 vehicles during peak service

A Tier I agency is responsible for setting its own transit targets, whereas Tier II agencies can set their own transit targets or defer to group sponsors (typically State DOTs) to set the targets. Currently, there are no Tier I transit agencies within the GCLMPO. Tier II agencies include Gastonia Transit, Gaston County ACCESS, Transportation Lincoln County, and the Transportation Administration of Cleveland County. All Tier II agencies have elected to participate in NCDOT's Group TAM Plan and have agreed to support NCDOT targets.

Related Performance-Based Plans

There are several other plans maintained by transportation agencies that feed into performance management or include aspects of performance management. It is important that the goals and objectives of those plans are incorporated into GCLMPO's overall performance-based planning efforts. The following plans contain applicable performance management components:

NCDOT STRATEGIC HIGHWAY SAFETY PLAN (SHSP)

The NCDOT SHSP was first developed in 2002 as a document that is intended to be updated repeatedly. The last plan update was in 2014, as a result of the MAP-21 transportation legislation. The SHSP includes a vision, mission, and goals, as follows:

- **Vision** – *Through our partnerships, we foster safety awareness and provide safe access throughout North Carolina for all users and modes of travel such that everyone arrives safely at their destination.*



- **Mission** – Establish a collaborative, strategic approach to the identification and implementation of safety improvement programs and policies to achieve the statewide goals to reduce fatalities and serious injuries related to crashes on North Carolina's transportation system.
- **Goal** – Cut the fatalities and serious injuries in North Carolina in half based on the 2013 figures, reducing the total annual fatalities by 630 fatalities and the total injuries by 1,055 serious injuries before 2030.

This goal is consistent with the safety targets set by NCDOT, and supported by the GCLMPO. It should also be noted that North Carolina is a Vision Zero State, meaning even one fatality is too many. NCDOT's SHSP aims to achieve Vision Zero.

TRANSPORTATION ASSET MANAGEMENT PLAN (FOR THE NATIONAL HIGHWAY SYSTEM)

The development of an asset management plan that accounts for the National Highway System is one of the federal requirements associated with performance-based planning. NCDOT has currently developed a three-phased plan consisting of the following:

- Phase I – Initial draft of highway assets (including pavement lanes and shoulders, bridges, and tunnels, among others).
- Phase II – Consideration of other highway assets (including rest areas, weigh stations, and pump houses, among others).
- Phase III – Coverage of other NCDOT transportation modes (including ferries, airports, rail, and ports).

CMAQ PERFORMANCE PLAN

MPOs serving a transportation management area (TMA) with a population over 1 million that includes a nonattainment or maintenance area

are required to develop a CMAQ Performance Plan to support the implementation of the CMAQ measures. In the CMAQ Performance Plan and its biennial updates, these MPOs report 2-year and 4-year targets, describe how they plan to meet their targets, and detail their progress toward achieving the targets over the course of the performance period.

GCLMPO developed its initial CMAQ Performance Plan in September 2018. A copy of the plan is included in **Appendix A**.

TRANSIT ASSET MANAGEMENT (TAM) PLAN

All transit providers that are recipients or sub-recipients of Federal financial assistance under 49 U.S.C. Chapter 53 and own, operate, or manage transit capital assets used in the provision of public transportation are required to develop a TAM plan. The plan must be updated in its entirety at least every four years, and it must cover a horizon period of at least four years.

Tier I transit providers are required to develop and carry out their own TAM plans. As stated, the GCLMPO does not have a Tier I transit agency. Tier II providers may develop their own plans or participate in a group TAM plan (compiled by a Group Plan Sponsor – typically the State DOT). The North Carolina Department of Transportation/Public Transportation Division (NCDOT/PTD) prepared a Group TAM (Transit Asset Management) plan for all community transportation systems and small urban systems opting to be included in the plan. All four transit agencies within the GCLMPO area participated in the NCDOT Group TAM Plan: Gastonia Transit, Gaston ACCESS, Transportation Administration of Cleveland County (TACC) and Transportation Lincoln County (TLC). The targets shown in the table below have been established as part of the NCDOT TAM Plan and were adopted by the GCLMPO Board on May 23, 2019.

Table 3-6. Transit Asset Management (TAM) Plan Targets

ASSET CATEGORY - PERFORMANCE MEASURE	ASSET CLASS	USEFUL LIFE BENCHMARK	2019 TARGET
REVENUE VEHICLES			
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	AO - Automobile	8	20%
	BU - Bus	14	20%
	CU - Cutaway Bus	10	20%
	MB - Mini-bus	10	20%
	MV - Mini-van	8	20%
	SV - Sport Utility Vehicle	8	20%
	VN - Van	8	20%
	Other	8	20%
EQUIPMENT			
Age - % of vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Non Revenue/Service Automobile	8	20%
	Steel Wheel Vehicles	8	20%
	Trucks & other Rubber Tire Vehicles	8	20%
	Maintenance Equipment	Agency Determined	20%
	Computer Software	Agency Determined	20%
	Custom 1	Agency Determined	20%
FACILITIES			
Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	Administration	N/A	20%
	Maintenance	N/A	20%
	Parking Structures	N/A	20%
	Passenger Facilities	N/A	20%
	Shelter	N/A	20%
	Storage	N/A	20%
	Custom 1	N/A	20%

PUBLIC TRANSPORTATION AGENCY SAFETY PLAN (PTASP)

A safety plan is also required by agencies that provide public transportation services. The final federal rules for this plan have not been released, but the plan is intended to include methods for identifying and evaluating safety risks, strategies to minimize exposure to hazards and unsafe conditions, as well as a process for conducting an annual review and update of the plan. The plan must also include safety targets for performance measures associated with the transit safety plan. The GCLMPO will coordinate with its public transit agencies to monitor federal updates associated with this plan.

Next Steps

GCLMPO's performance measures and targets must be integrated into the regional planning framework and monitored over time.

Since the original adoption of the 2045 MTP, amendments to the plan have been necessary in order to include updates on the establishment of additional targets, and to report on progress made towards achieving those targets. After this process becomes more integrated into the overall transportation planning efforts of the GCLMPO (and NCDOT), it is anticipated that performance-based planning will influence how transportation investments are made and play a role in determining which projects are included in future MTPs.



Public Involvement

The Gaston-Cleveland-Lincoln MPO involved the public throughout the MTP development process, in adherence to the GCLMPO's Public Participation Process, amended and approved July 28, 2017. The GCLMPO's Public Involvement Plan outlines procedures and policies for public participation.

The GCLMPO's Technical Coordinating Committee (TCC) and MPO Board, including elected officials, city/town managers, planning and engineering staff, and representatives from aviation, public transportation, and economic development agencies from the MPO's three counties, formed the backbone of outreach efforts to the community. All TCC and MPO Board meetings were open to the public, included a public comment period, and were advertised in local area newspapers. The handouts and public comment forms were also available in Spanish.

PUBLIC INPUT AT MPO MEETINGS

The MPO enjoyed strong participation from both voting members and members of the public at its TCC and MPO Board meetings during the MTP development process. Several members of the local state legislative delegation attended and participated in the project identification and evaluation process, along with members of the public. The most frequent topic of discussion for citizens and legislators attending these meetings or submitting comments was regarding the Catawba Crossings project and the widening of I-85. Residents and legislators spoke during public comment sessions both for and against the Catawba Crossings, with the majority supporting this project.

PROJECT IDENTIFICATION INPUT PROCESS MEETINGS

The MPO staff began the project identification process by starting with projects from the previous plan, the 2040 MTP, reviewing them with the TCC and MPO Board in several meetings between March and September 2017. MPO staff solicited projects in April 2017, with a 30-day public comment period from April 1 - April 30. Staff then loaded the project information into a project database for ranking. In July 2017, the MPO's TCC and MPO Board approved the release of a Fiscally-Constrained Draft Project List for a 30-day public comment period from August 1 - August 30. During this time a public comment meeting was held in each of the three counties in Lincolnton, Gastonia, and Shelby. The project lists were distributed to all MPO member city halls and county administration buildings for comments as well. A description of the project ranking process can be found in **Chapter 10 – Financial Plan and Project Prioritization**.

AIR QUALITY CONFORMITY AND DRAFT PLAN COMMENT MEETINGS

The MPO staff released the draft MTP and supporting conformity document on January 29, 2018 for a 30-day public comment period. The two documents were presented to the public at a series of workshops in Shelby, Lincoln, and Gastonia during that time. Comments were received and presented to the TCC and MPO Board for consideration at their March 2018 meetings. Public comments and responses can be found in **Appendix B**. The TCC and MPO Board recommended and approved the 2045 MTP and corresponding conformity report at their respective March 14 and March 22, 2018 meetings.

Environmental Justice (EJ)

ENVIRONMENTAL JUSTICE / TITLE VI OF THE CIVIL RIGHTS ACT

Overview

In 1994, Presidential Executive Order (E.O.) 12898 directed every Federal agency to make Environmental Justice (EJ) part of its mission. The United States Department of Transportation (USDOT), North Carolina Department of Transportation (NCDOT), and the GCLMPO are all committed to a comprehensive, inclusive approach to accomplishing this mission.



“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.” E.O. 12898.

“Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” requires each Federal agency to “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.” E.O. 12898 and the accompanying Presidential Memorandum underscore the importance of utilizing existing laws—including National Environmental Policy Act (NEPA) and Title VI of the Civil Rights Act of 1964 to ensure that all persons live in a safe and healthy environment. Specifically, Title VI prohibits discrimination on the basis of race, color, or national origin in programs or activities receiving Federal financial assistance. Consistent with Title VI and the E.O., the **USDOT Order emphasizes the importance of ensuring that programs or activities funded by USDOT which affect human health or the environment do not discriminate on the basis of race, color, or national origin.**



Involving Traditionally Underserved Populations

The GCLMPO Title VI Policy Statement states:

“It is the policy of the Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) to ensure that no person shall, on the ground of race, color, sex, age, national origin, or disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity as provided by the Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and any other related non-discrimination Civil Rights laws and authorities.”

To respond to the ever-changing demographics of our population a range of methods is used to reach all populations. The end goal is to involve minority, low-income, and limited English proficiency populations in the transportation decision-making process. Differing techniques are utilized for adequate, effective, and meaningful participation of these populations to assist in understanding unique needs, cultural perspectives, and financial limitations of different socioeconomic groups. These include, but are not limited to, the groups outlined below.

- **Limited English Proficiency (LEP)** - the Census Bureau has a range of four classifications of how well people speak English. The classifications are ‘very well’, ‘well’, ‘not well’, and ‘not at all’. For GCLMPO’s purposes, we are considering people that speak English ‘not well’ or ‘not at all’ as Limited English Proficient persons.
- **Blacks/African Americans** – a person having origins in any of the black racial groups of Africa.
- **Hispanics/Latino** – a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- **Asian Americans** – a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
- **American Indians and Alaskan Natives** – a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition.
- **Low-income** – a person whose household income (or in the case of a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services poverty guidelines.



Figure 4-1 shows the GCLMPO distribution of population by race and ethnicity, and **Figure 4-2** shows the GCLMPO density of households with no vehicle available.

The MPO attempted to increase participation by these groups by translating public input documents into Spanish, holding public input meetings outside traditional meeting places, and by holding multiple meetings. The bulleted list in the EJ Public Outreach section that follows contains specific activities targeted to increase public awareness and participation in the MTP within EJ communities.

EJ PUBLIC OUTREACH

Public engagement and participation in decision making is a fundamental principle of EJ, and is critical to achieving outcomes that reflect the needs of all affected stakeholders to the great-

est extent possible. Low-income and minority communities have historically borne disproportionately high or adverse human health or environmental effects of infrastructure projects. Active participation of all affected communities will help ensure that transportation plans and projects avoid, minimize, or mitigate these impacts on low-income and minority populations. For this reason, DOT is committed to developing and using public engagement to encourage EJ populations to participate during the planning and implementation of Federal and State DOT programs, policies, and activities.

The GCLMPO is committed to engaging low-income and minority populations in the transportation decision making process from the earliest stages of planning through project implementation in geographic areas with high concentrations of low-income and minorities.

The GCLMPO staff continues to explore traditional and nontraditional strategies for engaging low-income and minority populations, including regional workshops with State and local officials and online announcements, documents relevant to EJ organized in an easily searchable location on the GCLMPO's website (www.gclmpo.org). On the website, GCLMPO can facilitate informal dialogue and feedback from EJ stakeholders and representatives, as needed. GCLMPO strives to ensure that geographic areas or communities with LEP populations have access to information to the fullest extent feasible and that their participation in providing input into decision making is encouraged.

Public involvement activities related to EJ that occurred during the MTP development process include the following:

- Press Releases and Public Meeting flyers were translated into Spanish
- Flyers in Spanish were posted at the WOW Supermarket in Gastonia (Spanish grocery store)
- Public meeting flyers were posted at Gastonia Transit – Bradley Station
- A GCLMPO Staff member fluent in Spanish was present at all public meetings
- Press Releases and Public Meeting flyers are posted on the GCLMPO website (both in English and Spanish)
- Legal advertisements announcing the public comment periods were sent to major, local publications including the Gaston Gazette, Shelby Star, and Lincoln Times-News
- Public Meeting information was available at Gaston County Health Department
- GCLMPO staff spoke at the Highland Community Meeting (a minority neighborhood in Gastonia) letting residents know about the upcoming MTP public meetings and requesting public comments

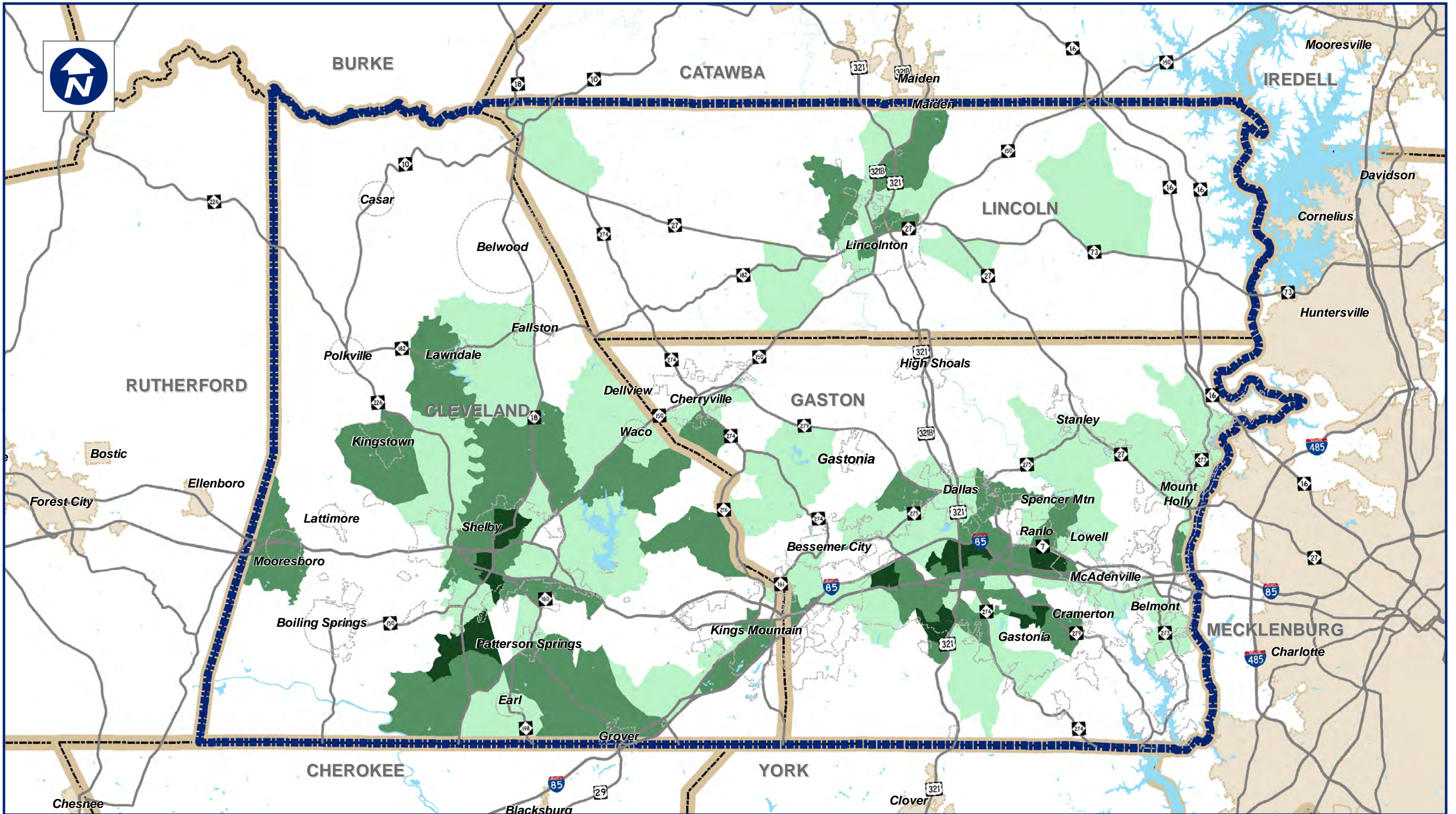


OTHER EJ LEGISLATION AND GUIDANCE RESOURCES

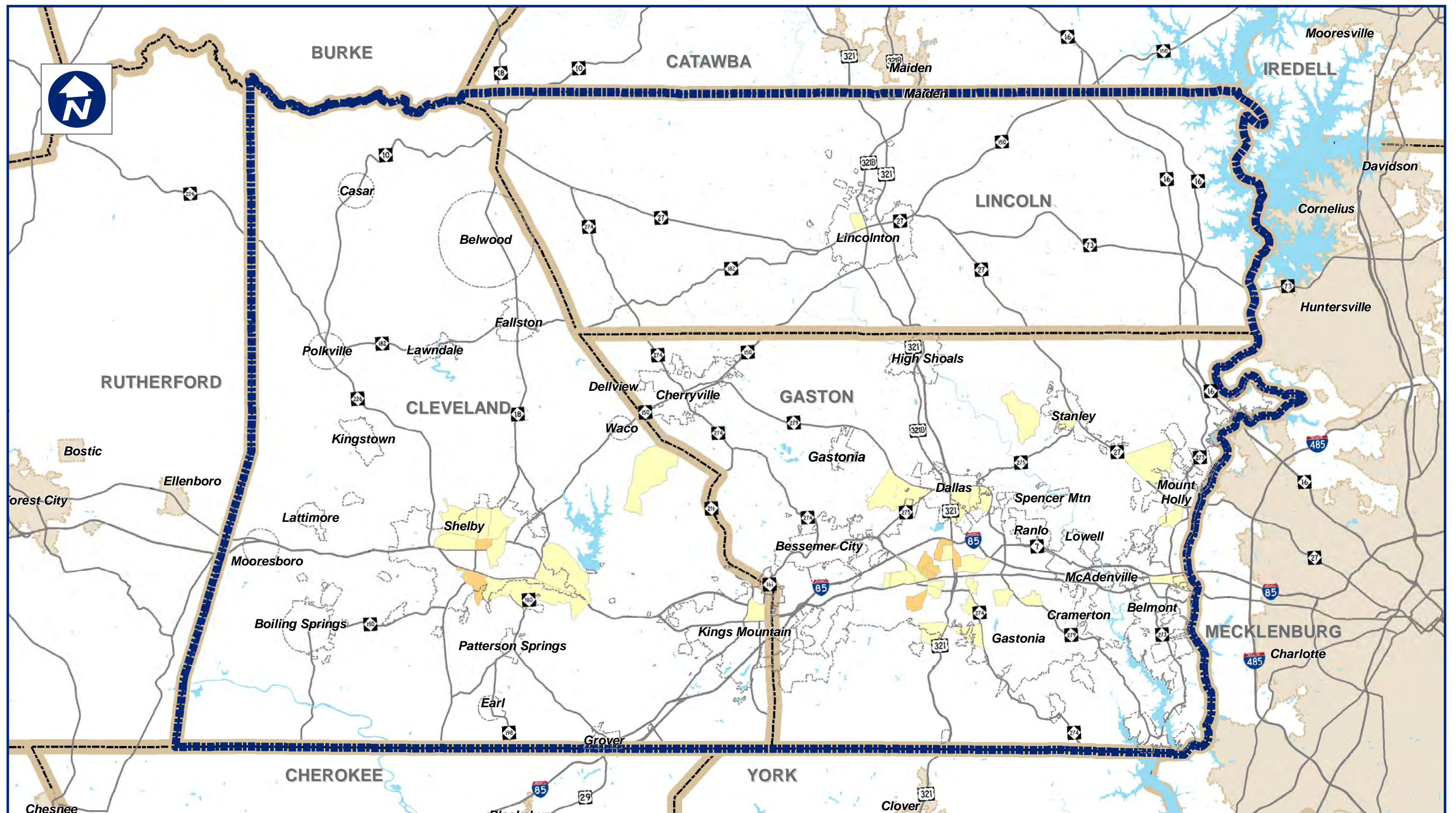
- Title VI Requirements in Metropolitan and Statewide Planning
- Title VI of the 1964 Civil Rights Act
- Title VI Regulation 49 CFR 21
- 23 U.S.C. 140 -- Nondiscrimination
- Executive Order on Environmental Justice
- DOT Order on Environmental Justice
- FHWA Order on Environmental Justice
- 23 CFR 200.5 -- Title VI Definitions
- 23 CFR 200.7 et.al. -- Title VI Policy and State Responsibilities
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
- Impacts of the Civil Rights Restoration Act of 1987 on FHWA Programs
- Title VI Legal Manual, US. Department of Justice, Civil Rights Division
- The Council on Environmental Quality coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives

Along with the federal and state resources listed on this page, the GCLMPO maintains a Title VI Complaint Form and Investigation Procedures. The Title VI Complaint Procedures can be found in **Appendix C**.





LEGEND Highways Major Roads MPO Area Municipalities Counties Regional Waters	All Minorities Population <div> 0 - 15% </div> <div> 15.1 - 30% </div> <div> 30.1 - 60% </div> <div> 60.1 - 100% </div>		 0 2 4 8 Miles	 Metropolitan Planning Organization Date created: 1/5/18	Figure: 4-1 GCLMPO Distribution of Population by Race and Ethnicity 2045 METROPOLITAN TRANSPORTATION PLAN



LEGEND Highways Major Roads MPO Area	Municipalities Counties Regional Waters	Zero Car Households 0-16% 17%-33% 34%-100%	 0 2 4 8 Miles	 GASTON-CLEVELAND-LINCOLN MPO Metropolitan Planning Organization Date created: 1/5/18	Figure: 4-2 GCLMPO Density of Households With No Vehicle Available 2045 METROPOLITAN TRANSPORTATION PLAN

Federal law mandates that long-range metropolitan transportation plans must include a discussion of the types of potential environmental mitigation activities and ways to carry out these activities in order to restore and maintain the environmental functions that may be affected by the transportation plan. Environmental considerations should include, but not be limited to: land-use impacts, economic impacts, air quality and water quality impacts, impacts to threatened or endangered species, floodplain impacts, etc. When planning for any transportation infrastructure, it is important to understand the natural environment that will be impacted by a project. A Natural Resources Inventory should be conducted and updated periodically to identify land cover types, soils, topography, hydrography, and other natural and historic resources that can be easily incorporated into transportation planning efforts.



Air Quality Conformity

The Clean Air Act requires the United States Environmental Protection Agency (EPA) to set limits on how much of a particular pollutant can be in the air anywhere in the United States. National Ambient Air Quality Standards (NAAQS) are the pollutant limits set by the EPA; they define the allowable concentration of pollution in the air for six different pollutants – Carbon Monoxide, Lead, Nitrogen Dioxide, Particulate Matter, Ozone, and Sulfur Dioxide.

The Clean Air Act specifies how areas within the country are designated as either “attainment” or “non-attainment” of an air quality standard, and authorizes EPA to define the boundaries of non-attainment areas. For areas designated as non-attainment for one or more NAAQS, the Clean Air Act defines a specific timetable to attain the standard and requires that non-attainment areas demonstrate reasonable and steady progress in reducing air pollution emissions until such time that an area can demonstrate attainment. Each state must develop and submit a State Implementation Plan (SIP) that addresses each pollutant for which it violates the NAAQS. Individual state air quality agencies are responsible for defining the overall regional plan to reduce air pollution emissions to levels that will enable attainment and maintenance of the NAAQS. This strategy is articulated through the SIP.

In North Carolina, the agency responsible for SIP development is the North Carolina Department of Environmental Quality, Division of Air Quality (NC DEQ/DAQ). The delineation of non-attainment areas, coupled with the implementation of strategies to control emissions from on-road mobile sources, are significant elements of the state’s plan to improve air quality.

These actions link transportation and air quality planning activities within the non-attainment areas. The process of ensuring that a region's transportation planning activities contribute to attainment of the NAAQS, or "conform" to the purposes of the SIP, is referred to as transportation conformity. In order to receive federal transportation funds within a non-attainment or maintenance area, the area must demonstrate, through a federally mandated conformity process, that the transportation investments, strategies and programs, taken as a whole, contribute to the air quality goals defined in the state air quality plan.

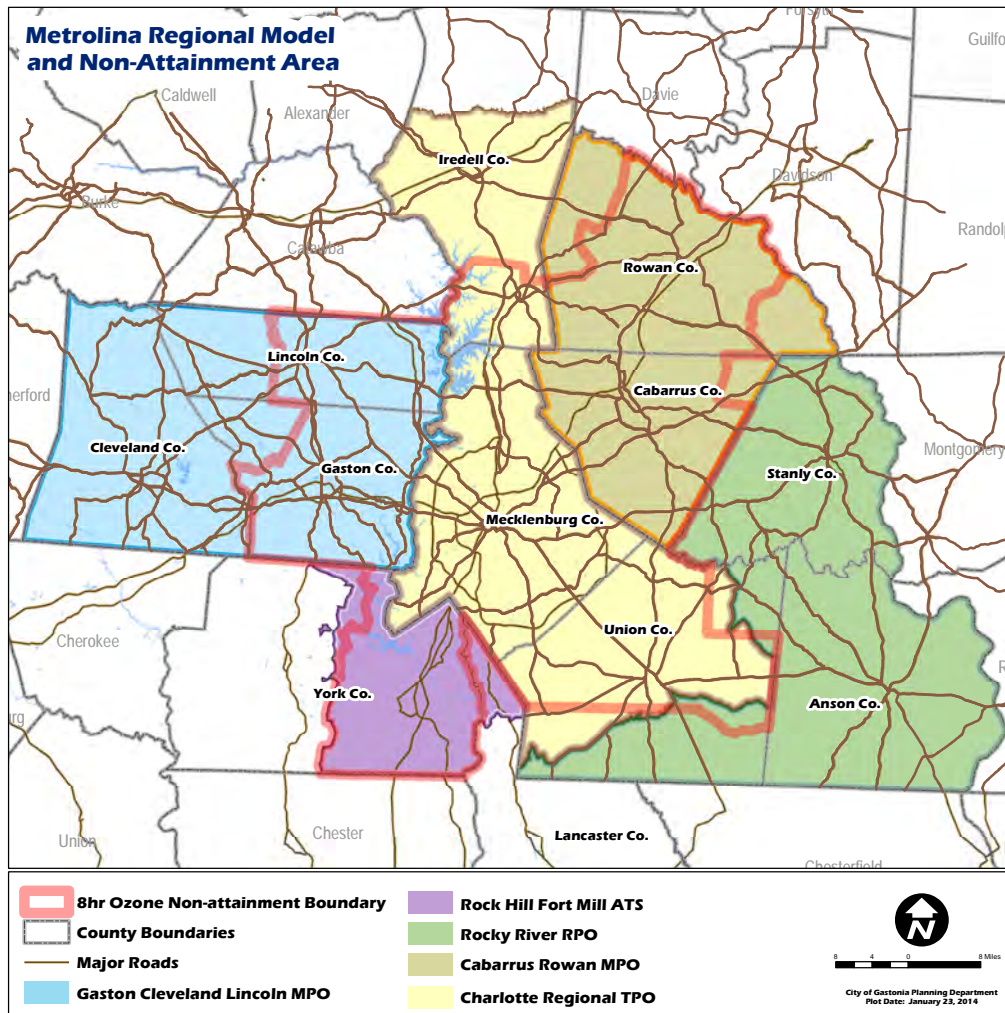
In order to ensure the conformity requirements are met, Section 176 (c) of the Clean Air Act authorizes the EPA Administrator to "promulgate criteria and procedures for demonstrating and assuring conformity in the case of transportation plans, programs, and projects." This is accomplished through the Transportation Conformity Rule, developed by the EPA to outline all federal requirements associated with transportation conformity. The Transportation Conformity Rule in conjunction with the Metropolitan Planning Regulations direct transportation plan and program development as well as the conformity process.

The GCLMPO must approve and adopt a Conformity Analysis and Determination Report for the Metrolina Area 2045 Metropolitan Transportation Plans and for the FY 2018-2022 Transportation Improvement Programs. The purpose of this report is to comply with the provisions of the Clean Air Act Amendments of 1990 in concurrence with all conformity requirements as detailed in 40 CFR Parts 51 and 93 (the Transportation Conformity Rule) and 23 CFR Part 450 (the Metropolitan Planning Regulations). It demonstrates that the fiscally-constrained metropolitan transportation plans and the transportation improvement programs eliminate or reduce future violation of the NAAQS.



All federally funded projects, as well as regionally significant projects regardless of funding source, in areas designated by the EPA as air quality non-attainment or maintenance areas, must come from a conforming Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP). The Metrolina region is required by 40 CFR 51 and 93 to make a conformity determination on any newly adopted or amended fiscally-constrained MTP and TIP. In addition, the United States Department of Transportation (USDOT), specifically, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), must make a conformity determination on MPO Plans in the Metrolina region and the related TIPs in all non-attainment areas.

Figure 5-1. Metrolina Regional Model and Non-Attainment Area



40 CFR Part 93 Requires That A Conforming Transportation Plan Satisfy Six Conditions:

- The transportation plan must be consistent with the motor vehicle emissions budget(s) in an area where the applicable implementation plan or implementation plan submission contains a budget (40 CFR Part 93.118).
- The transportation plan, TIP, or FHWA/FTA project not from a conforming plan must provide for the timely implementation of TCMs from the applicable implementation plan (40 CFR Part 93.113b).
- The MPO must make the conformity determination according to the consultation procedures of 40 CFR Part 93.105.
- The conformity determination must be based on the latest emissions estimation model available (40 CFR Part 93.111).
- The conformity determination must be based on the latest planning assumptions (40 CFR Part 93.110).

Figure 5-1 shows the Metrolina Regional Model and Non-Attainment Area.

For the 2045 MTP, lists of projects were developed based on congestion, identified local needs and other factors. Projects were ranked and broken into horizon years by estimated project costs and projected available funding.

The Conformity Report shows that the Region's 2045 MTPs, the Region's 2018-2022 MTIPs, and projects from the State's 2018-2022 STIP meet each condition. These analyses are consistent with the Transportation Conformity Regulation (40 CFR Parts 51 and 93).

The GCLMPO Metropolitan Transportation Plan and 2018-2022 MTIP accomplish the intent of the North Carolina SIP. This conformity determination is based on the regional emissions analysis that uses the transportation network approved by each MPO and NCDOT for the 2045 MTP, and the emissions factors developed in cooperation with the North Carolina DEQ.

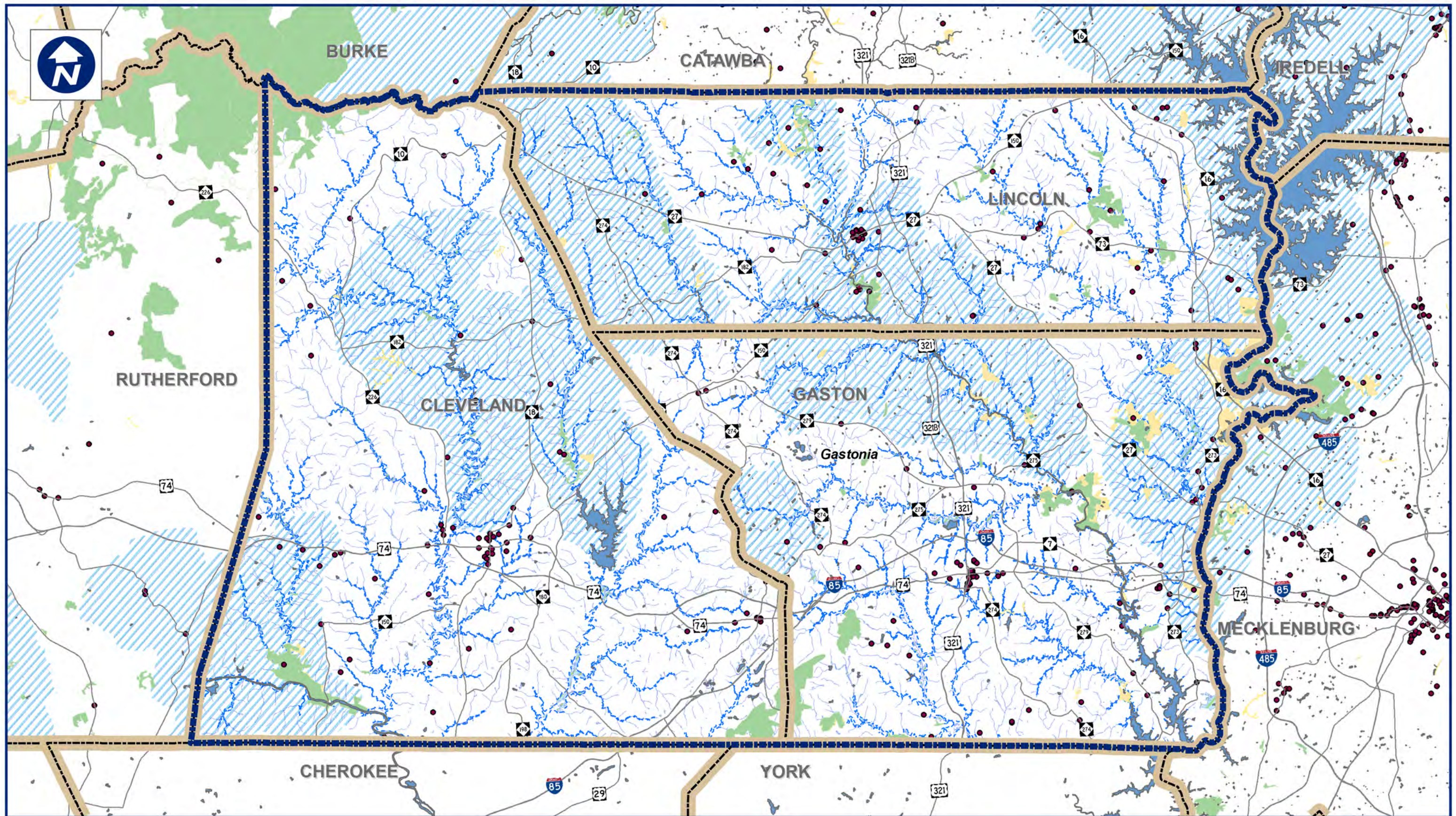
Stormwater Management

The planning phase of any transportation project offers the greatest opportunity to avoid negative water quality impacts on a corridor. Proposed alignments for a project should avoid sensitive natural resources to the greatest extent possible. Oftentimes, avoidance is not entirely feasible. In these instances, providing an undisturbed buffer should be considered. Preserving natural areas such as undisturbed areas, floodplains, stream corridors, and wetlands helps to mitigate stormwater runoff and encourages water table recharge.

Undisturbed buffers also serve as a natural filter, trapping pollutants from urban runoff in order to keep our water supplies healthy.

Once a project is constructed, when precipitation of any accumulation occurs over highways and other impervious surfaces, the resulting stormwater can carry debris, sediment, and chemicals into water sources, having a huge impact on water quality. GCLMPO will work with NCDOT to identify methods to control stormwater runoff along local streets and highways. **Figure 5-2** shows the natural features in the MPO area.





LEGEND Counties MPO Area Water Body	Municipalities Highways 1% Annual Chance Flood Hazard Historic Site (NR, SL, DOE)	Natural Heritage Natural Area Land Trust Conservation Wetlands Water Supply Watershed	<p>GASTON-CLEVELAND-LINCOLN</p> <p>Metropolitan Planning Organization Date created: 1/12/18</p> <p>0 2 4 8 Miles</p>	<p>Figure: 5-2</p> <p>GCLMPO Natural Features</p> <p>2045 METROPOLITAN TRANSPORTATION PLAN</p>
	<p>5-61</p>			

Health Assessments

Transportation decisions affect our individual lives, economy and health. Everyone needs to use various modes of transportation to get to work or school, to get medical attention, to access healthy foods at grocery stores and markets, and to participate in countless other activities every day. However, too many people are negatively impacted by inequitable transportation decisions that are detrimental to public health.

The resources below provide additional information on the links between public health, equity and transportation and advocacy efforts to ensure that transportation policy helps, rather than hinders, public health.

Our nation's transportation system has a direct and costly effect upon human health, by way of traffic accidents, mobile source air pollution, and influence on physical activity. These effects run into the hundreds of billions of dollars each year. Yet health is typically not considered in transportation policy and planning. Opportunities abound to increase alternative transportation options that support healthy activities like walking and cycling. ***The National Prevention Strategy and Action Plan*** is working to boost Americans' health in part through encouraging the development of livable, walkable communities, bike lanes, and other healthy transit options. This snapshot, published online in October 2012, examines the health impacts and costs that should be factored into decisions about transportation and community development at all levels.



PUBLIC HEALTH AND EQUITY PRINCIPLES FOR TRANSPORTATION

Research increasingly indicates that current transportation investments can have a profound impact on public health, particularly for the poor, the elderly, people with disabilities and other vulnerable populations. These impacts may include increased risk of obesity, cancer, mental health disorders, asthma and heart disease. The public health community is strongly supportive of transportation investments that support the growth and establishment of health and equity in all communities; this is critical to the nation's economic revival and health.

“The public health community envisions a transportation system that is carefully designed to support and improve community health. We must ensure that the billions of public dollars spent on transportation projects enhance the health, equity and well-being of communities.”

The GCLMPO has developed ten principles to be used in the review of transportation policies to ensure that health and equity are well-represented:

1. Encourage transportation and land-use planning policies, such as a Complete Streets policy, that support healthy communities.
2. Establish performance measures to promote safe, affordable and equitable public transit and alternative modes of transportation such as walking and cycling.
3. Conduct Health Impact Assessments (HIA) to inform and guide transportation policy, projects and planning.
4. Foster the participation of local communities and underserved populations in all stages of the transportation planning and development process.
5. Expand funding of community-based transportation programs and services that promote healthy lifestyles and provide access to healthy food and water, affordable housing, employment, schools, health care and recreation.
6. Fund programs that expand transportation options for disadvantaged populations and people with disabilities, and that promote safe, convenient transportation options for children and seniors.
7. Design and construct multi-modal transportation systems to meet the needs of users of all ages and abilities, including those in rural areas.
8. Collect data and fund research to evaluate how transportation and planning policies affect public health and health equity.
9. Support reductions in transportation-related emissions and greenhouse gases.
10. Increase vehicle, motorist, passenger, cyclist and pedestrian safety.

PHYSICAL ACTIVITY IN THE BUILT ENVIRONMENT POLICY INITIATIVE

The GCLMPO is highly involved with the Gaston County Healthcare Commission's Walkability and Obesity Policy Workgroup. This Workgroup is focused on issues within Gaston County, but GCLMPO hopes to mirror this effort in Cleveland and Lincoln counties as well. The Walkability and Obesity Policy Workgroup is currently comprised of county and municipal planners and parks and recreation staff, health educators from the Gaston County Department of Health and Human Services, and representatives from CaroMont Health, Carolina Thread Trail, Gaston County Cooperative Extension, Gaston County Schools, and Gaston Together. As excitement for the work that the group is doing grows, participation will continue to expand.



The highest priority of the Walkability and Obesity Policy Workgroup is to encourage local governments, businesses, and nonprofits to adopt a Health in All Policies (HiAP) approach to decision making. HiAP is a collaborative approach that integrates health considerations into traditionally non-health/public health policy-making and program areas. HiAP improves personal health while contributing to community wellbeing and prosperity, with the goal of health equity.

The workgroup seeks to make physical activity an integrated part of daily life by identifying policy barriers, publicizing and educating officials about the barriers, and encouraging policy changes that will result in transportation decisions that include all types of transportation users.

For most of the history of the United States, cities were designed and built in ways that made physical activity a normal part of daily life. Houses were built near workplaces, and sidewalks or paths were a standard part of street systems. People walked to work, to school, to church, and to the store. Various land uses were located in close proximity to each other, so people could satisfy their daily needs on foot. With the advent of the automobile, this changed. As narrow, walkable city streets designed and scaled for horses and people changed into wide roads built for automobiles, walking became dangerous.

In the post-World War II era, federal and state transportation policies were dominated by the push to build new highways and freeways so people could quickly travel from the city center to areas outside of the city. People began living farther from work, school, church, and stores in large properties that were increasingly spread out. This suburbanization gave people more freedom to travel around their cities and regions, but reduced the opportunity for physical activity in their daily lives. Physical activity changed from a routine and incidental part of life to an intended part of life.



Walking or riding a bicycle switched from being a transportation choice to an exercise plan.

While land use decisions are generally made by local governments, transportation policies and decisions are made by state governments. North Carolina has made improvements in linking land use and transportation policies and in seeking local and regional government input into state transportation policies, but state transportation policies still focus on highways and automotive transportation. NCDOT adopted a “Complete Streets” policy in 2009 that outlined a policy of including all transportation users in street design and building projects. This was an important step in designing incidental physical activity back into our daily lives, but how the Complete Streets policy is implemented is crucial if the policy is to be successful.

Since street rights-of-way are often the largest public space in cities, how streets are designed and built makes a tremendous difference in the amount of incidental physical activity a person gets each day. If streets are designed and built with pedestrians and bicyclists in mind – and include sidewalks, bicycle lanes, narrow vehicle travel lanes, street trees, street furniture, and safe intersection crossings – then physical activity can again become an incidental part of life. This can only be accomplished by making policy changes at the state level at NCDOT and on the local level by making zoning changes to allow and promote walkable, mixed-use communities with an urban design.

The Eat Smart, Move More NC website provides staggering statistics on the results of a more sedentary lifestyle common to North Carolinians. According to the NC Division of Public Health, an estimated five million North Carolina adults (66%) are either overweight or obese. According to the 2015 NC Behavioral Risk Factor Surveillance System (BRFSS) survey, over half (52%) of adults do not get the recommended 150 minutes per week of moderate-intensity aerobic physical activity and almost three out of four (71%) do not meet the weekly muscle-strengthening exercise recommendations.

In addition, the NC Division of Public Health reports that North Carolina has the 23rd highest overweight and obesity rates among children age 10 to 17 in the nation, with about one in three (32.3%) high school students in North Carolina are either overweight or obese.

According to the Burden of Obesity in NC report, the total cost of unhealthy lifestyles in North Carolina was estimated to be \$57 billion in 2008. Making transportation and land use decisions that promote incidental physical activity will result in healthier North Carolinians and will reduce cost of unhealthy lifestyles.

There are specific characteristics of a healthy built urban environment that should be addressed by policy:



1. Location of Development
 - Transit Oriented
 - Downtowns
 - Along Corridors
 - Mixed Use Centers
2. Urban Form and Character
 - Building Relationship to Street
 - Design and Aesthetics
3. Transit Access and Availability
 - Proximity
 - Frequency
 - Comfortable pedestrian environment
4. Connectivity of Streets
5. Roadway Design/Complete Streets
 - Width of Street and travel lanes
 - Speed design
 - Availability of on street parking
 - Street trees
 - Pedestrian signals, refuge islands, crosswalks
 - Flexibility in standards for retrofits within existing right of way
 - Sidewalks set back from curb on all streets
6. Bicycle Facilities
 - Proximity
 - Design
 - Completeness of Network
7. Access to Parks and Open Space
 - Proximity
 - Quality
 - Perceived Safety

Existing and Future Conditions / Socio-Economic Projections

07



Overview

Socio-economic projections are the basis for estimating future travel demand in an area. The number and distribution of jobs, people, and schools play a key role in what transportation facilities are used, when they are used, and who uses them. Developing an inventory of what land uses and population patterns exist in a particular area is difficult enough; it is even more difficult to accurately project how that same area will behave in 20+ years. How many people will live in the area? Where will people work? Will there be new schools built? This chapter outlines the process, assumptions, and outcomes of this socio-economic projection process for the Gaston-Cleveland-Lincoln MPO area.

The local governments within each of the counties of the bi-state Metrolina Regional Travel Demand Model (Metrolina Model), worked to project county level growth, utilizing CommunityViz. The Metrolina CommunityViz Model 16, v. 1.0 (MCM) is the product of a region-wide initiative to develop more consistent and replicable methods for allocating future year socioeconomic data to Traffic Analysis Zones (TAZ) used in the Metrolina Model. GCLMPO members worked to collectively determine how much growth would occur in each of the districts and individual TAZs throughout the three counties.

This chapter describes the development patterns, both in existing and future conditions, at the district level for each of the three counties in the MPO. The geographies for the nine districts, three in each of the three counties, were developed as a part of the Metrolina Model. These districts have distinct travel and development patterns, and so specific projections are made for each of the districts.

Existing Land Uses

The descriptions of the individual districts within each of the counties are provided later in this chapter. The aggregated existing (2013) and future land use descriptions come from an ambitious coding of existing land uses, and depictions of build out patterns based on approved land use plans for municipalities and counties. This work was undertaken by Centralina Council of Governments (CCOG) for a Housing and Urban Development-funded sustainable communities project. The 2013 data is currently the most up-to-date, as the CCOG will be working to update this information in 2018.

The GCLMPO is separated into nine districts across the three counties for purposes of projecting growth. These districts form the basis for demographic projections through 2045. How are they currently developed? How are they expected to grow in comparison to the rest of their county? The following district descriptions help provide background on particular portions of the three counties, and how and why they will grow in the coming decades.



As shown in **Figure 7-1** and **7-2** below, suburban residential land uses dominate the existing land uses. Gaston and Cleveland counties have a significantly higher percentage in industrial uses, while Lincoln County has a higher percentage of suburban land uses. Based on adopted land use plans, the three counties have planned future land uses in a remarkably similar pattern. Suburban residential development will still be the most common land use type, but rural residential land uses will become significantly more common. These proportions are based upon the assumption that all land is developed, which is not expected in any of the counties for many years. The actual projected land uses through 2045 are described for each of the nine districts in the study area later in this chapter.

Figure 7-1. GCLMPO Developed Land Use Patterns

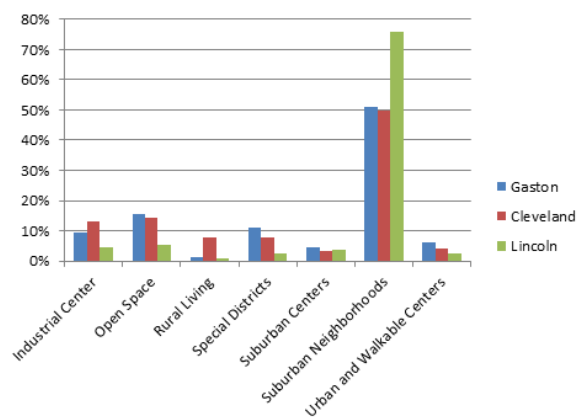
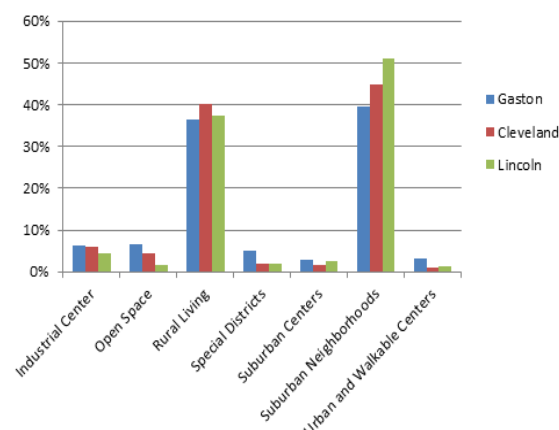


Figure 7-2. GCLMPO Build Out According to Land Use Plans



CLEVELAND COUNTY

District name: Shelby

Shelby is the largest city and county seat for Cleveland County. Shelby has an established downtown that is home to a range of public sector, professional, and retail sites. Shelby's residential pattern is a mix of multi-family and small-lot single family, with some larger lot single-family development located on the edges of the city. The majority of Shelby's retail and service jobs are located along the existing US 74 corridor, known as Dixon Blvd. Agricultural and large-lot residential land uses dominate the areas outside of Shelby. Apart from US 74, there are no multi-lane roads in the unincorporated areas, so most future growth will occur in a scattered pattern throughout the district, as well as at interchanges along the future Shelby Bypass.



District name: Kings Mountain

Kings Mountain is the second largest city in Cleveland County, with a small portion of its geography in Gaston County. I-85 and US 74 intersect immediately east of the city. The Kings Mountain area has experienced a loss of manufacturing and transportation jobs over the past decade, although the area has recently experienced new jobs announcements. Kings Mountain's employment centers are at interchanges along I-85 and US 74.

Population growth is expected to be moderate through 2045, with most growth occurring in the unincorporated parts of the district through large-lot single-family housing.

District name: Northwest Cleveland County

Northwest Cleveland County encompasses the areas north and west of Shelby. It is characterized by extremely low density residential patterns, with several small municipalities, primarily at the intersection of NC routes. There has been little subdivision-style growth in the area in recent years, which is not expected to change through 2045. The area is agricultural in nature, along with significant forested portions in the northern areas near the South Mountain State Park. Apart from US 74, there are no multi-lane roads in the district. Most workers commute to Shelby for work, although a rising number of professionals live in the area and telecommute or work non-traditional schedules, such as working in the aviation industry at Charlotte-Douglas Airport. The projected population and commercial growth is projected to be accommodated in smaller individual developments and large-lot single family housing, as opposed to master planned developments.

LINCOLN COUNTY

District Name: Denver

The eastern third of Lincoln County is commonly referred to as “Denver.” This area has historically been comprised of lakefront homes and low density residential development, but over the past decade has experienced significant growth pressures, similar to other portions of Lake Norman in Iredell and Mecklenburg Counties. Compared to the I-77 corridor serving Charlotte’s northern suburbs and southern Iredell County, the Denver portion of Lincoln County, or the NC 16 corridor, has not developed as intensely. However, with the new multi-lane NC 16, actual travel time from Uptown Charlotte to Denver is now the same as it is to Mooresville. The next thirty years are projected to see growth in the area at rates similar to Davidson, Cornelius, Huntersville, or Mooresville of the past decade. Eastern Lincoln County’s population growth from now through 2040 will primarily occur as single-family subdivision developments on undeveloped land, although multi-family housing in the form of townhouses along the Business NC 16 corridor will occur more frequently as a reflection of market demands. The Denver area will continue to be the fastest-growing part of Lincoln County, becoming the most populated part of the county by 2030.

Employment growth between 2015 and 2045 will be concentrated along the NC 16 corridor and will continue to outpace employment growth in Lincolnton and western Lincoln County. Since 2010, the Denver area has witnessed high employment numbers in the retail sector. In the next thirty years, employment in the food and beverage and convenience store industries in particular is expected to increase. Another industry that is expected to grow is the high-traffic industrial and service jobs as the area matures and the county looks to increase employment opportunities through office park development.

Compared to Gaston, Cleveland, and the rest of Lincoln County, the Denver area has disproportionately low employment in the low-traffic service, low-traffic industrial, and educational sectors, although the area will continue to mature and see an increase in overall jobs in all categories. Despite this growth, the Denver area will primarily remain a bedroom community for Mecklenburg County



District Name: Lincolnton

Lincolnton serves as the county seat. The urban form of city’s historic core bears strong similarity to that of Shelby, but at a scale approximately half the size. The downtown is anchored by legal and public sector jobs, with limited retail in proximity. Most retail establishments are located on the eastern side of the city. The majority of city residents live in small-lot single-family housing, although nearly all multi-family housing in Lincoln County is also located in Lincolnton. There is little residential redevelopment occurring, with the majority of the population growth being accommodated in new housing on the edge of the city. Major road corridors, such as NC 150 and NC 27, are seeing very little non-residential redevelopment.

Lincolnton is projected to grow through 2045, but at a slower rate than Denver. Due to the availability of land surrounding the city, the vast majority of new development will occur along the edges, particularly residential development in the form of smaller subdivisions with moderate lot sizes of one-half to one-acre lots.

District Name: West Lincoln

Western Lincoln County is overwhelmingly agricultural, with no multi-lane road access and little public water or sanitary sewer service. There are no new roads proposed in the area to affect development patterns. This portion of the county is projected to experience little absolute growth through 2045, with any population increases accommodated in large-lot (larger than one acre) single-family development scattered throughout the district.



GASTON COUNTY

District Name: Eastern Gaston

Eastern Gaston County has experienced a significant increase in development pressures from Charlotte over the past decade, primarily due to its proximity, access, and lower housing costs. This area has for decades been characterized by small town development around textile and other manufacturing plants. Many of these plants have closed over the past decade, which has changed commuting patterns and resulted in lower traffic on some local roads.

The residents of Eastern Gaston County do not have a predominant commuting pattern. Many do commute to Mecklenburg County, as well as to Gastonia, but a significant number also work nearby. The area is home to a range of retail, manufacturing, professional, and service job centers. The long-term projections for employment show the number of jobs growing slightly faster than the population, which should reduce commuting pressures for some residents. The growth in residential and non-residential development will be a mix of downtown redevelopment and greenfield development. This continues the trend from the past few years which have seen revitalization of several of the downtowns in the area.

District Name: Gastonia

Gastonia has been the economic heart of the county for many years. It is the County seat and its largest city by far. Growth continues along its edges as undeveloped land is built upon and annexed in exchange for municipal services. Gastonia is home to many current and former textile mills and factories, with a corresponding “mill village” residential development pattern around them. This small lot pattern has recently become attractive for residential renovation.



Gastonia is bisected by US 321 and I-85, and these multi-lane facilities give city residents excellent access to adjacent counties. Much of the retail and service employment for the district is located at interchanges on these two routes. Workers in Gastonia travel from the surrounding counties, while some live nearby. Gastonia is expected to grow in population and jobs in equal proportions, with growth being a mix of downtown and neighborhood revitalization, and new development along the city's edges and nearby municipalities. The City of Gastonia has worked hard to redevelop former mills as residential and employment centers, and this hard work is starting to pay dividends in new infill activity.

District Name: Northwest Gaston

The largest municipality in this district is Cherryville, which is located at the intersection of NC 279 and NC 150. The city has seen a significant decline in employment over the past decade due to manufacturing and distribution firm closures and relocations. Despite these challenges, the area has maintained its population, and is

expected to grow slightly over the coming decades, although employment will grow faster than the population. The population outside of Cherryville primarily lives in single-family homes build along existing roads, as opposed to subdivision development patterns. The area has a strong agricultural base, with a significant number of horse farms.

This area is likely to remain primarily rural and experience a continual low density growth rate as public water and sewer systems do not currently exist in this district, and may not occur in the foreseeable future. This may change, however, if the County's Public Water and Sewer Plan is implemented or the cities of Cherryville or Bessemer City, or the Town of High Shoals, extend water and sewer lines. With sewer capacity being increased in High Shoals, this will attract growth in the future and impact its rate of growth as well as give the town more command over the type of growth that occurs within its boundary.

Cherryville is very interested in having both NC 279 and NC 150 widened to provide increased access to I-85 and US 74, particularly for manufacturing and transportation operations. If widened, these roads are not expected to appreciably change the development patterns however, as the two corridors are currently relatively uncongested except near US 321.

Table 7-1 shows the GCLMPO area population growth by county, and **Table 7-2** shows the GCLMPO area population growth by district.

Table 7-1. GCLMPO Area Population Growth by County

POPULATION	2015	2045	ABSOLUTE GROWTH	PERCENT GROWTH
Gaston County	213,869	267,505	53,636	25%
Lincoln County	81,666	130,260	48,694	60%
Cleveland County	97,674	133,658	35,984	37%
Total	393,209	531,523	138,314	35%

Table 7-2. GCLMPO Area Population Growth by District

POPULATION BY DISTRICT	2015	2045	ABSOLUTE GROWTH	PERCENT GROWTH
Gastonia	117,106	150,692	33,586	29%
Eastern Gaston	70,526	87,990	17,464	25%
Denver	27,467	58,877	31,410	114%
Lincolnton	38,832	55,113	16,281	42%
Kings Mountain	32,637	44,764	12,127	37%
Shelby	34,459	51,932	17,473	51%
Northwest Gaston	26,237	28,823	2,586	10%
West Lincoln	15,367	16,370	1,003	7%
NW Cleveland	30,578	36,962	6,384	21%

Socio-Economic Projection Process

The modeled study area includes three counties, 395,000 people and 154,000 jobs in 1,140 square miles. To effectively analyze this large area for travel behavior, future transportation needs, and air pollutants emitted by the motor vehicles used in the region, the study area is broken into Transportation Analysis Zones, or TAZs. Each of these TAZs includes over a dozen independent pieces of information about the travel behavior of that particular geography.

The GCLMPO is required to develop projections for the following variables:

Total Population

- Population in households
- Population in group quarters (dormitories, group homes, etc.)

Total Jobs

- Industrial jobs
- High-traffic Industrial jobs
- Retail jobs
- High-Traffic Retail jobs
- Low-Traffic Service jobs
- High-Traffic Service jobs
- Education jobs
- Office and Government jobs

Student Enrollment

- K-8
- 9-12
- College

The GCLMPO must develop projections for each of these variables by decade (2025, 2035, and 2045) for each of the individual TAZs. These projections were approved in July 2016 by the GCLMPO Board, and are maintained by Charlotte Department of Transportation staff, who serve as model custodian for the Metrolina Model.

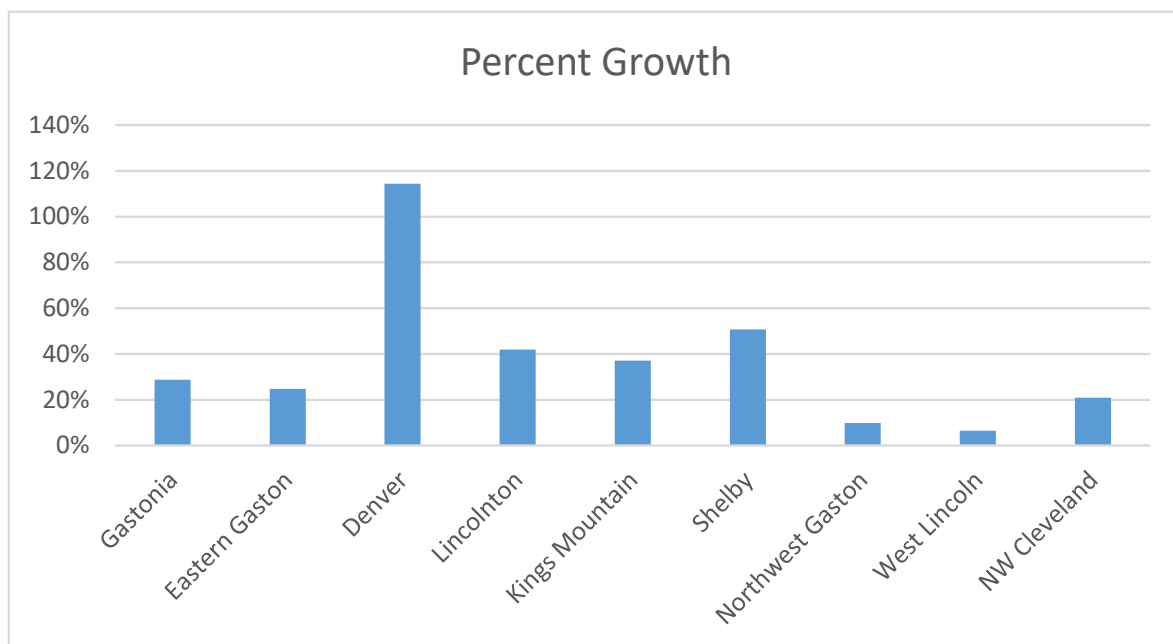
POPULATION PROJECTIONS

Although the GCLMPO's population will grow by 35 percent between 2015 and 2045, this growth is not evenly distributed throughout the GCLMPO area. In absolute terms, the central and eastern portions of Gaston County, as well as eastern Lincoln County, will see the most growth, with much of that development in the form of single-family suburban and exurban development. Lincolnton, Kings Mountain, and Shelby will see moderate growth, primarily on the edges of their developed areas, while the remaining portions of the three counties will see little population growth apart from scattered individual single-family construction.

Figure 7-3 shows the 2015-2045 district level population projections.



Figure 7-3. 2015-2045 District Level Population Projections – Percent Change



JOBS PROJECTIONS

The three counties have seen significant changes over the past decade, with factory closings and shifts in commercial centers. New employment growth has occurred along I-85, NC 16, US 74, and US 321, and this trend is expected to continue into the future. All portions of the GCLMPO area will see job growth through 2045, but central and eastern Gaston County, as well as eastern Lincoln County, will experience the highest absolute increases in jobs. The remaining districts will each see between three and 38 percent more jobs, although the share of jobs by type will vary. The increase in jobs will slightly lag the increase in population, as the increased percentage of retirees will depress overall workforce participation rates.

Table 7-3 shows the GCLMPO area job growth by county, and **Table 7-4** shows the GCLMPO area job growth by district.

Figure 7-4 shows the 2015-2045 district level job projections for the GCLMPO.

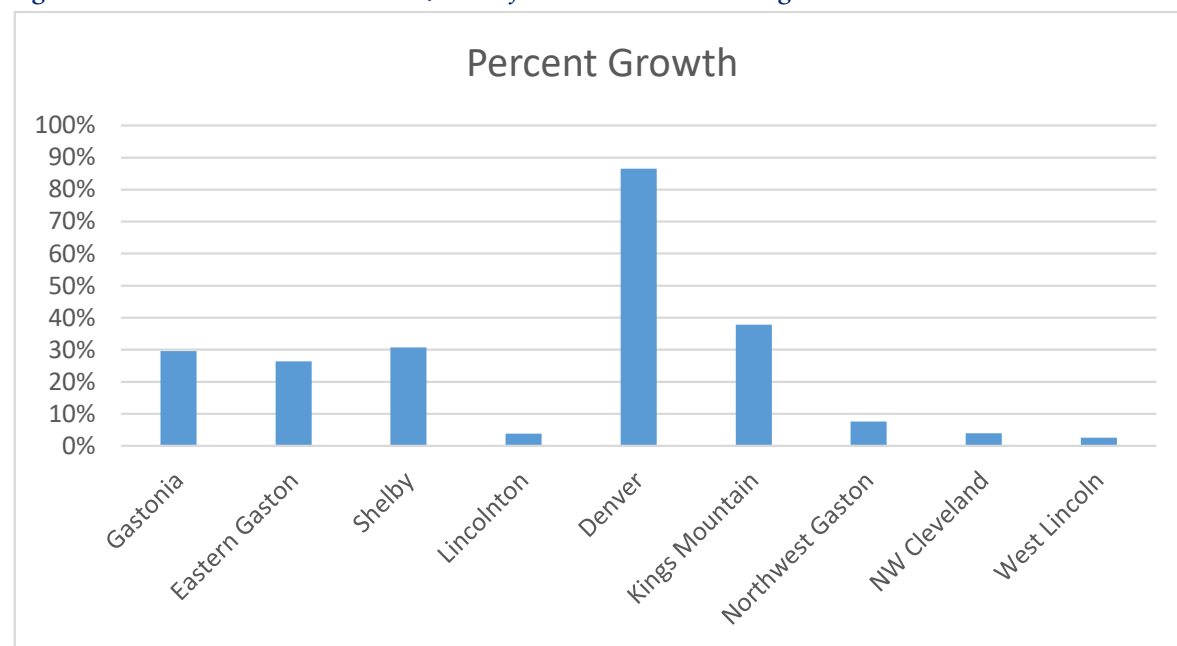
Table 7-3. GCLMPO Area Job Growth by County

JOB	2015	2045	ABSOLUTE CHANGE	PERCENT CHANGE
Lincoln County	28,294	37,634	9,340	33%
Gaston County	88,953	113,179	24,226	27%
Cleveland County	36,367	46,493	10,126	28%
Total	153,614	197,306	43,692	28%

Table 7-4. GCLMPO Area Job Growth by District

POPULATION BY DISTRICT	2015	2045	ABSOLUTE CHANGE	PERCENT CHANGE
Gastonia	58,969	76,438	17,469	30%
Eastern Gaston	23,927	30,225	6,298	26%
Shelby	21,486	28,090	6,604	31%
Lincolnton	16,213	16,829	616	4%
Denver	10,031	18,703	8,672	86%
Kings Mountain	8,646	11,921	3,275	38%
Northwest Gaston	6,057	6,516	459	8%
NW Cleveland	6,235	6,482	247	4%
West Lincoln	2,050	2,102	52	3%

Figure 7-4. 2015-2045 District Level Job Projections – Percent Change



K-12 STUDENT PROJECTIONS

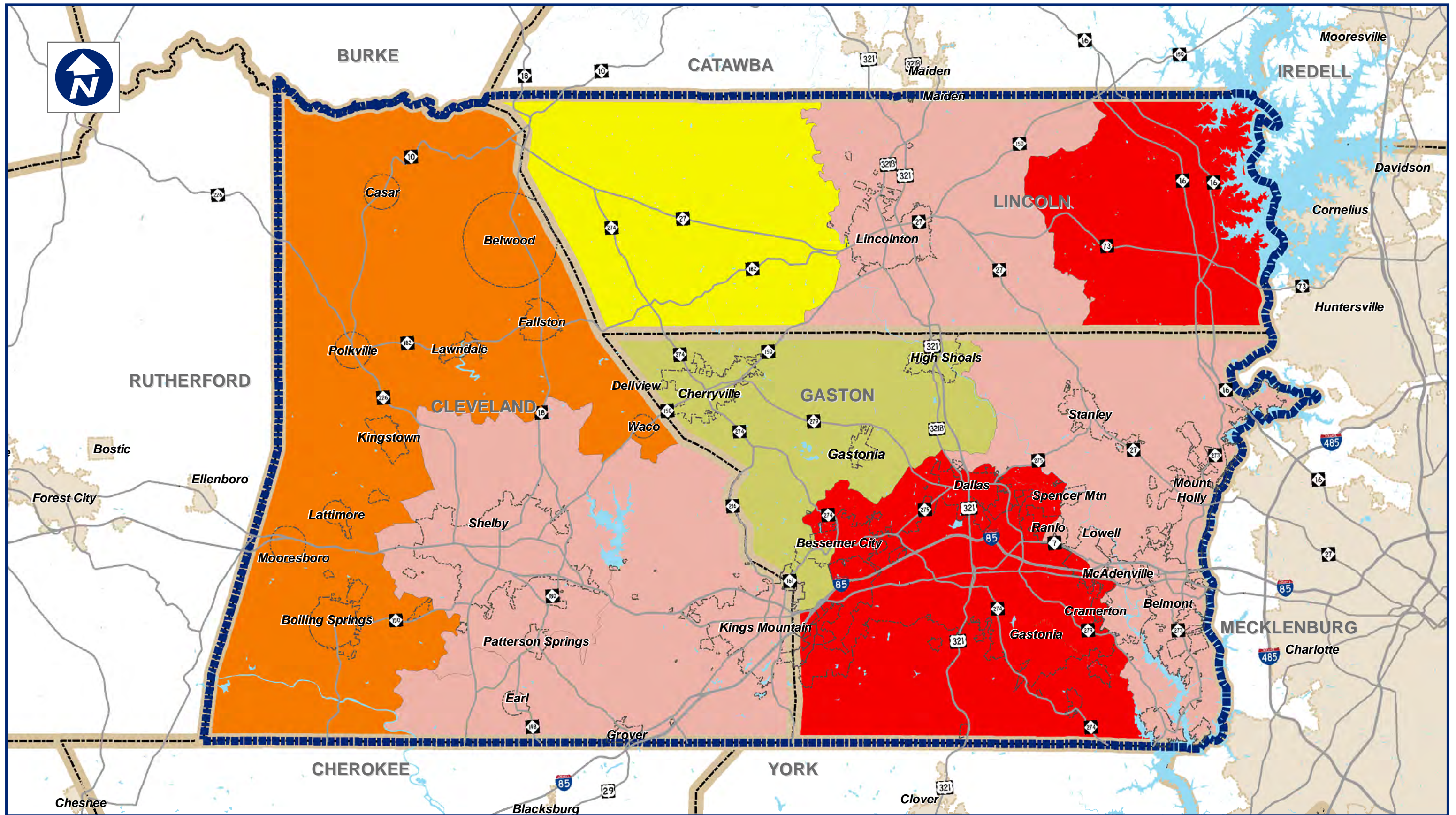
K-12 grade student enrollment projections typically correlate with household population growth. Knowing where student growth will occur is important in projecting future travel patterns, as education-related travel rivals commuting to work as a cause of peak-hour congestion. In addition, students traveling to school are a major component of bicycle and pedestrian travel.

The assumptions for student growth vary by county, but in the case of both Gaston and Lin-

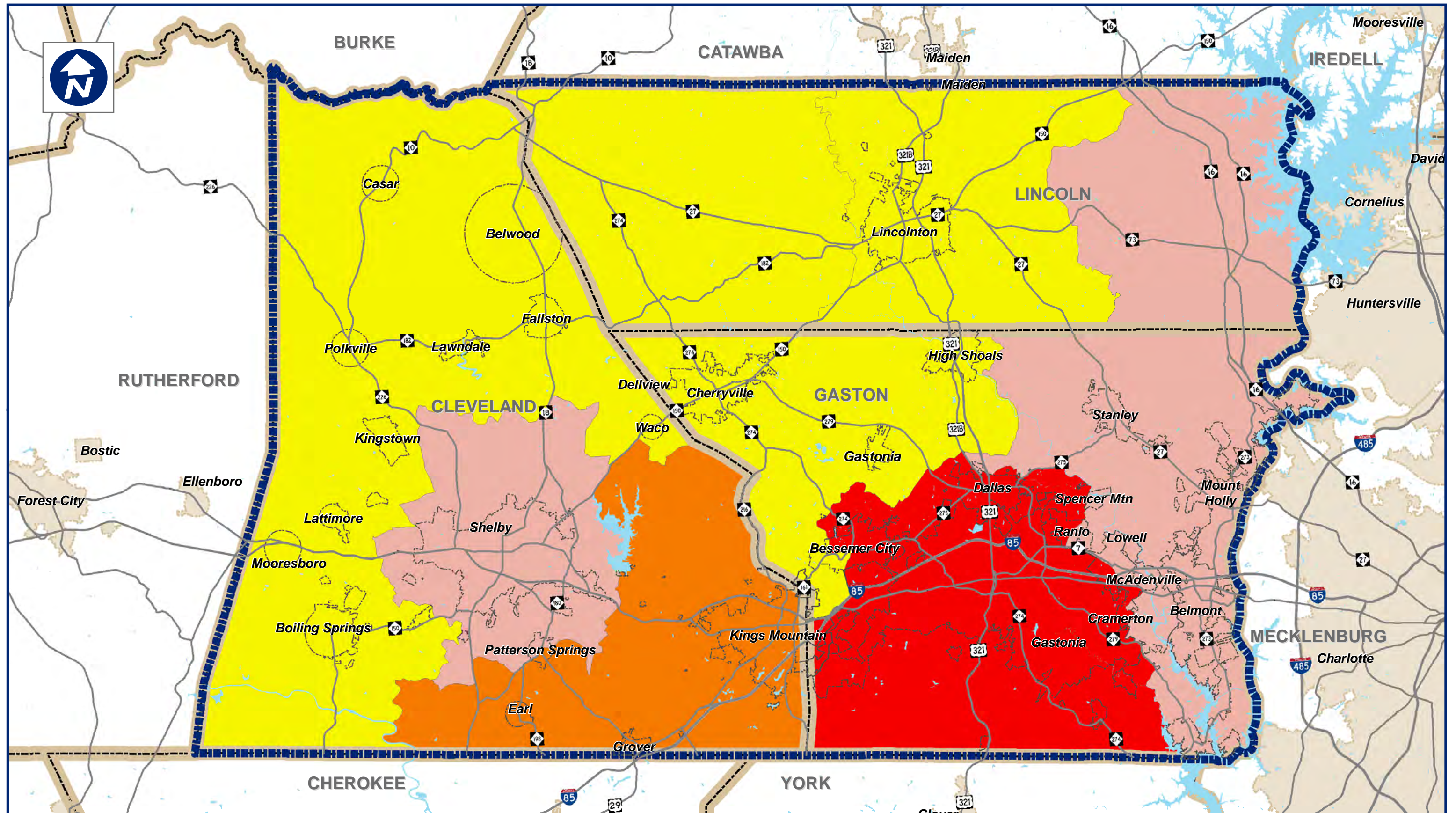
coln Counties, the projected percentage increase of K-12 student enrollment and overall population growth are approximately the same. Cleveland County's projected student enrollment increase of 24 percent is less than its 37 percent population growth rate. This reflects an aging population, and is a continuation of the current slightly declining student enrollment figures for Cleveland County schools.

Figure 7-5 through **Figure 7-8** illustrate the population growth, employment growth, and existing and future land use patterns in the GCLMPO jurisdiction.





LEGEND	Highways	Municipalities	Population Growth	10,001 - 20,000		 Metropolitan Planning Organization Date created: 1/8/18	Figure: 7-5 GCLMPO 2015-2045 Population Growth
	Major Roads	Counties		797 - 2,000			
	MPO Area	Regional Waters	2,001 - 5,000	5,001 - 10,000			2045 METROPOLITAN TRANSPORTATION PLAN



LEGEND	Highways	Municipalities	Employment Growth	5,001 - 10,000
	Major Roads	Counties		10,001 - 15,984
	MPO Area	Regional Waters		

0 2 4 8 Miles

GASTON-CLEVELAND-LINCOLN
MPO
Metropolitan Planning Organization
Date created: 1/8/18

Figure: 7-6

GCLMPO
2015-2045 Employment Growth

2045 METROPOLITAN TRANSPORTATION PLAN

Land Use Descriptions

Industrial Centers

Large & small-scale manufacturing and production uses, including assembly and processing, regional warehousing and distribution, bulk storage, utilities, medical research, and assembly operations.

Open Space

Land held for conservation or dedicated for recreation uses. May include water bodies, state, regional or community parks, conservancy holdings, cemeteries, and athletic fields, golf courses, and open air sports complexes that are not part of a larger development.

Rural Living

Large lots, abundant open space, and a high degree of separation between buildings. Includes homes, "hobby farms", working farms, conservation-based subdivisions, and small nodes of commercial activity along rural highways.

Special Districts

Civic/Institutional districts serving a public purpose, such as schools and universities, libraries, fire stations, police stations, public works complexes, government buildings, as well as health care campuses, airports and regional employment centers.

Suburban Centers

Commercial and office uses that are suburban in nature, such as multi-tenant strip centers, big box stores, and large shopping malls, as well as neighborhood-scale commercial centers, and office complexes featuring large-scale, isolated buildings or business parks containing multiple businesses.

Suburban Neighborhoods

Residential properties including single-family homes under three acres, town home and condo communities, multi-family residential, mobile home communities and mixed residential areas,

Urban Centers

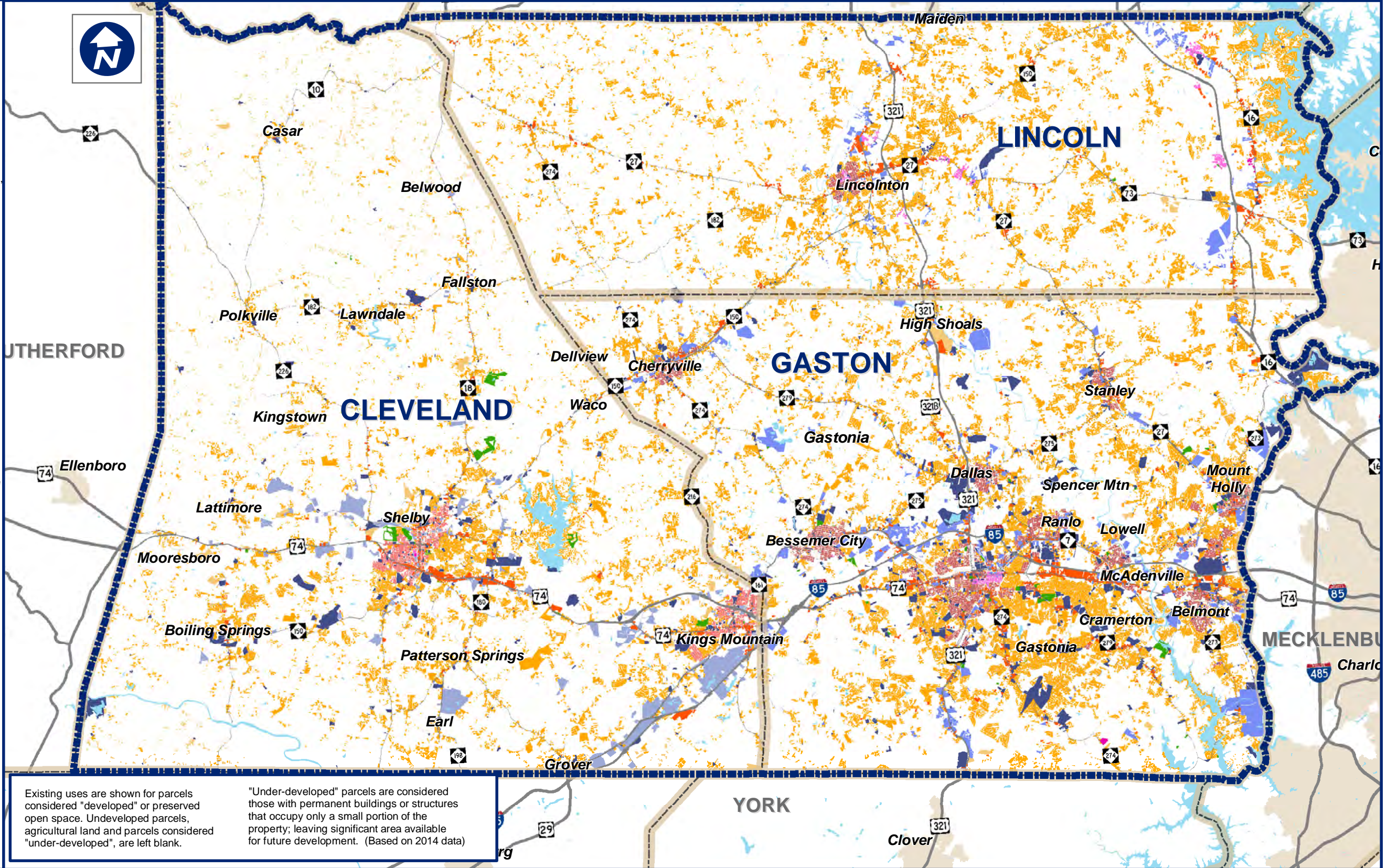
Town centers and urban neighborhoods supporting a mix of moderate- to high-density housing options on small blocks and a grid of streets.

Walkable Centers

Developments serving broad economic, entertainment, and community activities. Buildings located on small blocks with streets designed to encourage pedestrian activities. Buildings in the core may stand three or more stories. Residential units or office space may be found above storefronts.

Walkable Neighborhoods

Areas featuring a mixture of housing types and residential densities integrated with goods and services in a walkable community.



LEGEND

- Highways
- Major Roads
- MPO Area
- Municipalities
- Counties
- Regional Waters



GASTON-CLEVELAND-LINCOLN

Metropolitan Planning Organization

Date Created: 1/5/18

Figure: 7-7

GCLMPO

Existing Land Use Patterns

2045 METROPOLITAN TRANSPORTATION PLAN

Land Use Descriptions

Industrial Centers

Large & small-scale manufacturing and production uses, including assembly and processing, regional warehousing and distribution, bulk storage, utilities, medical research, and assembly operations.

Open Space

Land held for conservation or dedicated for recreation uses. May include water bodies, state, regional or community parks, conservancy holdings, cemeteries, and athletic fields, golf courses, and open air sports complexes that are not part of a larger development.

Rural Living

Large lots, abundant open space, and a high degree of separation between buildings. Includes homes, "hobby farms", working farms, conservation-based subdivisions, and small nodes of commercial activity along rural highways.

Special Districts

Civic/Institutional districts serving a public purpose, such as schools and universities, libraries, fire stations, police stations, public works complexes, government buildings, as well as health care campuses, airports and regional employment centers.

Suburban Centers

Commercial and office uses that are suburban in nature, such as multi-tenant strip centers, big box stores, and large shopping malls, as well as neighborhood-scale commercial centers, and office complexes featuring large-scale, isolated buildings or business parks containing multiple businesses.

Suburban Neighborhoods

Residential properties including single-family homes under three acres, town home and condo communities, multi-family residential, mobile home communities and mixed residential areas,

Urban Centers

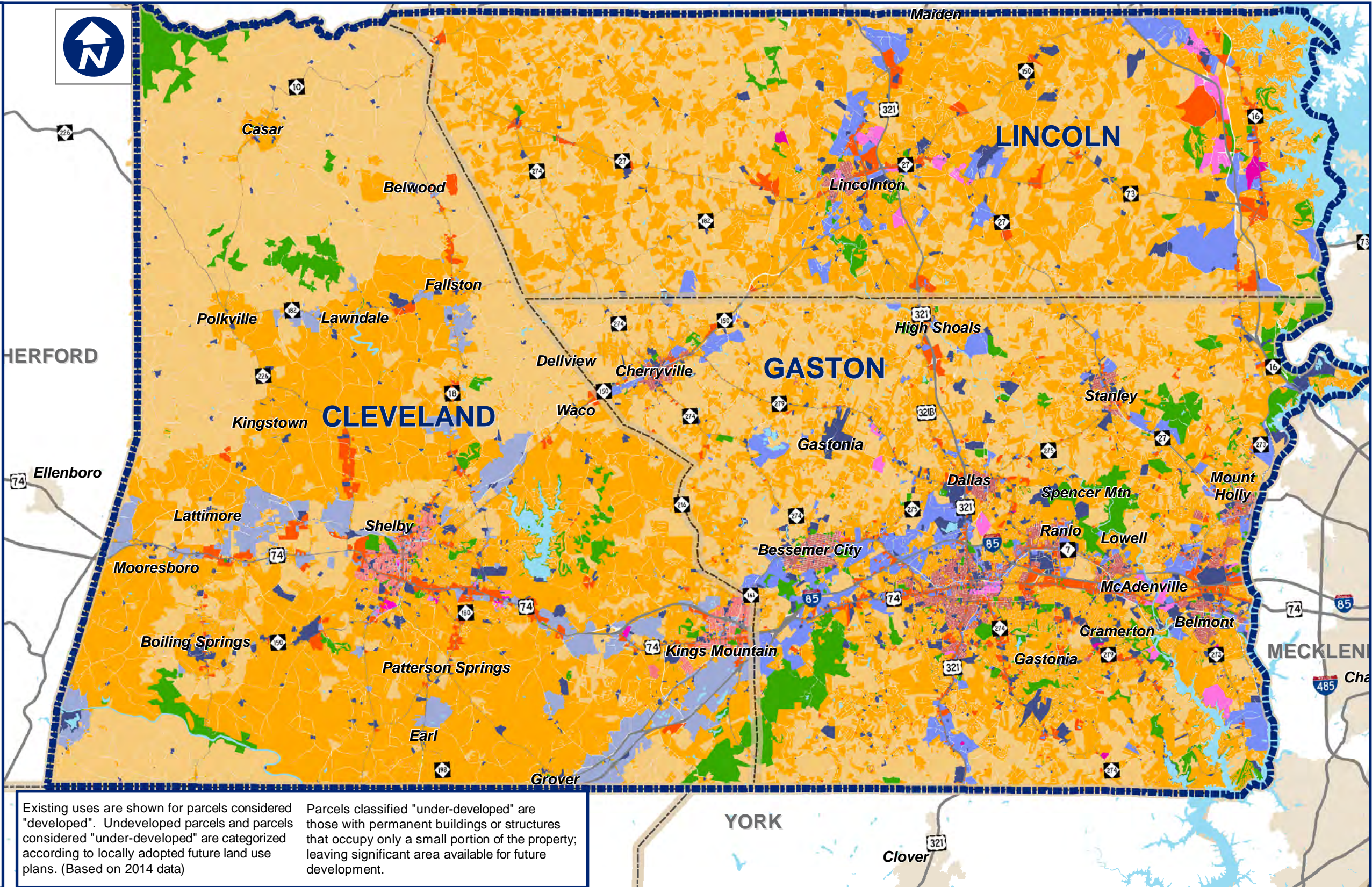
Town centers and urban neighborhoods supporting a mix of moderate- to high-density housing options on small blocks and a grid of streets.

Walkable Centers

Developments serving broad economic, entertainment, and community activities. Buildings located on small blocks with streets designed to encourage pedestrian activities. Buildings in the core may stand three or more stories. Residential units or office space may be found above storefronts.

Walkable Neighborhoods

Areas featuring a mixture of housing types and residential densities integrated with goods and services in a walkable community.



Existing uses are shown for parcels considered "developed". Undeveloped parcels and parcels considered "under-developed" are categorized according to locally adopted future land use plans. (Based on 2014 data)

Parcels classified "under-developed" are those with permanent buildings or structures that occupy only a small portion of the property; leaving significant area available for future development.

LEGEND

- Highways
- Major Roads
- MPO Area
- Municipalities
- Counties
- Regional Waters

0 2 4 8 Miles

GASTON-CLEVELAND-LINCOLN
MPO
Metropolitan Planning Organization
Date created: 1/5/18

Figure: 7-8

GCLMPO
Future Land Use Patterns

2045 METROPOLITAN TRANSPORTATION PLAN



Transportation planning in the MPO cannot occur without understanding where and how residents travel. Staff from the MPO use a range of census, survey, and traffic count information to help identify current and future issues in the study area. The MPO is concerned with properly evaluating travel modes, as well as travel patterns, so the MPO also analyzes transit, bicycle, pedestrian, and car-pooling behaviors in order to help meet the needs of residents using those modes.



Household Travel Behaviors

The Metrolina Region periodically conducts travel surveys to query area residents on travel behaviors, which is used to help calibrate the Model so it reflects local travel behaviors, such as trip generation rates, mode splits, and vehicular availability by household size. The most recent household travel survey, called the 2012 Metrolina Regional Household Travel Survey, was completed in mid-2012, and surveyed 4,231 households across the region.

The household travel survey indicated that only 1/8 (13.7%) of all trips in the Metrolina Region involve trips between a resident's home and work. One-quarter (23.8%) of all trips are for things other than work, shopping, school or medical purposes, and an additional one quarter of trips do not begin or end from home. This information clearly shows that focusing all transportation funding on facilitating commuting will likely deliver sub-optimal benefits, since a minority of all household trips are for such purposes.

Vehicular availability, household size, and household income were each positively correlated with trip generation rates, which is to be expected. A one-person household generates 3.63 trips per day on average, while a four or more-person household generates 17.48 trips per day. Households with annual income in excess of \$75,000 generated 10.26 trips per day. A household with annual income of less than \$15,000 generated 5.16 trips per day - half the number of trips generated by the highest income households. **Table 8-1** shows the daily vehicle miles traveled (VMT) by county.

Table 8-1. Daily Vehicle Miles Traveled (VMT) by County

COUNTY	2015	2025	2035	2045	% CHANGE (2015-2045)
Cleveland	3,295,301	3,707,428	4,165,361	4,686,025	42%
Gaston	6,554,906	7,290,575	7,937,800	8,648,138	32%
Lincoln	2,526,094	2,877,768	3,314,491	3,746,635	48%

Source: MRM18v1.0

Table 8-2. Single-Occupant Vehicle Commuting

COUNTY	PERCENT CARPOOLING	PERCENT WALK OR BICYCLE	PERCENT USING TRANSIT	PERCENT WORKING AT HOME
Cleveland	9.6%	2.2%	0.2%	2.4%
Gaston	9.3%	0.7%	0.3%	3.1%
Lincoln	9.1%	0.7%	0.2%	4.1%

Source: US Census Bureau, American Community Survey 2009-2013

Trip length is also of particular interest to transportation planners and for inputting into the Metrolina Model. Trip lengths directly correlate to the number of miles traveled on the network and corresponding traffic volumes. Trip length was provided in minutes, rather than miles. The average trip length for all trips in the region was 17 minutes, with nearly half (43%) of all trips being 10 minutes or less. Home-based work trips were the longest average trip type, at an average of 25 minutes. All other trip types varied from 15-17 minutes. The results for Cleveland, Gaston, and Lincoln counties were in line with the trends detailed above, although Cleveland and Lincoln counties had the highest percent of trips 61 minutes or longer (1.7% and 1.6%, respectively) in the region.

Vehicular occupancy varied significantly depending on the trip type. Since approximately 5/6 of all home-based work trips are made by people driving alone, the average vehicle occupancy rate of 1.04 persons per trip is to be expected. The mean occupancy for other trip types ranged from 1.42 to 1.49 persons per trip.

Trip mode information (whether a trip was made via single-occupant automobile, carpooling, bicycle, walking, or public transportation) was also a product of this household travel survey. Not surprisingly, driving a vehicle alone was the most common form of transportation, but it was only 2/3 (67.9%) of all trips. Approximately 1/4 (24.7%) of all trips were made as a passenger in a private vehicle. Trips on school buses comprised more than half (4.4%) of the remaining 7.4% of trips.

Public transportation only accounted for 0.6% of all trips, and walking and bicycling accounted for 2.2%. Even in households without vehicles, bicycling comprised 0.7% of all trips. Walking and transit were utilized more often, at 16.2% and 18.1% respectively. **Table 8-2** shows single-occupant vehicle commuting, and **Table 8-3** shows non-single occupant vehicle commuting.

Table 8-3. Non-Single Occupant Vehicle Commuting

COUNTY	PERCENT DROVE ALONE	CHANGE SINCE 2010	MEAN TRAVEL TIME (MINS)
Cleveland	85.2%	-1.3%	23.4
Gaston	85.5%	0.9%	24.8
Lincoln	85.0%	1.1%	29.8

Source: US Census Bureau, American Community Survey 2009-2013

Trips by time of day for the three counties in the MPO was consistent with regional trends, in that on an hourly basis, trip generation was fairly consistent between 6 AM and 6 PM, with between 5-7% of all daily trips beginning each hour in that period. The availability of vehicles per household influenced this distribution, with more vehicles correlated with a concentration of trips into the traditional AM and PM peak periods, as well as a concentration into the home-based work trip category.

Table 8-4. Counties Where Residents Work

WHERE THEY LIVE	WHERE THEY WORK					
County Residents	Catawba	Cleveland	Gaston	Iredell	Lincoln	Mecklenburg
Cleveland	637	27,018	4,963	72	437	2,482
Gaston	491	2,796	51,147	299	2,558	25,653
Lincoln	3,893	450	2,668	986	15,697	9,345

Source: US Census Bureau, American Community Survey 2009-2013

Total Travel

Vehicles traveling in and through the three counties add up to over 12 million miles per day. Approximately 40 percent of this traffic takes place on I-85, US 321 north of I-85, and US 74 west of I-85. These totals have been stable for the past five years. The Metrolina Model does project increasing VMT in the MPO through 2045, with approximately 38 percent more VMT per day from 2015 to 2045. This is a slightly larger increase than the 35 percent more people and 28 percent more jobs projected between 2015 and 2045. Comparisons with future years were made between 2010 and 2040, as both totals are outputs of the Metrolina Model.

The impact of having an interstate in a county dramatically impacts where travel occurs. In Gaston County approximately 1/3 of all travel occurs on I-85, while approximately 1/6 occurs on local roads (arterials and collectors). Lincoln County, which does not have an interstate, has a larger amount of travel occurring on local roads. Cleveland County, by virtue of having US 74 coded as partial expressway and arterial, has a much higher percent of its traffic on expressway and principal arterial roads.



Commuting Patterns

Commuting trips are a distinct minority of all trips generated, but do represent the focus of data collection through the Census Bureau, which reports a wide range of information on origins and destinations, mode, time, and demographics of commuters. What is most important for the GCLMPO to consider is, “where are workers travelling for work?” From **Table 8-2** and **8-3**, the answer is, “mainly by themselves and within their own counties.” Travel time is typically highest for those areas near the edge of feasible commutes to the jobs centers in Mecklenburg County. Cleveland County has the lowest average commute time at 23.4 minutes, and is also furthest from Mecklenburg County, with only 2,482 residents working in Mecklenburg County. **Table 8-4** illustrates the counties where residents work.

Transit usage for commuting to work in Mecklenburg County peaked at approximately 125,000 trips in 2008 before the recession cut jobs in central Mecklenburg County. Since then the express bus route from Lincoln County has been terminated and ridership on the express bus route from Gastonia is at approximately 51% of pre-recession levels. 2016 ridership for Gastonia Transit is just slightly lower compared to 2008, although the system is used for a range of trip types, so not all trips can be attributed to commuting.

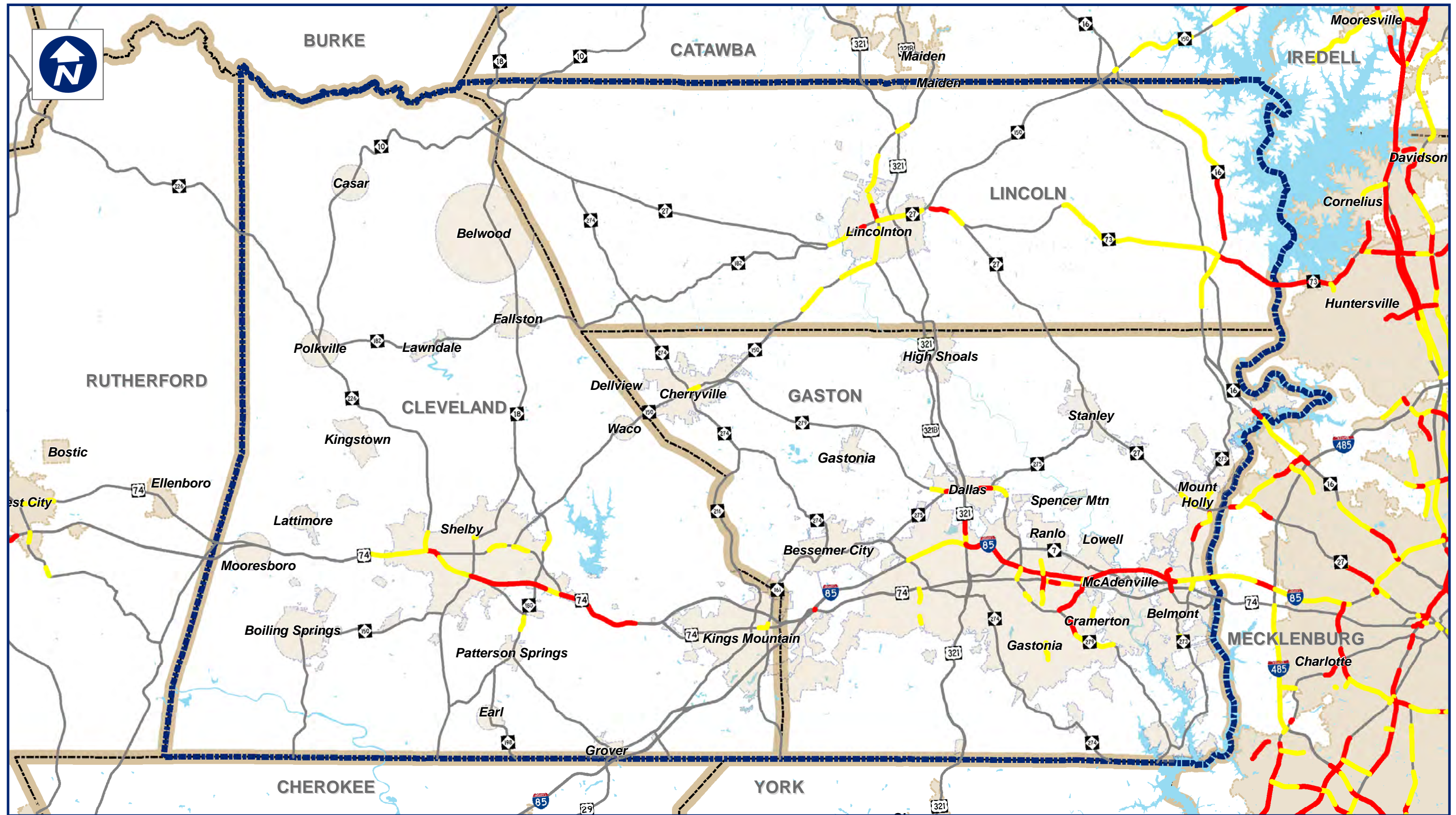
The results of these travel demands are apparent on the following congestion map. This map (**Figure 8-1**) depicts 2014 congestion levels in



the three counties on all NC, US, and Interstate routes. In total, 4.2%, or 25.3 miles, of the 602 mile network is considered extremely congested. 5.6%, or 33.9 miles, of the network is considered moderately congested. The remaining 90.1%, or 542.8 miles, of the network is considered uncongested. These percentages are slightly higher than for the state as a whole, as only 3.3% of roads are considered extremely congested, and 3.3% considered moderately congested.

The most congested corridors are I-85 through Gaston County, US 74 through Shelby, NC 27 through Lincoln, and NC 73 and NC 16 Business in eastern Lincoln County. The most congested sections are each identified for capacity improvements through 2045, with the Shelby Bypass (R-2707) and improvements to NC 16 Business already underway. Congestion along the I-85 corridor is to be addressed by widening the I-85 corridor between Belmont and the SC state line in Cleveland County. The congestion along NC 73 east of NC 16 is to be addressed with the widening of NC 73 into Mecklenburg County, including a widened bridge across the Catawba River.

Although not showing as congested, US 29/74 (Wilkinson Boulevard) gets extremely congested during peak travel times. The congestion along Wilkinson Boulevard between Gastonia and Mecklenburg County will be addressed by the implementation of an adaptive signal system from NC 7 (Catawba Street) in Belmont to Wesleyan Drive in Cramerton/McAdenville (U-6038), as well as through the recently funded replacement and widening of the US 29/74 bridge over the Catawba River into Mecklenburg County.



LEGEND Highways Major Roads MPO Area	Municipalities Counties Regional Waters	Moderately Congested Severely Congested	<div> <p>GASTON-CLEVELAND-LINCOLN Metropolitan Planning Organization Date created: 1/11/18</p> </div>	<p>Figure: 8-1</p> <p>GCLMPO 2015 Congestion Levels</p>
		<div> <p>0 2 4 8 Miles</p> </div>		

Safety and Security



Two of the Planning Factors that the Fixing America's Surface Transportation (FAST) Act legislation requires Metropolitan Planning Organizations (MPOs) to consider in the transportation planning process are safety and security. Specifically, MPOs should consider projects and strategies that:

- Increase the safety of the transportation system for motorized and non-motorized users
- Increase the security of the transportation system for motorized and non-motorized users

While safety and security are closely related, they are differentiated by the cause of the harm from which the transportation system and its users are being protected. Safety encompasses the prevention of unintentional harm to system users or their property. This includes vehicular crashes (whether of cars, trucks, buses, airplanes, or bicycles), train derailments, slope failures or other sudden destruction of roadways due to natural causes, and falls or injuries to pedestrians due to poorly constructed or absent facilities, among other issues. Security involves the prevention of intentional harm to the transportation system or its users, including theft or dismemberment of elements of transportation infrastructure, assault on users of the system, or large-scale attacks intended to completely disrupt the movement of people and goods.

While safety has long been a required planning factor for MPOs under federal transportation legislation, it was not until the terrorist attacks of September 11, 2001 that federal policy makers determined that transportation planners at all levels needed to consider security concerns more specifically.

Through proper engineering, education, enforcement and emergency management, a safe and secure transportation network can be provided to

the region. Safety especially is a priority for the GCLMPO, as evidenced by the inclusion of safety metrics in the project prioritization process for roadway and bicycle/pedestrian projects.



Streets and Highways

Enhancing highway safety is critical to the health and well-being of the citizens of North Carolina and those who travel and conduct business on our streets and highways. Without the continued substantial improvement in highway safety, automobile crashes will continue to be a leading cause of death and injury for a large segment of the population, as well as a major socio-economic drain on the resources of government and the people of this State. Ways to incorporate safety in transportation are reflected in the American Association of State Highway and Transportation Officials Strategic Highway Safety Plan and the North Carolina Strategic Highway Safety Plan.

The FAST Act maintains the Highway Safety Improvement Program (HSIP). This program is structured and funded to make significant progress in reducing fatalities on highways as well as other modes that use highway, railroads, and other conduits within the transportation network. The HSIP increases the funds for infrastructure safety and requires strategic highway safety planning focused on measurable results. States are required to have a safety data system to perform problem identification and countermeasure analysis on all public roads, adopt strategic and performance-based goals, advance data collection, analysis, and integration capabilities, determine priorities for the correction of identified safety problems, and establish evaluation procedures.



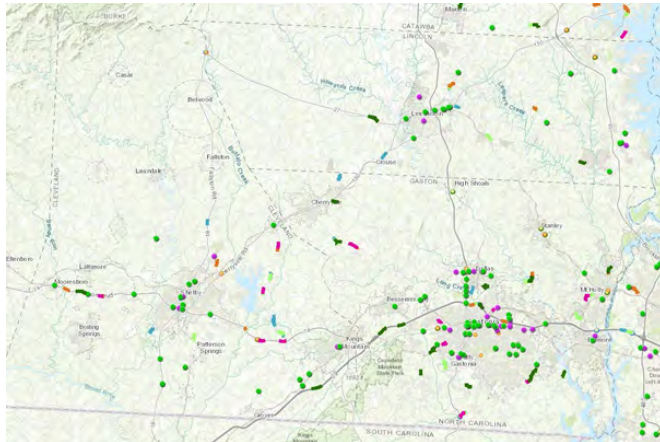
North Carolina's HSIP is structured into several distinct phases, including:

- System of safety warrants is developed to identify locations that are possibly deficient.
- Locations that meet warrant criteria are categorized as potentially hazardous (PH) locations.
- Detailed crash analyses are performed on the PH locations with the more severe and correctable crash patterns.
- The Regional Traffic Engineering staff performs engineering field investigations.
- The Regional Traffic Engineering staff utilizes Benefit: Cost studies and other tools to develop safety recommendations.
- Depending on the cost and nature of the countermeasures, the investigations may result in requesting Division maintenance forces to make adjustments or repairs, developing Spot Safety projects (typically under \$250,000), developing Hazard Elimination projects (typically \$400,000-\$1,000,000), making adjustments to current TIP project plans or utilizing other funding sources to initiate countermeasures.
- Selected projects are evaluated to determine the effectiveness of countermeasures.

The ultimate goal of the North Carolina HSIP is to reduce the number of traffic crashes, injuries and fatalities by reducing the potential for and the severity of these incidents on public roadways.

Figure 9-1 shows the North Carolina HSIP Locations for a five year duration (2013 – 2017).

Figure 9-1. North Carolina HSIP Locations for 2013-2017



Education is generally handled by the Governor's Highway Safety Program (GHSP). "Click It or Ticket" and "Booze It or Lose It" are examples of these educational programs. Education can also be conveyed through driver's education courses. Enforcement is important to the success of programs as Safety laws are only effective if they are enforced.

Crash data collected in the field by emergency service workers are the basis on which safety programs are developed. The collection of accurate crash data help planners identify high-crash intersections and corridors and determine the type of crash and the contributing factors. The data are valuable in identifying and designing transportation improvements. The NCDOT Transportation Mobility and Safety Division currently provides the MPO with crash data from its Traffic Engineering Accident Analysis (TEAAS) data.

Figure 9-2. Strategic Highway Network



Congestion is a major contributor to crashes and also impedes the ability to effectively respond to and manage safety and security issues. Even with excellent enforcement and safety planning, accidents will happen. Quick emergency medical service can mean the difference between life and death and can reduce injury severity when crashes occur. Travel efficiency and level of service are directly related to congestion. Engineering new roads and improvements to reduce congestion on existing roads will effectively provide a safer transportation network. Intelligent Transportation Systems tools can also manage the safe flow of traffic if an accident occurs. The Metrolina and Western Region Regional Intelligent Transportation Systems (ITS) Strategic Deployment Plans identify and prioritize ITS transportation needs in Gaston, Cleveland, and Lincoln counties.

The Strategic Highway Network (STRAHNET) is an important element in the security of the region, state and nation. STRAHNET provides the military with access, continuity and emergency transportation of personnel and equipment. The system totals over 62,000 miles of public highways designated by the Federal Highway Administration in partnership with the Department of Defense. Approximately 45,400 miles of Interstate and defense highways and about 15,600 miles of other highways make up the STRAHNET system. Additional highway routes link more than 200 military installations and ports to the STRAHNET system. The roads in the STRAHNET system are designed to support large military convoys and rapid mobilization and deployment of armed forces. **Figure 9-2** shows the Strategic Highway Network.



Bicycle and Pedestrian

The National Highway Traffic Safety Administration has determined that pedestrian crashes are more likely to occur during peak travel periods in the morning and afternoon. Most crashes with pedestrians will occur in urban areas where the volume of pedestrian and vehicle traffic is high; however, rural areas can also be dangerous for pedestrians due to the lack of sidewalks, paths, wide shoulders and cross walks. Driver behavior is a factor as well; speed and alcohol involvement have an impact on many crashes with pedestrians.

The NCDOT Division of Bicycle and Pedestrian Transportation maintains and shares with the GCLMPO a database of bicycle and pedestrian crashes and relevant attributes for each crash. This data is useful for local agencies within the MPO and for NCDOT when identifying areas of safety concern for bicyclists and pedestrians. Safety countermeasures utilized within the GCLMPO include installation of buffers or planting strips, crosswalks, traffic calming devices, pedestrian refuge islands, etc.

Many municipalities within the GCLMPO have adopted bicycle and pedestrian plans that address the “Four-Es” (i.e. education, engineering, enforcement, and encouragement) of bicycle and pedestrian planning, with a strong emphasis on the importance of safety. Historically, the GCLMPO and NCDOT have promoted the Safe Routes to Schools (SRTS) program, a federal program that encourages and enables children to walk and bike to school by making these activities safe. This program supports the planning, development and implementation of projects that improve safety and reduce traffic, air pollution and fuel usage in the vicinity of schools.

Security and Emergency Management

The National Guard maintains a database of state and local emergency responders called the Regional and State Online Resource for Emergency Management. The National Guard has located every fire, police, hospital, and local EMS provider across the country and has created a searchable database and mapping system. The four National Guard bases in the region, located in Belmont, Gastonia, Kings Mountain, and Lincoln, serve to supplement the regular armed forces and assist during national emergencies and declared states of emergency.

In 2014, Gaston, Cleveland, and Lincoln counties updated the Regional Hazard Mitigation Plan, which provides guidelines for evacuations, containment and first responder actions for both natural and man-made hazards. This Plan was written through coordination with transportation, law enforcement, planning and operational agencies. All three counties also operate 9-1-1 systems to serve the communities and local government agencies with effective communication services and facilitate communications for public safety agencies.

Financial Plan and Project Prioritization



Federal regulations require a financial plan as an element of the GCLMPO 2045 Metropolitan Transportation Plan (MTP). The purpose of the financial plan is to demonstrate that proposed investments are reasonable in the context of anticipated future revenues over the life of the plan and for future horizon years (2025, 2035, and 2045). Meeting this requirement is called “fiscal constraint.” The MTP is fiscally constrained based on an in-depth analysis of future revenues and project costs. Proposed transportation project investments 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. Anticipated revenues include funding from federal, state and local sources. The following sections provide more detailed assumptions regarding revenue, capital costs, maintenance costs, and future revenue needs.

Revenue Forecasts

Revenue forecasts are based on the North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) allocations for the years 2018 through 2027, which was released in June 2017. The Strategic Transportation Investments (STI) bill (HB 817), which was signed into law on June 26, 2013, allocates transportation funding. STI categorizes all projects, regardless of mode into the following three functional categories, called “tiers.” These categories are listed below and shown in **Figure 10-1**.

- Statewide Mobility Tier – Interstate and certain US routes, as well as Class I railroad improvements.
- Regional Impact Tier – Remaining US routes and all NC routes. No bicycle or pedestrian projects are eligible at this tier.
- Division Needs Tier – All remaining NCDOT-maintained facilities, as well as all non-highway projects.

Table 10-1 provides additional detail regarding STI eligible projects.

Figure 10-1. How STI Works

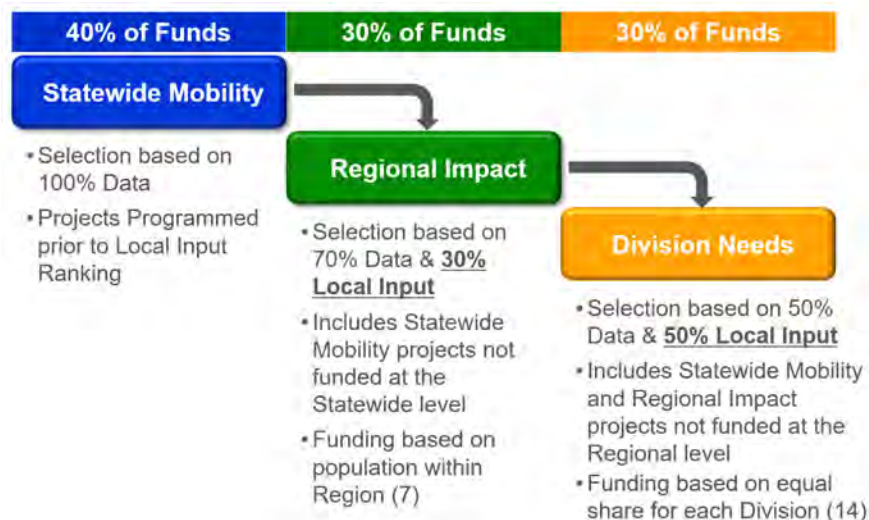


Table 10-1. STI Eligible Projects

MODE	STATEWIDE	REGIONAL	DIVISION
Highway	Interstates (existing & future), NHS Routes, STRAHNET, ADHS Routes, Uncompleted Intra-state projects, Designated Toll Facilities	Other US and NC Routes	All County (SR) routes
Aviation	Large Commercial Service Airports (\$500K cap)	Other Commercial Service Airports not in Statewide Tier (\$300K cap)	All Airports without Commercial Service (\$18.5M cap)
Bicycle & Pedestrian	NA	NA	All Projects (\$0 state funds)
Public Transportation	NA	Service spanning two or more counties (\$10% cap)	All other service, including terminals and stations
Ferry	NA	Ferry expansion	Replacement vessels
Rail	Freight Capacity Service on Class I Railroad Corridors	Rail service spanning two or more counties not Statewide	Rail service not included on Statewide or Regional Tiers

STATEWIDE MOBILITY TIER

Projects of statewide significance will receive 40 percent of the total available revenue, expected to total approximately \$8.75 billion over 10 years. The GCLMPO area is expected to receive \$340 million over the 10 year period.

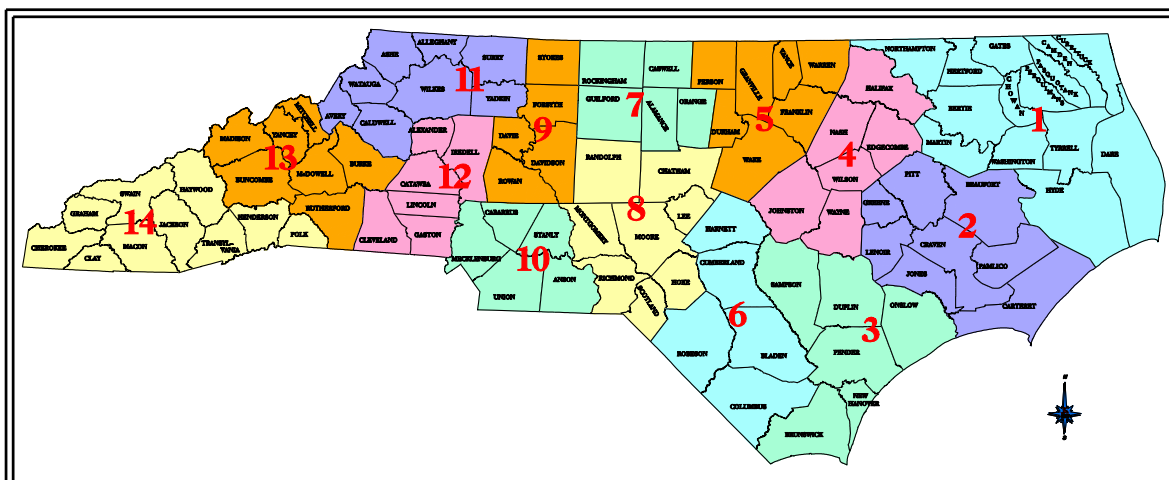
REGIONAL IMPACT TIER

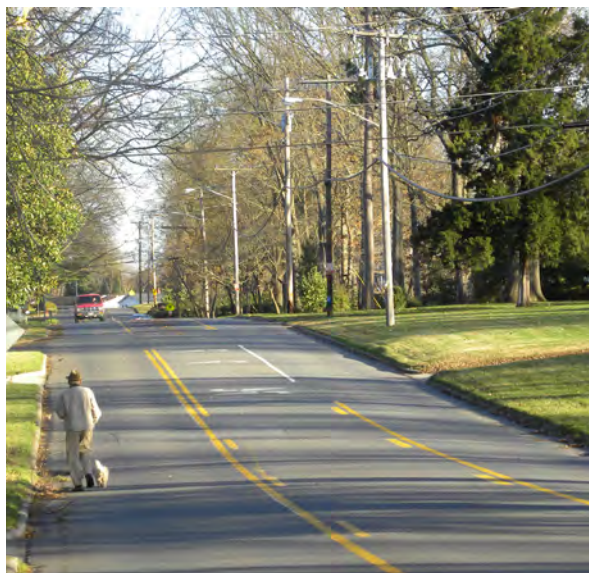
Projects of regional significance (all US routes not on the statewide tier, and all NC routes) will receive 30 percent of the total available revenue, equaling \$6.5 billion over a decade. The amount

a region receives is based on regional population. Projects in this tier compete within their respective funding regions. The GCLMPO study area is scheduled to receive \$255 million worth of projects over this 10 year timeframe. This total was used as the basis for projecting totals for 2026-2035 and 2036-2045.

As shown in **Figure 10-2**, the GCLMPO is located solely within Division 12, but must compete for Regional Impact Tier funding with the remainder of Division 12 and all of Division 11.

Figure 10-2. NCDOT Divisions and Regions





DIVISION NEEDS TIER

Transportation projects that are funded through the Division level will receive 30 percent of the total available revenue or \$6.5 billion shared equally over NCDOT's 14 Transportation Divisions which are shown in **Figure 10-2**. The GCLMPO is scheduled to receive \$244 million worth of projects over this 10 year period based on the results of the 2018-2027 STIP.

Projects that address safety, congestion, and connectivity will be prioritized at this level, and statewide and regional tier projects that did not receive funding at their respective levels will be considered at this level.

A more thorough explanation of the Strategic Transportation Investments legislation can be found at: <http://www.ncdot.gov/strategictransportationinvestments>.

FUTURE REVENUE FORECASTS

Future state revenue forecasts from 2028 through 2045 were calculated by extrapolating the funding by tier from 2018-2027 out to 2045. Beginning in the year 2028 a two percent annual revenue growth factor was applied through 2045.

Revenue Projections

For the 2045 MTP, revenue and costs for projects are divided into horizon years. Horizon years are based on the Environmental Protection Agency requirements for forecasting air quality within five to 10 year increments based on when projects will be constructed. For this plan, the Base Year is 2015 and the Horizon Years are 2025, 2035, and 2045. Therefore, all revenue projections and cost projections for projects are categorized on those horizon years.

STATEWIDE REVENUE

The Statewide Revenue assumptions were based on the provisions in the North Carolina House Bill (HB) 812. According to HB 812 "No more than ten percent (10 percent) of the funds projected to be allocated to the Statewide Strategic Mobility category over any five-year period may be assigned to any contiguous project or group of projects in the same corridor within a Highway Division or within adjoining Highway Divisions." According to the NCDOT financial projections for the 2018 through the 2027 FY, NCDOT can expect to raise between \$8.0 to \$8.75 billion for Statewide projects.

For the 2035 horizon year the GCLMPO expects to receive \$380 million, based on the extrapolation of the 2018-2027 funding levels. The MPO projects that the majority of this will be spent on are the widening of I-85 from US 74 to the South Carolina state line.

In the 2036 to 2045 horizon year the MPO projects \$363 million to be available based on extrapolating 2018-2027 funding, but expects to spend \$372 million on completing the widening of I-85 from US 321 to US 74, as well as the upgrade of US 74 from I-26 to Mooresboro. These two projects are expected to score well in future phases of the NCDOT's SPOT process, and could both be funded since they compete at the statewide tier. **Table 10-2** provides the statewide mobility tier funding details.

*Table 10-2. GCLMPO Statewide
Mobility Tier Funding*

HORIZON YEAR	TOTAL HIGHWAY FUNDING	NON-HIGHWAY FUNDING
2018-2025	\$340,296,578	\$0
2026-2035	\$380,067,563	\$0
2036-2045	\$363,159,172	\$0
2018-2045	\$1,083,523,313	\$0

REGIONAL REVENUE

The MPO used a similar process to calculate funding at the Regional Impact Tier through 2045. The three counties received \$235.8 million for projects from 2018-2027. The MPO extrapolated these amounts to 2045, and applied a two percent annual cost growth factor after 2027 to all projects. Using this methodology, the MPO expects to have \$285 million available between 2026-2036, and \$272 million between 2036-2045. The MPO selected projects that add up to within a few percent of these totals, as funding at this tier is limited to a paired two division region of the state.

Table 10-3 illustrates the amount of funding available by population for the GCLMPO area based on the financial projections described and an annual two percent revenue inflation rate from 2027 through 2045. **Table 10-4** shows the regional revenue projections by horizon year.

DIVISION REVENUE

Division revenue is based on an equal share principle, meaning each division in the state will get an equal share of the expected \$6.5 billion of revenue over a ten-year period. The 14 divisions for the state are shown in **Figure 10-2**.

*Table 10-4. Regional Revenue Projections
by Horizon Year*

HORIZON YEAR	REGIONAL IMPACT	
	HIGHWAY	NON-HIGHWAY (0%)
2018-2025	\$254,884,143	\$0
2026-2035	\$284,672,845	\$0
2036-2045	\$272,008,361	\$0
2018-2045	\$811,565,348	\$0

The state of North Carolina contains 100 counties. The NCDOT is forecasting a total of \$6.5 billion through the year 2027. According to HB 812, each Division will receive an equal share of the forecasted revenues. The GCLMPO is in NCDOT Division 12, and there are 14 Divisions in the State. Therefore, as shown in **Table 10-5**, for the first horizon year Division 12 would receive approximately \$46.9 million annually. The GCLMPO constitutes 51.85% of the population, therefore it can be assumed that the GCLMPO can reasonably expect to receive approximately \$24.4 million annually beginning in 2018 and continuing through 2025 from this pot of money. Utilizing this methodology, the GCLMPO expects to have \$272.5 million available between 2026-2035, and \$260.5 million between 2036-2045.

Table 10-3. Regional Revenue Projections

TIER	STATEWIDE POPULATION	REGION F POPULATION	PERCENTAGE OF STATEWIDE POPULATION	2018-2025 PROJECTED REGIONAL REVENUES STATEWIDE (PER YEAR)	2018-2025 PROJECTED REGION F REVENUES (PER YEAR)	MPO POPULATION SHARE	PROJECTED ANNUAL MPO SHARE OF REVENUES (PER YEAR)
Region F (11 & 12)	10,056,683	1,129,129	11.23%	\$656,000,000	\$73,668,800	34.71%	\$25,570,440

Table 10-5. Division Revenue Projections

DIVISION	2018-2025 PROJECTED DIVISIONAL REVENUES STATEWIDE (PER YEAR)	EQUAL SHARE PER DIVISION (PER YEAR)	DIVISION 12 POPULATION	GCLMPO POPULATION	MPO POPULATION SHARE	PROJECTED ANNUAL MPO SHARE OF REVENUES (PER YEAR)	PROJECTED ANNUAL MPO SHARE OF REVENUES (PER YEAR)
12	\$656,000,000	\$46,857,143	755,914	391,904	51.85%	\$24,293,110	\$25,570,440

At the division needs level of funding, non-highway projects, such as bicycle and pedestrian, public transportation, and aviation projects are eligible for this funding. In **Table 10-6**, 13% of the available Division funding for projects is dedicated to non-highway projects in the 2045 MTP.

Table 10-6. Divisional Revenue Projections by Horizon Year

HORIZON YEAR	DIVISION NEEDS	
	HIGHWAY	NON-HIGHWAY (13%)
2018-2025	\$212,331,420	\$31,727,683
2026-2035	\$237,146,921	\$35,435,747
2036-2045	\$226,596,762	\$33,859,286
2018-2045	\$676,075,103	\$101,022,717

BOND REVENUES

In certain situations, local municipalities within the GCLMPO planning area elect to provide funding for priority projects. This funding can be set aside as the result of voter approved bond referendum. One project on the fiscally constrained project list for the 2018-2025 period is being partially funded by local means.



There are two types of Bond revenues available; local and state. The City of Gastonia has dedicated Bond funding towards local road projects within their jurisdiction. In addition, revenues from State Bonds are being used to construct segments of the Shelby Bypass in Cleveland County.

STATE ROADWAY MAINTENANCE REVENUES

State roadway maintenance revenues are financed by the same sources as capital projects in the STI process. These maintenance projects reduce the amount of funds available for capital improvements. The maintenance allocation for the GCLMPO area includes funding for state projects, as well as local projects through the Powell Bill. See **Table 10-7** for the breakdown of maintenance funds for the GCLMPO area. Following the projection methodology used for funding revenues, a two percent annual increase was used to forecast the maintenance revenues as well.

Table 10-7. GCLMPO Maintenance Allocation

HORIZON YEAR	MAINTENANCE ALLOCATION	
	STATE	POWELL BILL
2018-2025	\$151,528,947	\$46,662,608
2026-2035	\$226,497,017	\$69,748,663
2036-2045	\$276,098,600	\$85,023,231
2018-2045	\$654,124,564	\$201,434,502

CONGESTION MITIGATION AND AIR QUALITY (CMAQ) FUNDING

Gaston and Lincoln counties continue to be in the Ozone non-attainment or maintenance areas for the Metrolina region. Because of these designations, the GCLMPO receives an annual allocation of Federal CMAQ funds from NCDOT to assign to eligible projects using an adopted ranking process. The MPO currently receives approximately \$1.47 million per year, starting in FY 18. Due to the unpredictable project solicitation process and eligibility guidelines for projects, the MPO has not identified a list of projects beyond the current two-year allocation of funds for FFY 18-19.

CMAQ Projects currently funded through the STIP include:

- C-4934 - Add a turn lane on NC 279 from Burtonwood to Garrison Blvd in Gastonia
- C-5186 – Install 6 CCTV cameras in Gastonia
- C-5505 - Construct rail trail in Belmont



- C-5508 - Construct sidewalks along Dallas-High Shoals Road and Park Road in Dallas
- C-5622 – Construct Ph. 1 of the Highland Branch Greenway in Gastonia
- C-5623 – Construct sidewalk along Cramer Mountain Road in Cramerton
- C-5562 - Construct greenway between downtown Gastonia and Lineberger Park
- C-5606A – Construct Belmont-Mt. Holly Road sidewalk connection
- C-5606B – Construct sidewalks along NC 161 in Bessemer City
- C-5606C – Install CCTV cameras in various locations in Gastonia
- C-5606D – Construct sidewalks along NC279/275 in Dallas
- C-5606E – Construct greenway connector from the Technology Park to Gaston County Park in Dallas
- C-5606G – Add a midday route to the 85X-Gastonia Express CATS bus route
- C-5606H – Construct Ph. 2 of the Highland Branch Greenway in Gastonia
- C-5606I – Construct sidewalks along Hwy 27 in Lincoln
- C-5606J – Construct sidewalk to connect Poston Park in Lowell
- C-5606K – Construct greenway from Rankin Lake Park to the Technology Park in Gastonia
- C-5606L – Construct sidewalk along NC 161 in Bessemer City
- Submitted for FY 19 - Construct sidewalk along Neal Hawkins Road to connect to Martha Rivers Park

Balancing Revenues with Project Costs

The intent of a fiscally constrained plan is to balance revenues with project costs. The forecasted revenues for projects in the MTP include a two percent inflation adjusted annual increase after 2025, with estimated construction costs also including a two percent inflation adjusted annual increase for projects after 2025.

The projects were ranked using an adopted methodology and cost estimates were developed using the standard NCDOT project cost calculation template or, where possible, relied on costs from the STIP. For Statewide, Regional and Division Tiers, once all cost estimates were calculated and projects ranked, the costs of the top ranked projects were subtracted from the financial projections until the project costs equaled the financial projections.

PROJECT RANKING PROCESS

The STI program strives to be data-driven and transparent about how projects are selected and funded, regardless of mode. Because the STI drives funding decisions, the MPO chose to model its project ranking process on how the STI program is evaluated.

Regional Impact Tier Highway Projects

All NC routes, US 29, and US 74 east of I-85 in Gaston County are found on the Regional Level. These highway projects were evaluated by the criteria and scoring as detailed in **Table 10-8**.

Division Needs Tier Highway Projects

All highway projects on SR roads and local roads were evaluated by the criteria and scoring as detailed in **Table 10-9**.

Division Needs Tier Bicycle/Pedestrian Projects

The ranking criteria for bicycle/pedestrian projects for the 2045 MTP are illustrated in the **Table 10-10**. It is important to note that all bicycle and pedestrian projects submitted to the MPO for State funding must be specifically identified in a locally-adopted bicycle plan, pedestrian plan, greenway/multi-use plan, or Safe Routes to School Action Plan.



Table 10-8. Regional Impact Tier Highway Project Scoring Criteria

REGIONAL IMPACT TIER HIGHWAY PROJECTS (MAX TOTAL SCORE: 110 POINTS)					
CRITERIA	0 POINTS	5 POINTS	10 POINTS	15 POINTS	20 POINTS
Existing Congestion (20 max)	Volume to capacity less than 0.6	Volume to capacity btw 0.6 and 0.85	Volume to capacity btw 0.86 and 1.0	Volume to capacity btw 1.01 and 1.1	Volume to capacity over 1.1
Existing Safety (20 max)	SPOT safety points less than 30	SPOT safety points btw 31-50	SPOT safety points btw 51-65	SPOT safety points btw 66-80	SPOT safety points over 80
Cost-Effectiveness (15 max)	Cost per vehicle/ equivalent greater than \$1,500 per mile	Cost per vehicle/ equivalent btw \$1,000-\$1,500 per mile	Cost per vehicle/ equivalent btw \$500-\$999 per mile	Cost per vehicle/ equivalent less than \$499 per mile	--
Freight Volume (10 max)	Less than 500 trucks/ equivalent per day	Btw 500-1,000 trucks/equivalent per day	More than 1,000 trucks/equivalent per day	--	--
Transportation Plan Consistency (10 max)	Project is not in the CTP	Project type, such as intersections, not considered in plans	Project is in the CTP	--	--
Cost (10 max)	Cost over \$50 million	Cost \$25-49 million	Cost less than \$25 million	--	--
Multimodal Accommodation (5 max)	Project does not include bike/ped/transit/rail facilities	Project includes bike/ped/transit/rail facilities	--	--	--
Supports Environmental Justice (EJ) (5 max)	Project adds capacity or accessibility where growth is not encouraged	Project adds new capacity or accessibility in support of EJ	--	--	--
Supports Land Use (5 max)	Project could negatively impact the land use of the area and does not support an adopted Land Use Plan	Project will have no impact or make positive improvements to the area's land use and supports an adopted Land Use Plan	--	--	--
Supports Economic Development (5 max)	Project does not support economic development	Project supports economic development	--	--	--
Local Funding Contribution (5 max)	No local funding	At least 5% local funding of total project cost (or 25% for locally-administered projects)	--	--	--

Table 10-9. Division Needs Tier Highway Project Scoring Criteria

DIVISION NEEDS TIER HIGHWAY PROJECTS (MAX TOTAL SCORE: 105 POINTS)					
CRITERIA	0 POINTS	5 POINTS	10 POINTS	15 POINTS	20 POINTS
Existing Lack of Capacity (20 max)	Volume to capacity less than 0.5 (roads and rail), existing facilities available (other modes)	X	Volume to capacity btw 0.51 and 0.75 (roads and rail), intermittent or incomplete facilities/transit available (other modes)	X	Volume to capacity over 0.75 (roads and rail), no facilities/transit available (other modes)
Cost-Effectiveness (20 max)	Cost per daily user greater than \$4,000 per user per mile	Cost per daily user btw \$2,000-\$4,000 per user per mile	Cost per daily user btw \$1,500-\$1,999 per user per mile	Cost per daily user btw \$1,000-\$1,499 per user per mile	Cost per daily user less than \$999 per user per mile
Total Cost (10 max)	Cost over \$10 million	Cost \$5-10 million	Cost less than \$5 million	--	--
Plan Consistency (10 max)	Project is not in an adopted land use, transportation, transit or other plan	Intersections not improving recommended corridors	Project supports an adopted land use, transportation, transit or other plan	--	--
Project Readiness (10 max)	Significant ROW, EJ or environmental impacts	Moderate ROW, EJ or environmental impacts	No ROW, EJ or environmental impacts	--	--
Multimodal Accommodation (10 max)	Project does not include bike/ped/transit/ rail facilities	X	Project includes bike/ped/transit/ rail facilities	--	--
Supports Environmental Justice (EJ) (5 max)	Project adds capacity or accessibility where growth is not encouraged	Project adds new capacity or accessibility in support of EJ	--	--	--
Supports Land Use (5 max)	Project could negatively impact the land use of the area and does not support an adopted Land Use Plan	Project will have no impact or will make positive improvements to the area's land use and supports an adopted Land Use Plan	--	--	--
Supports Economic Development (5 max)	Project does not support economic development	Project supports economic development	--	--	--
Local Funding Contribution (10 max)	No local funding	At least 5% local funding of total project cost (or 25% for locally-administered projects)	At least 10% local funding of total project cost (or 30% for locally administered projects)	--	--

Table 10-10. Division Needs Tier Bicycle and Pedestrian Project Scoring Criteria

MEASURE	POINTS POSSIBLE
Safety	20
Connectivity	20
Residential and Employment Density	20
Benefit/Cost	20
Social Equity	10
Constructability	10
Total	100



Division Needs Tier Aviation Projects

All aviation projects were evaluated by the criteria and scoring as detailed in **Table 10-11**.

Division Needs Tier Public Transportation Projects

Public transportation projects were evaluated by the criteria and scoring as detailed in **Table 10-12**. The following public transportation projects were scored:

- Operations – includes funding for administration of a system, as well as maintenance and operation of a transit system.
- Expansion Vehicles – project types are focused on increasing efficiency. Example projects include:
 - New bus routes and/or services (demand response, headway reductions)
 - Purchase of new buses or vans
- Facilities – project types are focused on replacing, improving, or constructing new transit-related facilities. Examples of projects include:
 - Transit-related facilities
 - Park and Ride Lots
 - Bus Shelters

For more details about the ranking process, please refer to **Appendix D** of this plan. To review the results of this process, please refer to the fiscally-constrained project lists in the chapters that follow.

Table 10-11. Division Needs Tier Aviation Project Scoring Criteria

AVIATION PROJECTS (MAX TOTAL SCORE: 100 POINTS)					
CRITERIA	0 POINTS	5 POINTS	10 POINTS	15 POINTS	20 POINTS
Economic Development (20 max)	Does not improve aircraft size capacity or space availability for based aircraft	X	X	Increases capacity for heavier aircraft and/or increases space available for new based aircraft	Creates capacity for larger aircraft and/or creates employment
Safety (20 max)	No safety improvements	X	Improves safety requirements outside of the runway and taxiway areas	Improves taxiway/taxilane safety area grades and obstacle free zones	Improves required runway safety area grades and runway approach obstruction clearing
Cost of Project (20 max)	Total Project Cost is greater than \$500,000	X	Total Project Cost is between \$250,000 and \$499,999	X	Total Project Cost is less than \$250,000
Local Funding Contribution (10 max)	No local match above the required 10%	Local match exceeds the minimum requirement of 10% and is between 11-19%	Local match exceeds the minimum requirement by at least 20% of project cost	--	--
Plan Consistency (20 max)	Project is not in an adopted plan	X	Project is included in the adopted MTP OR local aviation plan	X	Project is included in the adopted MTP AND local aviation plan
Project Readiness (10 max)	Significant ROW, EJ and/or environmental impacts	Moderate ROW, EJ and/or environmental impacts	No ROW, EJ or environmental impacts	--	--

Table 10-12. Division Needs Tier Public Transportation Project Scoring Criteria

PUBLIC TRANSPORTATION PROJECTS (MAX TOTAL SCORE: 100 POINTS)					
CRITERIA	0 POINTS	5 POINTS	10 POINTS	15 POINTS	20 POINTS
Interagency Coordination (10 max)	Project does not involve more than one transit/ municipal agency	X	Project involves two or more transit/ municipal agencies	--	--
Ridership Impact (15 max)	Project does not increase or has no impact on ridership	Project increases ridership by 0-5%	Project increases ridership by 5.1-10%	Project increases ridership by more than 10%	--
Capacity Impact (15 max)	Project does not decrease headway or increase frequency on an existing transit route that is near or at capacity	X	X	Project decreases headway or increases frequency on an existing transit route that is near or at capacity	--
Serves Activity Center(s) (10 max)	Project does not serve an activity center	X	Project does serve activity center(s)	--	--
Multimodal Accommodation (10 max)	Project does not include bike/ped facilities	X	Project includes bike/ped facilities	--	--
Plan Consistency (20 max)	Project is not in an adopted plan	X	Project is included in the adopted MTP OR local transit plan	X	Project is included in the adopted MTP AND local transit plan
Local Support (5 max)	Project does not have local support as evidenced by public input or elected Board support	Project does have local support as evidenced by public input or elected Board support	--	--	--
Local Funding Contribution (15 max)	No local match above the required 10%	Local match exceeds the minimum requirement of 10% and is between 11-19%	X	Local match exceeds the minimum requirement by at least 20% of project cost	X

Streets and Highways



Overview

The Gaston-Cleveland-Lincoln Metropolitan Planning Organization's (GCLMPO) area consists of an extensive network of roadway corridors, ranging from local streets serving local trips to multi-lane highways and interstates serving regional trips. This network is the primary means by which people and goods are transported through the GCLMPO area and further into the region. The network includes close to 3,000 total miles, with approximately 83% (2,457 miles) maintained by the local municipalities, with the remaining 501 miles maintained by the North Carolina Department of Transportation (NCDOT).

RELATIONSHIP TO THE COMPREHENSIVE TRANSPORTATION PLAN (CTP)

A Comprehensive Transportation Plan (CTP) has been prepared for Gaston, Cleveland, and Lincoln counties and was adopted by the MPO Board in December 2016. The CTP is a long range planning document that will assist the local government and its representatives in making transportation decisions over the next 30+ years. This is a joint effort between the GCLMPO, local counties, towns, and the NCDOT – Transportation

Planning Division (TPD). The CTP involves both government officials and the public in an effort to determine the area's future transportation needs based on the best information available. This information includes, but is not limited to, population, economic conditions, traffic trends, and patterns of land development in and around the area. The CTP includes alternative modes of transportation, such as transit, walking, and cycling, and identifies recommendations for solutions that provide for the safe, efficient, cost-effective, and environmentally sensitive use of the transportation system, while addressing current and future travel needs.

The CTP serves as the primary inventory of projects to be evaluated for implementation and serves as the basis from which the GCLMPO uses to develop the MTP. The map in **Figure 11-1** shows identified CTP corridors.

There is no funding associated with the CTP.

IMPLEMENTATION STRATEGIES

With the limited availability of federal, state, and local funding for roadway construction, it is more important than ever to work with municipal staff and developers to protect future corridors from construction. This is accomplished through the review of site plans for appropriate setbacks and subdivision plans that impact roadways proposed for widening or for new alignment. Despite some difficulties on specific corridors, there has also been significant progress in this area. Many of the member local governments have adopted right-of-way protection measures as a part of their subdivision ordinances; therefore, requiring those developing property to participate in the task of providing infrastructure. In some cases, the alignments of new facilities shown in the Metropolitan Transportation Plan (MTP) or



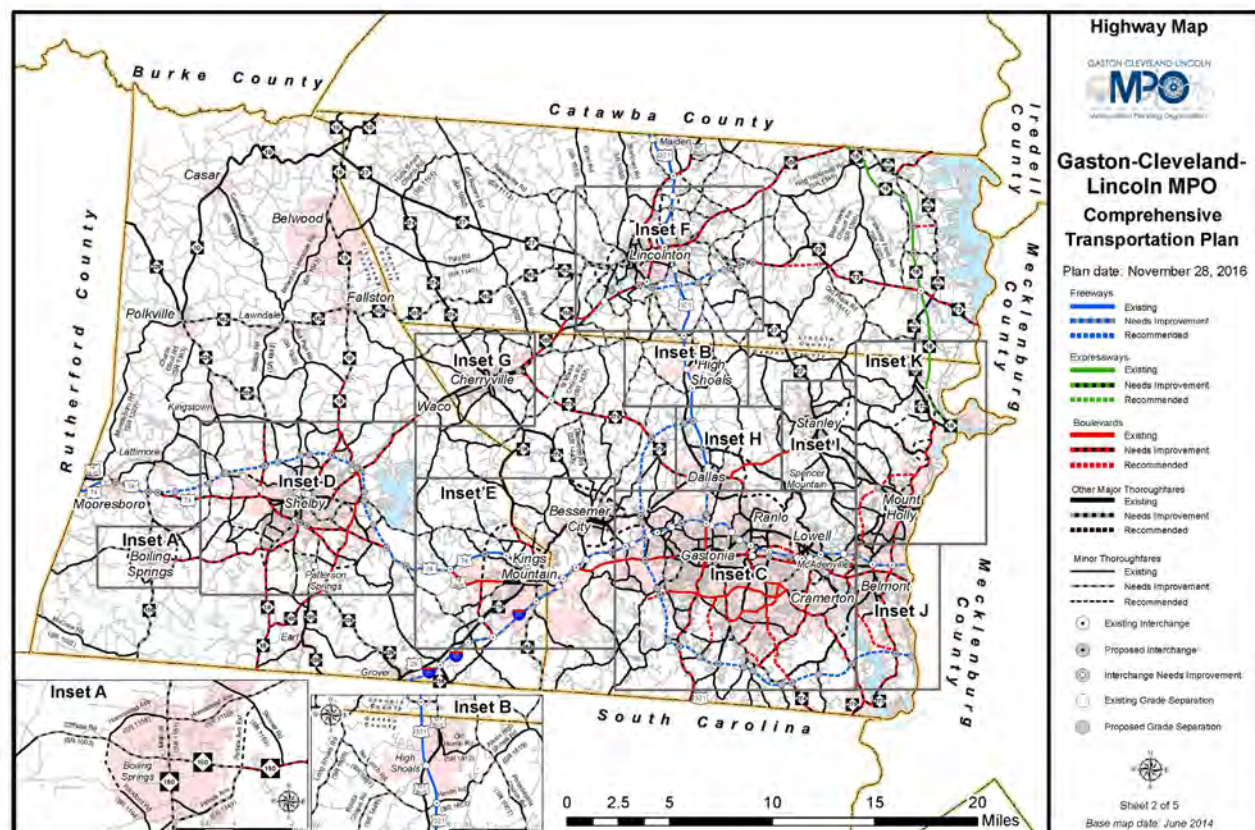
on the CTP have been adjusted to cause less disruption to property owners and to better incorporate the facility into the design of a development. Examples of roadway projects that have been protected through these efforts are a portion of the Mount Holly North Loop, Gaston Day School Road Extension, North Ranlo Loop, Belmont-Mount Holly Southern Loop, and the Forbes Road Extension.

The GCLMPO has also worked to complete corridor studies for several corridors that are considered most threatened by development, two of which are the Gastonia-Mount Holly Connector and the southern portion of the Belmont-Mount Holly Loop.

The following Functional Designs have also been completed and can be found on the GCLMPO's website at www.gclmpo.org:

- Belmont-Mount Holly Loop
- Dallas North Loop
- Forbes Road Extension
- Gaston Day School Road Extension
- Gastonia-Mount Holly Connector
- Linwood Road Realignment
- Mount Holly North Loop
- North Ranlo Loop
- Robinson-Clemmer Road Realignment
- South Ridge Parkway Extension
- Union-Beaty Road Realignment

Figure 11-1. GCLMPO CTP Highway Map



FUNDED ROADWAY PROJECTS

Several street and highway projects have been programmed in the 2018-2027 State Transportation Improvement Program (STIP) and are shown as funded projects in the 2045 MTP Highway Projects List. This includes projects at the Statewide, Regional, and Division tiers. These projects are programmed in various stages of implementation including: planning, design, right-of-way acquisition, and construction. **Table 11-1** through **Table 11-5** include the following highway project information:

- **Table 11-1.** Statewide Tier Highway Projects
- **Table 11-2.** Regional Tier Highway Projects
- **Table 11-3.** Division Tier Highway Projects
- **Table 11-4.** Enhancement Safety Projects
- **Table 11-5.** GCLMPO 2018-2022 TIP Projects

Roadway projects are funded either by FHWA (federal), NCDOT (state), or the local municipalities within the GCLMPO planning area. Funding

for roadway projects is described in more detail in **Chapter 10**. Some projects will continue to be accomplished by developers through the rezoning, subdivision, and permitting processes within the various GCLMPO jurisdictions as described previously.

Figure 11-2 shows the 2045 MTP Highway projects, and **Figure 11-3** shows the GCLMPO Transportation Improvement Program (TIP) projects.

MTP HORIZON YEAR HIGHWAY PROJECT RECOMMENDATIONS

Federal law requires that projects in the MTP be categorized in financially (or fiscally) constrained horizon years in order to comply with the requirements for air quality and conformity analysis. The 2045 MTP includes three horizon years – 2025, 2035, and 2045. It is important to note that the years are based on calendar years, beginning January 1, rather than fiscal years. The following sections of this chapter highlight the three horizon years of this plan and specific roadway projects proposed to be accomplished within each timeframe.



2025 Horizon Year Highway Projects

The 2025 Horizon Year includes all of the funded highway projects (2018-2027 STIP projects), as well as new construction projects that are expected to be completed and open for traffic by December 31, 2025. Notable projects for Horizon Year 2025 include:

- I-85/US 321 Interchange Improvements
- Shelby Bypass
- NC 274 (Union Road) Widening from Osceola Street to Niblick Drive
- NC 273 (Tuckasee Road) Widening from Beatty Drive to Highland Street
- NC 279 (South New Hope Road) Widening from Titman Road to Union-New Hope Road

2035 Horizon Year Highway Projects

The roadway projects in the 2035 network include several projects that have either existing or committed funding. In addition, there are over 20 roadway widening, new construction, and intersection improvement projects proposed for completion between January 1, 2026 and December 31, 2035. These projects make up the 2035 horizon year highway projects. Notable projects include:

- I-85 Widening from US 321 to NC 273
- I-85 Widening from the South Carolina State Line to US 321
- Catawba Crossings Project from NC 279 to I-485 in Mecklenburg County
- NC 73 Widening from NC 16 BUS into Mecklenburg County
- NC 16 BUS Widening from NC 73 to Webbs Road
- NC 180 (North Post Road) Widening from Elizabeth Avenue to NC 150 (Cherryville Road)

- Belmont-Mount Holly Central Loop
- Cox Road Improvements from I-85 to US 29/74 (Franklin Boulevard)
- Lineberger Connector Project from US 29/74 (Franklin Boulevard) to Aberdeen Boulevard Extension

CATAWBA CROSSINGS PROJECT

In order to fully address the congestion problems in eastern Gaston County, the GCLMPO will continue to seek funding for the Catawba Crossings project. For several years, regional discussions have taken place regarding the need for an additional bridge in southeast Gaston County to provide additional connectivity to Mecklenburg County. The Catawba Crossings project is aptly named as it traverses both the Catawba River and the South Fork Catawba River beginning at NC 279 (New Hope Road) in Gaston County to West Boulevard at I-485 in Mecklenburg County. Catawba Crossings will provide much needed traffic congestion relief for commuters in both North and South Carolina and will improve general east-west connectivity, as well as improve access to the Charlotte-Douglas International Airport.

LINEBERGER CONNECTOR PROJECT

The Lineberger Connector Project in its entirety consists of approximately 3.8 miles of new location roadway and a new bridge over I-85, connecting both sides of I-85 between Franklin Boulevard and NC 7 to the north. The construction of the Lineberger Connector will complete the network between Exit 21 (Cox Road) and Exit 22 (South Main Street) east and west, and NC 7 and Franklin Boulevard north and south. The project also provides a second grade separation crossing between Exits 21 and 22 over I-85. This project will improve traffic flow for community residents and regional commuters from Gaston County. The new grade separation will also unlock more than 450 acres of property that is ripe for local

and regional development. This project was submitted for TIGER Discretionary Grant funding in October 2017.

2045 Horizon Year Highway Projects

The 2045 roadway network includes 25 roadway widening, new construction, and intersection improvement projects proposed for completion between January 1, 2036 and December 31, 2045, which make up the 2045 horizon year highway projects. Notable projects include:

- NC 150 Widening from US 321 in Lincolnton to the proposed US 321 Bypass
- NC 273 Widening from A&E Drive to Lanier Avenue
- Southridge Parkway West Extension from Crowders Mountain Road to Edgewood Road
- Gaston Day School Road Extension from Kinmere Drive to NC 274 (Union Road)

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Table 11-1. Statewide Tier Highway Projects

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
2025 HORIZON YEAR																
I-5000	Gaston		I-85	I-85 Interchange Upgrade	US 321 Interchange		Modify interchange	Statewide	Yes	No	Interstate	Committed	\$22,847,000			
R-4045	Cleveland		US 74	US 74 Upgrade	Shelby Bypass	Mooreboro	Upgrade to controlled access from Shelby Bypass to Mooreboro with grade separation at SR 1168 (Lattimore Rd)	Statewide	Yes	No	Principal Arterial	Holding Tank	\$15,700,000	\$18,034,365		
2035 HORIZON YEAR																
I-5719	Gaston	9.8	I-85	I-85 Widening	US 321	NC 273	Widen to 8 Lanes.	Statewide	Yes	No	Interstate	Committed	\$388,909,000 [†]		\$544,472,600 [†]	
I-5985	Cleveland Gaston	17.1 [†]	I-85	I-85 Widening	SC State Line [†]	US 321 [†]	Segment A: SC Sate Lline to US 74 - Widen to six lanes. Segment B: US 74 to US 321 - Widen to eight lanes. [†]	Statewide	Yes	No	Interstate	Committed	\$286,700,000 [†]		\$401,380,000 [†]	
U-2567	Cleveland	0.0	US 74	Dixon Blvd Interchange	NC 150 (DeKalb St)	NA	US 74-NC 150 (DeKalb Street). Construct interchange.	Statewide	Yes	No	Principal Arterial	Committed	\$23,300,000 [†]		\$32,620,000 [†]	
U-5929	Cleveland		US 74	US 74/NC 226 Intersection Improvements	US 74 (Dixon Blvd)	NC 226 (Earl Rd)	Intersection improvements or grade separation	Statewide	Yes	No	Principal Arterial	Committed	\$17,500,000 [†]		\$24,500,000 [†]	
2045 HORIZON YEAR																
	Cleveland		US 74	US 74 Upgrade	I-26	US 74 at Mooreboro	Upgrade freeway to interstate standards	Statewide	Yes	No	Principal Arterial	Holding Tank	\$76,801,000			\$131,090,588
UNFUNDED																
	Gaston	6.1	New	Garden Parkway	US 321	NC 274	Construct new four-lane road on new location	Statewide	Yes							\$313,553,640
	Gaston	5.9	New	Garden Parkway	I-85	US 321	New four-lane road on new location [†]	Statewide	Yes							†
	Gaston	3.3	New	Garden Parkway [†]	NC 279 [†]	NC 274 [†]	Construct freeway on new location [†]	Statewide	Yes							†

* Regulation § 93.127
† Amended since MTP adoption in March, 2018

Table 11-2. Regional Tier Highway Projects

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
2025 HORIZON YEAR																
B-6051	Gaston	0.4	US 29/ US 74	Wilkinson Blvd	NC 7 (Catawba St)	East Bank of Catawba River	Widen existing four-lane bridge and cross section to six-lanes. The road on both sides of the bridge will be widened to six lanes	Regional	Yes	No		Committed	\$44,000,000 [†]	\$44,000,000 [†]		
U-6146	Gaston	1.2	US 29/ US 74	Wilkinson Blvd	Market St	SR 2015 (Alberta Ave)	Widen existing four-lane bridge and cross section to six-lanes. Widen road on both sides of bridge to six-lanes	Regional	Yes	No		Committed	\$25,205,000 [†]	\$25,205,000 [†]		
R-5710	Lincoln	0.0	NC 73	NC 73 Intersection	NC 16 Business		Add through lanes on NC 73 and other intersection improvements as needed	Regional	No	Yes*	Minor/Other Principal Arterial	Committed	\$ 1,230,000			
R-5712	Lincoln	0.0	NC 16 Bus	NC 16 Bus Intersection	SR 1439 Unity Church		Add turn lanes	Regional	No	Yes*	Local / Minor Arterial	Committed	\$ 1,163,000			
R-5713	Cleveland	6.0	US 74	Dixon Blvd Access Management	US 74 Bus	NC 226	Placement of Directional Crossovers and Management of Access Roads to increase Safety and Efficiency. Construct access management improvements	Regional	No	Yes*	Principal Arterial	Committed	\$ 3,680,000			
U-2523B	Gaston	1.9	NC 279	Lower Dallas Hwy Widening	North of SR 2275 (Robinson- Clemmer Rd)	West of NC 275 in Dallas	Widen to Multi-Lanes	Regional	Yes	No	Principal Arterial	Committed	\$ 14,200,000			
U-5775	Cleveland	0.0	US 74 Business	Marion Street Intersection	NC 150 (Cherryville Road)		Realign intersection	Regional	No	Yes*	Minor Arterial	Committed	\$ 1,560,000			
U-5778	Gaston	0.0	NC 279	Lower Dallas Hwy Intersection Improvements	NC 279 (Lower Dallas Hwy)	NC 275 (Dallas Stanley Hwy)	Intersection improvements at intersection of NC 279 and Dallas-Stanley Highway. Crosswalks, pedheads, turn lanes on every approach.	Regional	No	Yes*	Minor Arterial/ Other Principal Arterial	Committed	\$ 3,150,000			
U-5959	Gaston		US 74	US 74/NC 273 Intersection Improvements	US 74 (Wilkinson Blvd)	NC 273 (Park St)	Add turn lanes on NC 273 and pedestrian cross walk improvements on all approaches on NC 273 at US 74.	Regional	No	Yes*	Principal Arterial	Committed	\$ 700,000			
R-2707C,F,G	Cleveland	5.3	Shelby Bypass	Shelby Bypass / US 74	Sections C, F, G		Construct Freeway on New Location.	Regional	Yes	No	New Route	Committed	\$ 69,100,000			
U-5961	Gaston	1.0	NC 274	Union Rd	Osceola St	Niblick Dr	Upgrade roadway to 5 lanes.	Regional	Yes	No	Principal Arterial	Committed	\$ 6,600,000			
U-5962	Lincoln		NC 16 BUS	NC 16 BUS Intersection Realignment	SR 1373 Campground Rd), SR 1386 (Will Proctor)		Re-align to make Campground to St. James the direct line and widen Will Proctor to 12’ lanes. Improve intersection of NC 16 Business at Will Proctor.	Regional	No	Yes*	Minor Arterial	Committed	\$ 4,462,000			

* Regulation § 93.127

[†] Amended since MTP adoption in March, 2018

Table 11-2. Regional Tier Highway Projects (Continued)

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
2025 HORIZON YEAR (CONTINUED)																
U-5965	Gaston		US 29/ US 74	Franklin Blvd Intersection Improvements	US 29/74 (Franklin Blvd)	NC 274 (Broad St)	Intersection improvements. Crosswalks, pedheads, turn lanes on every approach.	Regional	No	Yes*		Committed	\$ 3,000,000			
U-5970	Gaston	0.2	US 321	US 321 Widening	19th Ave	Clyde St	Add center median with turning lane and high- visibility pedestrian accommodations as needed. Address access management.	Regional	No	Yes*	Principal Arterial	Committed	\$5,300,000 [†]	\$5,300,000 [†]		
U-6143	Gaston	0.1	US 74	US 74/NC 7 Intersection Improvements	US 74	NC 7	Construct NB right-turn lane on NC 7 (E Catawba St) and extend existing WB left-turn lane on US 74 (Wilkinson Blvd).	Regional	No	Yes*	Principal Arterial/ Minor Arterial	Committed	\$2,200,000 [†]	\$2,200,000 [†]		
U-3633	Gaston	1.3	NC 273	Tuckaseege Road Widening	Beatty Drive	Highland Street	Widen to four-lane divided.	Regional	Yes*	No	Other Prinnicipal Arterial	Committed	NHP Funded			
	Lincoln	0.5	NC 16	NC 16 Interchange Improvements	NC 16	Optimist Club Rd	Add grade separated interchange.	Regional	No	No	Local		\$3,000,000	\$3,446,057		
2035 HORIZON YEAR																
	Gaston/ Mecklenburg	5.7	New	Catawba Crossings	I-485	NC 279	Construct new Boulevard on new location.	Regional	Yes*	No	New Route	Holding Tank	\$90,000,000		\$126,021,728	
	Lincoln	1.5	NC 16	NC 16 Widening	Fairfield Forest Rd	Webbs Rd	Widen to a four-lane divided facility.	Regional	No	No	Minor Arterial		\$5,000,000		\$7,001,207	
R-5721	Lincoln	2.7	NC 73	NC 73 Widening	NC 16 Business	W Catawba in Mecklenburg County	Widen to Multi-Lanes.	Regional	Yes	No		Committed	\$165,130,000 [†]		\$231,182,000 [†]	
	Lincoln	3.9	New Route	NC 73 Extension	US 321	Camp Creek Rd	Construct new four-lane divided freeway on new location.	Regional	Yes*	No	Principal Arterial		\$15,600,000		\$21,843,766	
U-2221C	Cleveland	1.6	NC 180	N Post Rd	SR 2052 (Elizabeth Ave)	NC 150 (Cherryville Rd)	NC 226 to NC 150. Widen to Multi-Lanes. Section C: SR 2052 to NC 150.	Regional	No	No	Minor Arterial	Carryover	\$18,100,000		\$25,344,370	
U-5800	Gaston	0.0	NC 7	NC 7 Intersection Improvements and Widening	NC 7/US 74	NC 7/US 29	Add northbound through lane and other intersection improvements as needed.	Regional	No	Yes*	Arterial/Other Principal Arterial	Committed	\$7,039,000 [†]		\$9,854,600 [†]	
	Gaston	1.2	US 321	York Rd	Beam St	Carolina Ave	Add center median with turning lane and high-visibility pedestrian accommodations as needed. Address access management.	Regional	No	Yes	Principal Arterial		\$10,551,795		\$14,775,061	
	Gaston	3.2	SR 2439 (Beaty Rd)	Beaty Rd	NC 279 (South New Hope Rd)	Union Rd	Widen Beaty Rd to three lanes from S. New Hope Rd to Union Rd with sidewalk on west side and multi-use path on east side.	Regional	No	No	Minor Arterial		\$17,439,702		\$24,419,792	

* Regulation § 93.127

[†]Amended since MTP adoption in March, 2018

Table 11-2. Regional Tier Highway Projects (Continued)

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
2035 HORIZON YEAR (CONTINUED)																
	Gaston	0.1	NC 279	N New Hope Rd	N New Hope Rd	US 29/74	Add right turn lane on south bound New Hope Rd onto west bound Franklin Blvd	Regional	No	Yes	Principal Arterial		\$1,500,000		\$2,100,362	
	Gaston	0.8	New Route	Lanier Ave/Sella Ridge Dr/New Alignment/ Woodcliff Ln/New Alignment	NC 273 (N Main St)	SR 1923 (Woodlawn Ave)	Upgrade and connect existing two-lane ROW sections of Lanier Ave and Woodcliff to cross Dutchman's Creek to Hawthorne Street with sidewalk.	Regional	No	No	Local		\$2,945,148		\$4,123,918	
	Lincoln	0.5	NC 16	NC 16 Interchange Improvements	NC 16	St. James Church Rd	Add grade separated interchange.	Regional	No	No	Local		\$3,000,000		\$4,200,724	
R-0617BB	Lincoln	3.3	NC 150	NC 150	West of Indian Creek	US 321 at Lincoln	NC 279 at Cherryville to Relocated US 321. Widen to Multi-Lane	Regional	No	No		Carryover	\$33,400,000		\$46,768,063	
R-2307A	Lincoln	0.2	NC 150	NC 150 Widening	Relocated NC 16	East of SR 1840 (Greenwood Rd)	Widen to multi-lanes.	Regional	No	No		Carryover			\$1,414,000	
U-6139	Lincoln	1.8	NC 73	NC 73 Widening	Ingleside Farm Rd	NC 16	Widen from 2 to 4 lanes from Anderson Creek, west of SR 1383 (Ingleside Farm Rd) to NC 16 including widening of RR bridge and interchange improvements at NC 16.	Regional	Yes	No	Principal Arterial		\$50,100,000 [†]		\$70,140,000 [†]	
U-6140	Lincoln	2.3	NC 27	NC 27 (East Main St) Improvements [†]	US 321 BUS	NC 150 (East)	Convert TWLTL to Median, Signal synchronization, consolidation of driveways and intersection improvements at US 321 BUS (Generals Blvd) and NC 27 (E Main St) including dual left turn lanes on SB US 321 BUS and on WB NC 27 with additional receiving lanes on SB US 321 BUS and widening bridge over RR. Add NB left turn lane from NC 27 to Lithia Inn Rd.	Regional	No	Yes*	Minor Arterial		\$32,110,000 [†]		\$44,954,000 [†]	
U-6141	Gaston	1.2	US 29/74 [†]	US 74 (Franklin Blvd)/Redbud Dr Intersection Improvements [†]	Redbud Dr		Improve intersection area including new grade-separated crossing of US 29/74 (Franklin Blvd) [†]	Regional [†]	No	No	Principal Arterial		\$28,500,000 [†]		\$39,900,000 [†]	
R-2707D	Cleveland	4.1	Shelby Bypass	Shelby Bypass / US 74	East of NC 150	Existing US 74 west of SR 2238 (Long Branch Rd)	Construct four lane divided freeway on new location.	Regional	Yes	No	New Route	Committed	\$45,750,000 [†]		\$64,050,000 [†]	
R-2707E	Cleveland	2.6	Shelby Bypass	Shelby Bypass / US 74	Existing US 74 West of SR 2238 (Long Branch Road)	To west of SR 1001 (Stony Point Rd)	Construct four lane divided freeway on new location.	Regional	Yes	No	Principal Arterial	Committed	\$44,100,000 [†]		\$ 61,740,000 [†]	

* Regulation § 93.127
[†] Amended since MTP adoption in March, 2018

Table 11-2. Regional Tier Highway Projects (Continued)

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
2045 HORIZON YEAR																
	Gaston	1.2	I-85/New	I-85/New	Davidson Ave/Tulip Drive	Fairview Dr/NA	New interchange at I-85/ Davidson Ave. New 2-lane alignment connecting Tulip Dr to Fairview Dr. Include sidewalks and bike facilities.	Regional	Yes	No	Interstate/Local		\$19,046,889			\$32,510,877
	Gaston	3.2	SR 1804	Ratchford Rd	US 321	NC 279 (Lower Dallas Rd)	Widen existing two-lane road to three-lanes; One-half mile of road on new location.	Regional	No	No	Local		\$23,482,695			\$40,082,294
	Lincoln	8.5	NC 73	NC 73 Widening	Jack Dellinger Rd	Ingleside Farm Rd	Widen to multi-lanes.	Regional	Yes	No	Principal Arterial		\$40,000,000			\$68,275,459
R-0617C	Lincoln	1.4	NC 150	NC 150	US 321 at Lincolnton	US 321 Bypass	NC 279 at Cherryville to Relocated US 321. Widen to Multi- Lanes, Part on New Location. Section C: US 321 at Lincolnton to US 321 Bypass.	Regional	Yes	No	Minor Arterial	Carryover	\$3,000,000			\$5,120,659
	Lincoln	2.8	NC 27 W	Riverside Dr Widening	Rock Dam Rd	Grove St	Widen existing two-lane road to three-lane.	Regional	No	No	Major Collector		\$11,200,000			\$19,117,129
	Gaston	1.8	NC 273	Highland St/N Main St Widening	A&E Dr	SR 1939 (Lanier Ave)	Widen two-lane facility to four-lane divided facility with sidewalks and bike lanes on both sides.	Regional	No	No	Minor Arterial	Holding Tank	\$18,100,000			\$30,894,645
	Gaston	0.1	NC 273	Beatty Dr	Ferstl Ave	NA	Intersection Improvements. Crosswalks, pedheads, and turn lanes on every approach.	Regional	No	Yes*	Minor Arterial		\$298,805			\$510,026
	Gaston	1.6	SR 1001	Oakland St	NC 275/279 (Trade St)	SR 1803 (Carr Rd)	Widen substandard two-lane road to provide standard lane width of 12 feet. No additional lanes will be added.	Regional	No	Yes*	Arterial/Minor Collector		\$4,881,467			\$8,332,110
	Gaston	0.1	NC 273 (Mountain Island Highway)	NC 273 (Mountain Island Highway) Intersection Improvements	NC 273 (Mountain Island Highway)	NC 273/Lucia Riverbend Hwy (SR 1922)	Add turn lanes to every approach of intersections.	Regional	No	Yes*	Minor Arterial / Major Collector	Holding Tank	\$720,000			\$1,228,958
	Gaston	0.1	NC 273	Sandy Ford Rd Intersection Improvements	SR 1918 (Sandy Ford Rd)	NC 273	Intersection improvements at all three legs of NC 273 and Sandy Ford Rd (SR 1918). Construct Interchange	Regional	No	Yes*	Minor Arterial / Major Collector	Holding Tank	\$837,000			\$1,428,664
	Gaston	0.5	New Route	New Route	NC 273 (Lucia Riverbend Hwy)	NC 16	Construct new 2-lane alignment with sidewalks on both sides.	Regional	No	No	Major Collector		\$2,716,039			\$4,635,970
	Cleveland	0.1	NC 216	S Battleground Ave	Mountain St/Gold St	NA	Mountain St and Gold St Railroad Intersection Crossing Changes. Crosswalks, pedheads, turn lanes on every approach, and signalization if justified. Safety improvements	Regional	No	Yes*	Minor Arterial		\$203,482			\$347,321

* Regulation § 93.127

Table 11-2. Regional Tier Highway Projects (Continued)

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
2045 HORIZON YEAR (CONTINUED)																
	Gaston	0.5	NC 273	NC 273 Realignment	South Point Rd	Armstrong Rd	This project improves traffic flow along NC 273 (S Point Rd turning onto Armstrong Rd) by realigning the existing T intersection to allow the highest-volume movements (EBLs and SBRs) to traverse the intersection as the free-flowing, major street through movements. The lower-volume street, S Point Rd (SR 2525), will be realigned to intersect NC 273 under stop- controlled conditions. Improvements would include the installation of turn lanes on all three approaches.	Regional	No	Yes*	Minor Arterial		\$3,000,000			\$5,120,659
	Gaston	0.1	SR 2445	Kendrick Rd	SR 2437 (Robinwood Rd)	SR 2439 (Beaty Rd)	Widen Kendrick Road at intersections. Include pedestrian and bicycle accomodations.	Regional	No	Yes*	Minor Arterial		\$3,013,362			\$5,143,467
UNFUNDED																
	Gaston	5.8	NC 279	Dallas Cherryville Hwy Widening	Bess Town Road	SR 1630 (Dick Beam Rd)		Regional	No	No			\$48,644,834			\$83,031,210
	Gaston	3.4	NC 273 (South Point Rd)	South Point Rd Widening	NC 273 (Lower Armstrong Rd)	Nixon Rd	Widen two-lane road to three-lanes from NC 273/Lower Armstrong Rd to Nixon Rd at intersection.	Regional	Yes	No		Holding Tank	\$39,430,000			\$67,302,534
	Gaston	4.8	NC 279	Dallas Cherryville Hwy Widening	NC 275 (Dallas Bessemer City Hwy)	Bess Town Road	Widen two-lane facility to four-lane facility.	Regional	Yes	No			\$48,644,834			\$83,031,210
	Gaston	1.7	New	Stanley Southern Connector	NC 275 (Dallas-Stanley Hwy)	NC 27 (Charles Raper Jonas Hwy)	Construct New, Four-Lane Divided Facility from NC 275 to NC 27 (Charles Raper Jonas Hwy)	Regional	No	No			\$21,083,494			\$35,987,131
U-2221A	Cleveland	0.9	NC 180	NC 180 Widening	NC 226 (Earl Rd)	SR 2200 (Taylor Rd)	Widen to multi-lanes.	Regional	No	Yes*		Carryover	\$7,300,000			\$12,460,271
	Gaston	1.6	NC 274	Union Rd Widening	Gaston Day School Rd	SR 2439 (Beaty Rd)	Widen the existing two-lane facility to three lanes with a portion on new location with sidewalks and bike lanes on both sides of road.	Regional	Yes	No		Holding Tank	\$14,206,484			\$24,248,855
	Gaston	4.7	New	Belmont-Mount Holly Southern Loop	NC 273 (South Point Rd)	US 29/74 (Wilkinson Blvd)	Construct New, Four-Lane Divided Facility from South Point Road to US 29/74 (Wilkinson Boulevard)	Regional	Yes	No			\$53,020,565			\$90,500,085

* Regulation § 93.127

Table 11-2. Regional Tier Highway Projects (Continued)

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
UNFUNDED (CONTINUED)																
	Gaston	3.5	NC 274	Union Rd	Bradley Trail	South Carolina State Line	Widen Union Rd to 3-lane facility from Beaty Rd to South Carolina State Line. Include sidewalks and bike facilities along both sides.	Regional	No	No			\$19,598,903			\$33,453,102
	Lincoln	2.0	New Route	Southwest Connector	NC 27 W (Riverside Dr)	NC 150 S	Connect NC 27 W (Riverside Dr) to NC 150 (Cherryville Hwy) with a two-lane major thoroughfare on new location. This proposed facility will connect NC 27 (Riverside Dr) with NC 182, Old Lincolnton-Crouse Rd (SR 1228), Old Cherryville Rd (SR 1407), Love Memorial School Rd (SR 1416), and NC 150 (Cherryville Hwy) and will include a grade separation over the railroad.	Regional	Yes	No			\$33,000,000			\$56,327,254

* Regulation § 93.127

Table 11-3. Division Tier Highway Projects

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
2025 HORIZON YEAR																
R-5849	Cleveland		Washburn Switch Rd/New Route	Washburn Switch Rd			Construct access road into new facility. Economic development incentive package.	Division	No	No	Local	Committed	Economic Dev. Funding			
U-3608	Gaston	0.3	NC 7	N Main St Widening	I-85	US 29/74 (Wilkinson Blvd)	Widen to four lanes with right-turn lanes at intersections as necessary [†]	Division	No	No	Minor Arterial	Committed	\$ 4,715,000			
U-5819	Gaston	0.0	NC 27	W Charlotte Ave Intersection	NC 27 (W Charlotte Ave)	SR 2534 (Hawthorne St)	Intersection improvements and signalization. Crosswalks, pedheads, turn lanes on every approach.	Division	No	Yes*	Minor Arterial	Committed	\$ 2,550,000			
U-5821	Gaston	3.8	NC 279	S. New Hope Rd Widening	SR 2478 (Titman Rd)	SR 2435 (Union-New Hope Rd)	Widen existing facility to four-lanes divided. [†]	Division	Yes	No	Principal Arterial	Committed	\$ 28,730,000 [†]			
U-6043	Gaston	1.1	US 29/ US 74	Franklin Blvd	SR 2200 (Cox Rd)	400 feet east of Lineberger Rd	Widen from five to six lanes [†]	Division	Yes	No	Principal Arterial	Committed	\$ 10,500,000 [†]	\$10,500,000 [†]		
U-6078	Gaston	0.0	NC 275	NC 275 Intersection Improvements	NC 274, SR 1456 (White Jenkins Rd), SR 1327 (Fairview Rd)		Close White Jenkins at NC 275 and use Fairview to access NC 275. Improve intersections of NC 275 at NC 274, NC 275 at Fairview, and White Jenkins at Fairview.	Division	No	Yes*	Major Collector	Committed	\$ 900,000			
U-6038	Gaston	3.9 [†]	US 74 (Wilkinson Blvd)	Adaptive Signal System	NC 7 (Catawba St)	SR 2209 (Wesleyan Dr)	Implement adaptive signal system to improve traffic flow and adjust timing to accommodate periodic traffic diversion from I-85.	Division	No	Yes*	Principal Arterial, not adding capacity	Committed	\$826,000 [†]	\$826,000 [†]		
	Cleveland	0.9	NC 161	York Rd	US 74 Business (King St)	I-85	Widen from three-lanes to four-lanes on existing ROW.	Division	No	No	Minor Arterial		\$7,097,208	\$8,152,461		
	Lincoln	1.7	SR 1379	SR 1379 (Webbs Rd) Modernization	NC 16 Business	SR 1376 (Burton Ln)	Widen existing lanes to include wide shoulders. No additional lanes will be added.	Division	No	Yes*	Local		\$1,405,169	\$1,614,098		
	Gaston	0.1	Armstrong Park Rd	Armstrong Park Rd Improvements	Armstrong Park Rd	Gardner Park Elementary School	Add north bound turn lane on Armstrong Park Dr into school	Division	No	Yes*	Principal Arterial		\$265,122	\$304,542		
	Gaston	1.0	New Route	New Route	Brickyard Road	W. Catawba Ave/Rankin Ave	Construct new 2-lane alignment with sidewalks.	Division	No	No	Minor Arterial		\$10,582,637	\$12,156,123		
	Gaston	0.1	SR 1484	E Maine Ave	12th St	NA	Intersection improvements. Crosswalks, pedheads, turn lanes on every approach, and signalization if justified.	Division	No	Yes*	Minor Arterial/ Major Collector		\$209,665	\$240,839		

* Regulation § 93.127
[†] Amended since MTP adoption in March, 2018

Table 11-3. Division Tier Highway Projects (Continued)

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
2025 HORIZON YEAR (CONTINUED)																
	Gaston	0.4	Gaston Mall Drive	Gaston Mall Drive Extension	Cox	Franklin Blvd	Extend Gaston Mall Drive from Cox Rd to Franklin Blvd.	Division	No	No	Local		\$1,993,050	\$2,289,388		
	Gaston	0.5	3rd St	3rd Street Extension	N Main St (NC 7)	First St (NC 7)	Extend 3rd St as a 2-lane facility from NC 7 (Main St) to NC 7 (First St). This includes a traffic circle at NC 7 (First St) with a connection to Potts St and improvements to Ash St.	Division	No	No	New Route (local)		\$3,090,000	\$3,549,439		
	Gaston	1.1	SR 1255 (Hudson Blvd)	Hudson Blvd Extension	SR 1136 (Myrtle School Rd)	Chapel Grove Rd	Construct new 3-lane facility with sidewalks and bike facilities.	Division	No	No	New Route (Minor Arterial)		\$7,129,403	\$8,189,443		
	Gaston	1.2	McA- denville Road	McAdenville Road Extension	NC 27 (Park St)	Hazeleen Avenue	Construct two-lane road from Park Street to Hazeleen Avenue. This road will be an extension of McAdenville Road, and consist of connecting short sections of existing road with new segments, for a total of 1.2 miles.	Division	No	No	New Route (Local)	Holding Tank	\$7,473,938	\$8,585,205		
	Lincoln	1.5	New Route	Motz Ave Extension	NC 27	S Laurel St	Widen Motz Ave to 11-foot lanes and extend on new location west to NC 27 (Riverside Drive) and east to Laurel St (SR 1262) at Flint Street. Includes sidewalks on both sides.	Division	No	No	Minor Arterial		\$12,108,938	\$13,909,364		
	Gaston	2.4	SR 2439	Lowell-Bethesda Rd	NC 279 (South New Hope Rd)	US 29/74 (Franklin Blvd)	Widen Lowell Bethesda Road from Two- Lane to Three Lane from Wilkinson Blvd to NC 279 (S. New Hope Road) with new alignment over RR crossing, providing a direct connection to Groves Street, including bicycle and pedestrian facilities.	Division	No	No	Minor Arterial	Holding Tank	\$20,779,040	\$23,868,586		
	Gaston	0.1	NC 161	13th St	W. Virginia Ave	NA	Intersection improvements. Crosswalks, pedheads, turn lanes on every approach, and signalization if justified.	Division	No	Yes*	Major Collector/ Principal Arterial		\$209,665	\$240,839		
	Gaston	0.5	SR 2040 (West Cataw- ba)	West Catawba Intersection Improvements	West Catawba (SR 2040)	South Hawthorne	Install traffic circle at West Catawba and South Hawthorne Street, including pedestrian accommodations.	Division	No	Yes*	Minor collector/ Local	Holding Tank	\$1,216,000	\$1,396,802		
	Gaston	0.6	SR 1307	Edgewood Rd Widening	SR 1395 (Southridge Pkwy)	I-85	Widen existing two-lane road to a three- lane facility.	Division	No	No	Minor Arterial		\$5,148,864	\$5,914,427		
	Gaston	1.1	Arm- strong Ford Rd	Armstrong Ford Rd Realignment	NC 279 (South New Hope Rd)	Armstrong Ford Rd	Realign Armstrong Ford Rd - new 2LDIV facility	Division	No	No	Minor Arterial/ Major Collector		\$6,747,015	\$7,750,199		

* Regulation § 93.127

Table 11-3. Division Tier Highway Projects (Continued)

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
2035 HORIZON YEAR																
R-5859	Lincoln	3.8	NC 16	NC 16 Business Widening	NC 73	Fairfield Forest Rd	Widen to a four-lane divided facility.	Division	No	No	Minor Arterial	Carryover	\$51,800,000		\$72,532,506	
	Gaston	1.2	SR 2200 (Spencer Mountain Rd)	Spencer Mountain Rd Widening	NC 7 (East Ozark Ave/ Lowell Rd)	Central Ave	Widen two-lane road to a three-lane cross section from NC 7 (East Ozark Ave) to Central Avenue	Division	No	No	Minor Arterial	Holding Tank	\$12,491,000		\$17,490,416	
U-6044	Gaston	0.3	SR 2200 (Cox Rd)	Cox Rd Improvements	I-85	US 29/74	Selective widening, operational movements, and possible grade separation at US 29/74	Division	Yes	No	Principal Arterial	Carryover	\$31,700,000		\$44,387,653	
	Gaston	2.1	New	Belmont-Mount Holly Central Loop	US 29/74 (Wilkinson Blvd)	SR 2000 (Old Hickory Grove Rd)	Construct Four-Lane Divided Facility including Bridge Over I-85 from US 29/74 (Wilkinson Boulevard) to Old Hickory Grove Road	Division	No	No	Minor Arterial		\$36,566,878		\$51,202,457	
	Gaston	0.1	SR 2014 (Lakewood Rd)	Lakewood Rd Intersection Improvements	Lakewood Rd at Eagle Rd		Construct traffic circle with pedestrian and bicycle facilities.	Division	No	Yes	Minor Arterial	Holding Tank	\$1,100,000		\$1,540,266	
	Gaston	1.8	Aberdeen Blvd	Aberdeen Blvd Extension	Cox Rd	Main St (Lowell)	Extend four-lane divided Alberdeen Blvd from Cox Rd to Main St in Lowell.	Division	No	No	Minor Collector		\$14,530,725		\$20,346,523	
	Gaston	2.5	SR 1131	Linwood Rd	Crowder's Creek	US 29/74 (Franklin Blvd)	Widen to three lanes with some relocation. Include sidewalks and bicycle facilities.	Division	No	No	New Route (Minor Arterial)		\$16,794,362		\$23,516,161	
	Lincoln	0.8	New Route	Jack Dellinger Rd Connector	Jack Dellinger Rd	Asbury Church Rd	Construct two-lane road on new location.	Division	No	No	Minor Collector		\$3,708,000		\$5,192,095	
	Gaston	0.1	SR 1307	Alabama Ave	8th St	NA	Install traffic circle	Division	No	Yes*	Local/Minor Arterial		\$828,061		\$1,159,485	
	Gaston	0.5	Lineberger Rd	Lineberger Rd Extension	Franklin Square	Aberdeen Blvd Extension	Extend Lineberger Rd as a three-lane facility from Franklin Square to Aberdeen Blvd Extension.	Division	No	No	Local		\$6,257,250		\$8,761,661	
	Gaston	0.9	SR 1448	Puetts Chapel Rd	SR 1484 (Maine Ave)	Proposed NC 274 Bypass	Widen existing two-lane road to a three-lane facility.	Division	No	No	Local		\$8,202,310		\$11,485,214	
2045 HORIZON YEAR																
	Gaston	1.3	SR 2209	Cramerton Rd	8th Ave	SR 2478 (Titman Rd)	Widen existing two-lane road to three- lanes and extend a new alignment to provide a direct connection to Titman Road.	Division	No	No	Minor Arterial		\$43,500,784			\$74,250,899
	Lincoln	5.8	St. James Church Rd/N Little Egypt Rd	St. James Church Rd/N Little Egypt Rd Widening	NC 73	NC 16 Business	Widen from two-lane to three-lane.	Division	No	No	Local		\$23,029,770			\$39,309,203
	Gaston Cleveland	7.6	NC 150	Cherryville Rd	SR 1651 (Delview Rd)	NC 180 (N Post Rd)	Widen two-lane facility to a four-lane facility from Cherryville to US 74 Bypass.	Division	Yes	No	Principal Arterial		\$34,918,764			\$59,602,365

* Regulation § 93.127

Table 11-3. Division Tier Highway Projects (Continued)

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
2045 HORIZON YEAR (CONTINUED)																
	Lincoln	1.9	SR 1380 (Op- timist Club Rd/ Triangle Cir)	SR 1380 (Optimist Club Rd/Triangle Cir) Widening	SR 1386 (N. Little Egypt Rd)	NC 16 BUS	Widen to four-lane facility.	Division	No	No	Local		\$12,373,606			\$21,120,340
	Gaston	1.7	New	Southridge Parkway West Extension	SR 1302 (Crowders Mountain Rd)	SR 1307 (Edgewood Rd)	Construct new three lane facility from Crowders Mountain Rd to Edgewood Rd.	Division	No	No	New Route (Minor Arterial/Major Collector)		\$15,068,723			\$25,720,600
	Gaston	2.8	New	Gaston Day School Rd Extension	Kinmere Dr	NC 274 (Union Rd)	Construct new 3-lane facility with sidewalks and bike facilities.	Division	No	No	New Route (Minor Arterial)		\$25,849,018			\$44,121,339

* Regulation § 93.127

Table 11-4. Enhancement Safety Projects

STIP ID NUMBER	COUNTY	MILEAGE	ROUTE	PROJECT NAME	FROM	TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	FUNCTIONAL CLASSIFICATION	SPOT STATUS	2018 COST	2025 COST	2035 COST	2045 COST
I-5000	Gaston		I-85	I-85 Interchange Upgrade	US 321 interchange		Modify interchange	Statewide	Yes	No	Interstate	Committed	\$22,847,000			
I-5713	Gaston	0.0	I-85	Cox Road Interchange Improvements			Add 1 lane to each off ramp.	Statewide	Yes	No	Principal Arterial	Committed	\$1,360,000			
I-5719	Gaston	9.8	I-85	I-85 Widening	NC 273	US 321	Widen to 8 Lanes.	Statewide	Yes	No	Interstate	Committed	\$257,509,000			
U-2567	Cleveland	0.0	US 74	Dixon Blvd Interchange	NC 150 (DeKalb St)	NA	US 74-NC 150 (DeKalb Street). Construct interchange.	Statewide	Yes	No	Principal Arterial	Committed	\$13,200,000			
U-5929	Cleveland		US 74	US 74/NC 226 Intersection Improvements	US 74 (Dixon Blvd)	NC 226 (Earl Rd)	Intersection improvements or grade separation	Statewide	Yes	No	Principal Arterial	Committed	\$17,000,000			
	Gaston		Cox Rd	Cox Rd/I-85 SB Ramp Improvements	Cox Rd	I-85 SB Ramp	Add SB right turn lane and signalization timing improvements	Statewide	No	Yes*	Principal Arterial		\$134,886	\$154,942	\$188,873	\$230,235
	Gaston		S Main St (Lowell)	S Main St/I-85 NB Ramp Improvements	S Main St	I-85 NB Ramp	Restripe (and add pavement/minimize concrete median) for a two-lane WB approach with exclusive left turn lane and shared left-right lane	Statewide	No	Yes*	Minor Arterial		\$166,619	\$191,393	\$233,307	\$284,400
	Gaston		S Main St (Lowell)	S Main St/I-85 SB Ramp Improvements	S Main St	I-85 SB Ramp	Restripe (and add pavement/minimize concrete median) for a two-lane WB approach with exclusive left turn lane and shared left-right lane	Statewide	No	Yes*	Minor Arterial		\$194,943	\$223,928	\$272,967	\$332,746
R-4045	Cleveland		US 74	US 74 Upgrade	Shelby Bypass	Mooreboro	Upgrade to controlled access from Shelby Bypass to Mooreboro with grade separation at SR 1168 (Lattimore Rd)	Statewide	Yes	No	Principal Arterial	Holding Tank	\$15,700,000	\$18,034,365	\$21,983,790	\$26,798,118
I-5985	Gaston		I-85	I-85 Widening	US 74	South Carolina State Line	Widen four-lanes to six-lanes	Statewide	Yes	No	Interstate	Carryover	\$143,400,000	\$164,721,525	\$200,794,620	\$244,767,521
	Gaston	6.9	I-85	I-85 Widening	US 321	US 74	Widen to 8 lanes.	Statewide	Yes	No	Interstate	Holding Tank	\$141,300,000	\$162,309,285	\$197,854,113	\$241,183,059
	Cleveland		US 74	US 74 Upgrade	I-26	US 74 at Mooreboro	Upgrade freeway to interstate standards	Statewide	Yes	No	Principal Arterial	Holding Tank	\$76,801,000	\$88,220,208	\$107,539,941	\$131,090,588
	Gaston	6.1	New	Garden Parkway	US 321	NC 274	Construct new four-lane road on new location.	Statewide	Yes					\$211,012,611	\$257,223,195	\$313,553,640
	Gaston	5.9	New	Garden Parkway	I-85	US 321	New two-lane road on new location.	Statewide	Yes					\$379,965,276	\$463,175,551	\$564,608,412

* Regulation § 93.127

Table 11-5. GCLMPO 2018-2022 TIP Projects

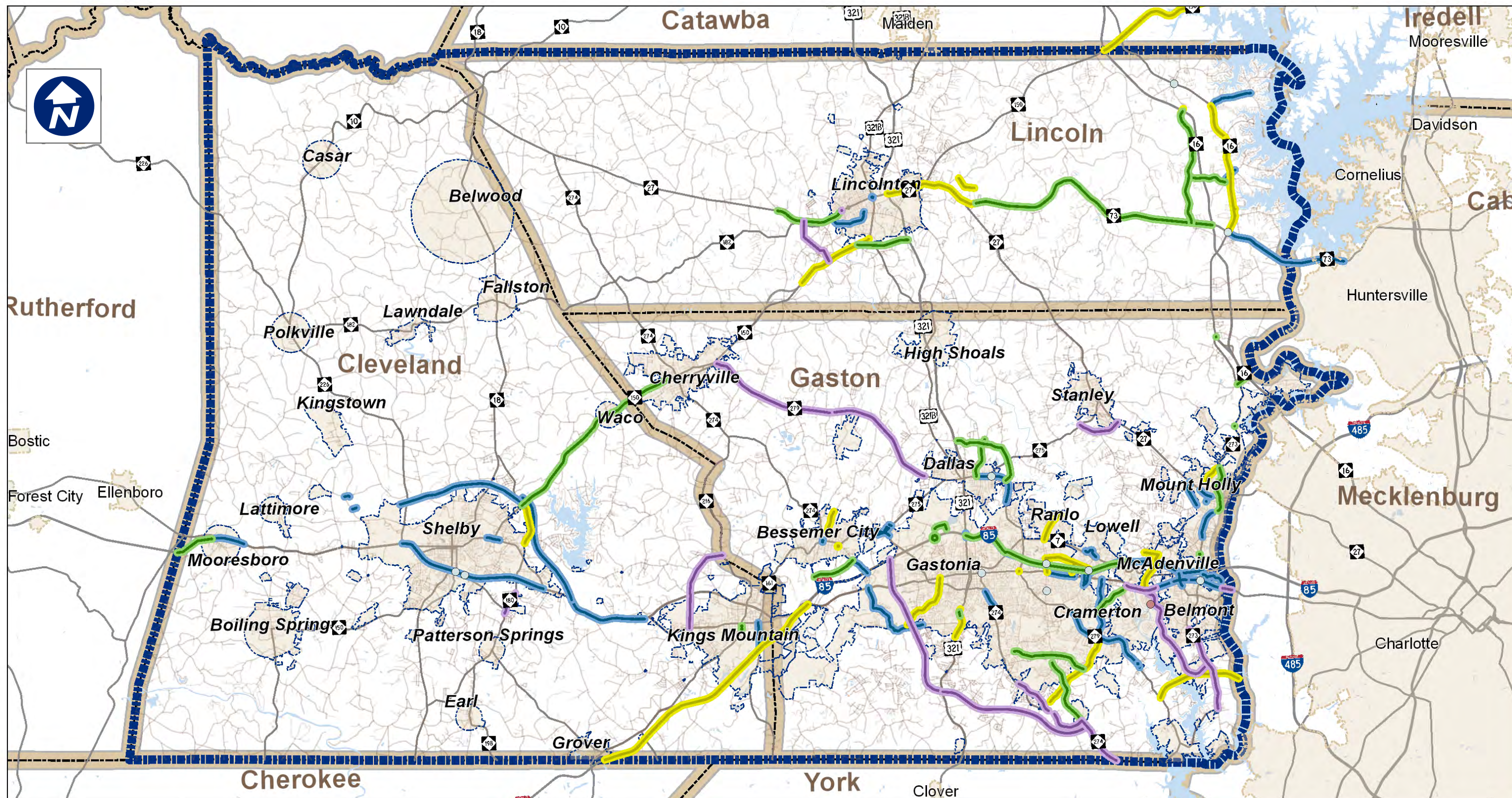
TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	STIP PROGRAMMED COST (MINUS LOCAL FUNDING)	SPOT STATUS	2040 MTP HORIZON YEAR	2045 MTP HORIZON YEAR
	Construct access road into new facility. Economic development incentive package.	Division	No	Yes*	\$1,875,000	Committed	2025	2025
US 29/74 (Wilkinson Blvd)	Widen to Multi-Lanes	Division	No	No	\$4,715,000	Committed	2025	2025
SR 2534 (Hawthorne St)	Intersection improvements and signalization. Crosswalks, pedheads, turn lanes on every approach.	Division	No	Yes*	\$2,550,000	Committed	2025	2025
SR 2435 (Union-New Hope Rd)	Widen existing facility to three-lanes with bicycle facilities and sidewalks on both sides of road. Reconfigure intersection at Armstrong Ford with new alignment extending from Twin Tops Road to Union-New Hope Road	Division	Yes	No	\$28,730,000	Committed	2025	2025
NC 274 (Broad St)	Intersection improvements. Crosswalks, pedheads, turn lanes on every approach.	Division	Yes	Yes*	\$3,000,000	Committed	2025	2025
400 feet east of Lineberger Rd	Add lane in the eastbound direction.	Division	Yes	No	\$9,200,000	Committed	2025	2025
	Close White Jenkins at NC 275 and use Fairview to access NC 275. Improve intersections of NC 275 at NC 274, NC 275 at Fairview, and White Jenkins at Fairview.	Division			\$900,000	Committed	2025	2025
SR 1438 (St Mark's Church Road)	Construct passing zones to address safety and capacity issues.	N/A- Safety	No	No	\$13,090,000	Committed	2025	2025
	Add through lanes on NC 73 and other intersection improvements as needed.	Regional	Yes	Yes*	\$1,230,000	Committed	2025	2025
	Add turn lanes.	Regional	No	Yes*	\$1,163,000	Committed	2025	2025
NC 226	Placement of Directional Crossovers and Management of Access Roads to increase Safety and Efficiency.	Regional	No	Yes*	\$3,680,000	Committed	2025	2025
W Catawba in Mecklenburg County	Widen to Multi-Lanes.	Regional	Yes	No	\$17,500,000	Committed	2025	2025
West of NC 275 in Dallas	Widen to Multi-Lanes	Regional	Yes	No	\$14,200,000	Committed	2025	2025
Highland Street	Widen to four-lane divided.	Regional	Yes	No	\$19,904,000	Committed	2025	2025
	Realign intersection.	Regional	No	Yes*	\$2,010,000	Committed	2025	2025
NC 275 (Dallas Stanley Hwy)	Intersection improvements at intersection of NC 279 and Dallas-Stanley Highway. Crosswalks, pedheads, turn lanes on every approach.	Regional	No	Yes*	\$ 3,000,000	Committed	2025	2025

* Regulation § 93.127

Table 11-5. GCLMPO 2018-2022 TIP Projects (Continued)

TO	PROJECT DESCRIPTION	FUNDING TIER	REGIONALLY SIGNIFICANT	EXEMPT	STIP PROGRAMMED COST (MINUS LOCAL FUNDING)	SPOT STATUS	2040 MTP HORIZON YEAR	2045 MTP HORIZON YEAR
NC 7/US 29	Add northbound through lane and other intersection improvements as needed.	Regional	No	Yes*	\$ 565,000	Committed	2025	2025
NC 273 (Park St)	Add turn lanes on NC 273 and pedestrian cross walk improvements on all approaches on NC 273 at US 74.	Regional			\$ 700,000	Committed	2025	2025
To existing US 74 west of SR 2238 (Long Branch Rd)	Construct Freeway on New Location.	Regional	Yes	No	\$ 45,750,000	Committed	2025	2025
To west of SR 1001 (Stony Point Rd)	Upgrade roadway to freeway	Regional	Yes	No	\$ 55,100,000	Committed	2025	2025
Niblick Dr	Upgrade roadway to 5 lanes.	Regional	No		\$ 6,600,000	Committed	2025	2025
	Construct Freeway on New Location.	Regional			\$ 83,157,000	Committed	2030	2025
	Re-align to make Campground to St. James the direct line and widen Will Proctor to 12' lanes. Improve intersection of NC 16 Business at Will Proctor.	Regional			\$ 4,742,000	Committed	2040	2025
SR 2209 (Wesleyan Dr)	Implement adaptive signal system to improve traffic flow and adjust timing to accommodate periodic traffic diversion from I-85.	Regional	Yes	No	\$ 714,000	Committed	2030	2025
	Modify interchange	Statewide	Yes	No	\$ 22,847,000	Committed	2030	2025
	Add 1 lane to each off ramp.	Statewide	Yes	Yes*	\$ 1,360,000	Committed		2025
US 321	Widen to 8 Lanes.	Statewide	Yes	No	\$ 255,500,000	Committed		2025
NA	US 74-NC 150 (DeKalb Street). Construct interchange.	Statewide	Yes	Yes*	\$ 11,700,000	Committed	2025	2025
NC 226 (Earl Rd)	Intersection improvements or grade separation	Statewide	Yes		\$ 17,000,000	Committed		2025

* Regulation § 93.127



LEGEND

- Highways
- Major Roads
- MPO Area
- Municipalities
- Counties
- Regional Waters
- Minor Roads

Horizon Year

- 2018 - 2025
- 2026 - 2035
- 2036 - 2045
- Unfunded

0 2 4 8 Miles

GASTON-CLEVELAND-LINCOLN
MPO
Metropolitan Planning Organization
Date created: 1/8/18

Figure: 11-2
GCLMPO
MTP Highway Projects by Horizon Year
2045 METROPOLITAN TRANSPORTATION PLAN

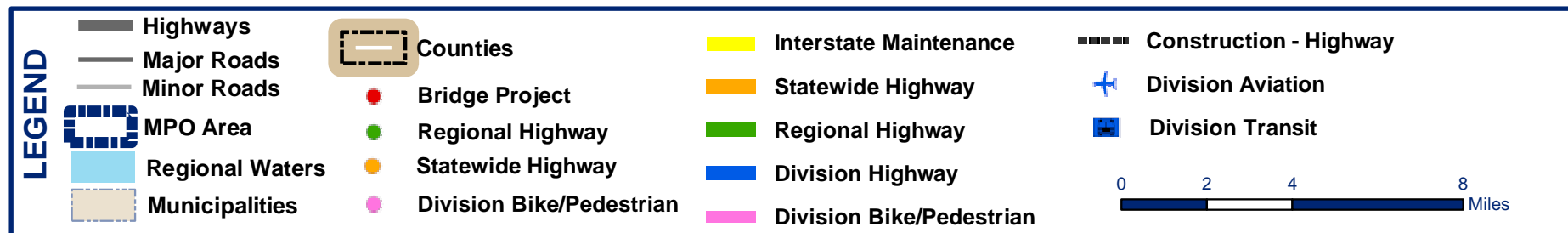
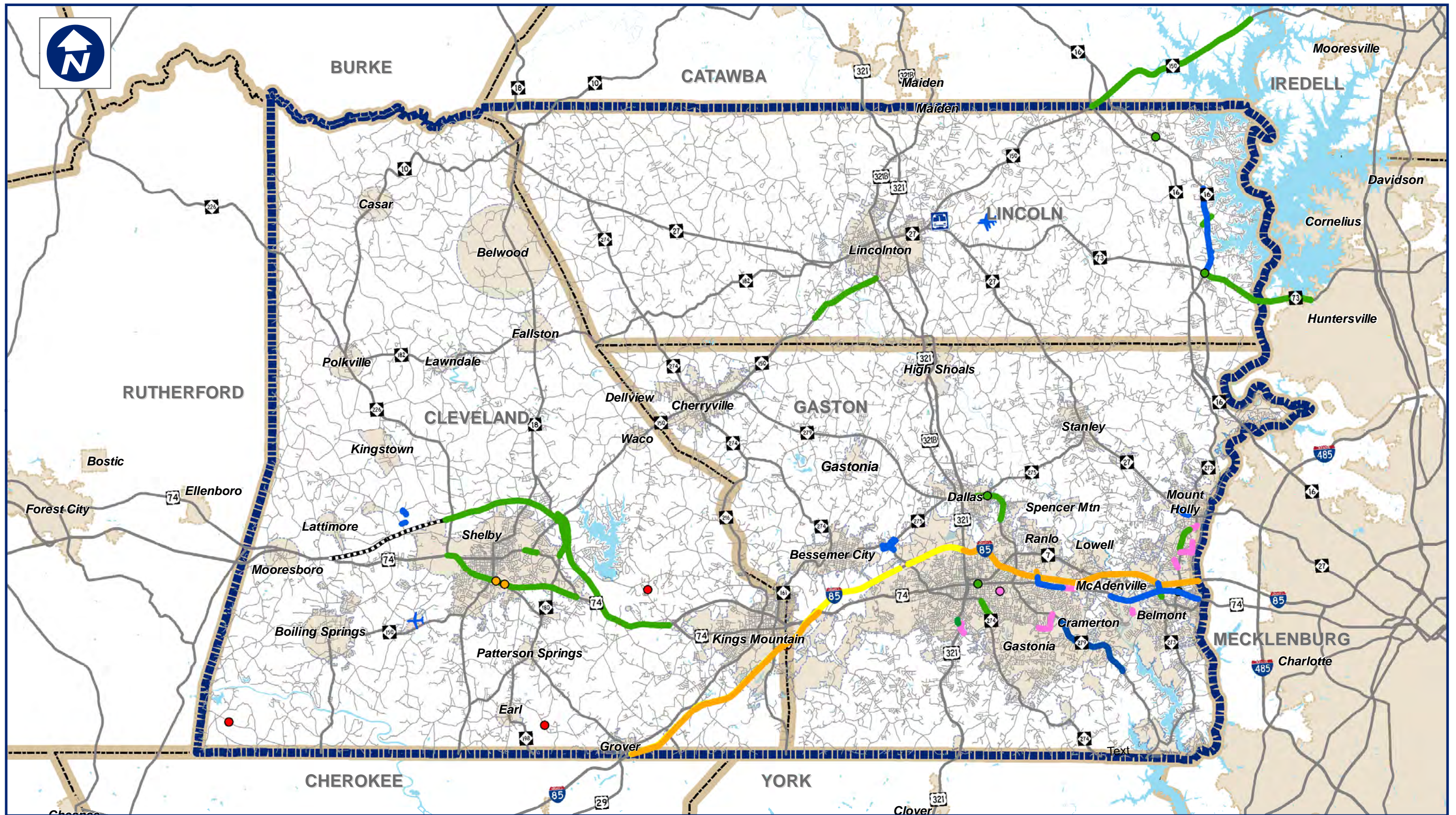


Figure: 11-3

GCLMPO TIP Projects

2045 METROPOLITAN TRANSPORTATION PLAN

Overview

In our automobile-centered society, people frequently consider only one modal option – the personal automobile. One of the best ways to reduce automobile trips is to make other modes of transportation a more viable and convenient option. Making the area transportation network truly multi-modal is a priority for the Gaston-Cleveland-Lincoln MPO.

Demographic Trends

According to WalkBikeNC (described later in this chapter), the proportion of North Carolina's population residing in urban areas is expected to reach over 75% by 2040. That's an increase of 50% from 1990 (50% to 75%). This trend is expected to occur in the GCLMPO area as well. This increased density in our urban areas offers opportunities for shorter trips to work, school, shopping and other destinations, many of which could be made by walking or bicycling rather than driving. In addition, our population is aging.

It is projected that by 2032, 20% of North Carolinians will be over 65. Older adults often begin to drive less. In fact, more than one in five Americans age 65 or older do not drive. And it's not just the older population who are driving less. Recent studies have shown that car ownership among Millennials (those born between 1981 and 2001) is declining as well. As a result, our communities need to be pedestrian and bicycle friendly in order to serve the needs of both the older and younger populations.

Benefits of Walking and Bicycling

Demographic trends in North Carolina (and across the nation) indicate a growing demand for walking and bicycling as alternate modes of transportation. In addition, there has been increasing recognition in recent years of the many benefits of walking and bicycling, including health, environmental, social equity, and economic benefits.





HEALTH BENEFITS

According to the NC Division of Public Health, an estimated 5 million North Carolina adults (65%) are either overweight or obese, and unfortunately, this statistic continues to be on the rise. Physical inactivity has certainly contributed to this and comes with a cost. Be Active North Carolina estimates the annual direct medical cost of physical inactivity in North Carolina at \$3.67 billion, plus an additional \$4.71 billion in lost productivity. Safe environments where walking and cycling can be incorporated in daily activity could help to alleviate this problem. The Centers for Disease Control and Prevention recommends 30 minutes of moderate exercise on most days for adults. That's the equivalent of about one and a half miles of walking or five miles of bicycling. The recommendation for children is 60 minutes a day. Physical activity is not only about maintaining a healthy weight. It can also be important in the prevention of cardiovascular disease, osteoporosis, arthritis and mental disorders like anxiety and depression. Active people are likely to be healthier and happier, and investing in bicycling and walking offers a way to reintegrate physical activity back into our daily routines. In addition to the traditional health benefits, roadway improvements to accommodate pedestrians and bicyclists also enhances the safety of the pedestrian and cyclist. According to the National Highway Traffic Safety Administration, in 2015, 5,376 pedestrians and 818 bicyclists were killed in crashes with motor vehicles. These two modes accounted for 17.7% of the total US fatalities that year. The GCLMPO strives to improve the safety of the transportation system for pedestrians and bicyclists.

ENVIRONMENTAL BENEFITS

Any type of non-motorized transportation reduces the demand for petroleum products and decreases the production of greenhouse gases. Even a modest increase in walking and bicycling trips (in place of motor vehicle trips) can have significant positive impacts. According to WalkBikeNC, replacing two miles of driving each day with walking or bicycling will, in one year, prevent 730 pounds of carbon dioxide from entering the atmosphere. In addition to encouraging non-motorized means of transportation, the establishment of greenways and trails can also have substantial environmental benefits by restoring natural corridors within densely populated areas. Green space created by these natural corridors helps to mitigate stormwater runoff and encourages water table recharge. It also serves as a natural filter, trapping pollutants from urban runoff in order to keep the region's water supplies healthy. Tree cover provided by greenways and trails contributes to air quality by removing substantial amounts of particulate matter and carbon dioxide from the atmosphere.



SOCIAL EQUITY AND ECONOMIC BENEFITS

Given that bicycle and pedestrian facilities are essentially free to utilize, the increased presence of these facilities allow households where there is no access to a personal vehicle an alternate mode of transportation. According to the Federal Highway Administration, transportation is second to housing as a percentage of household budgets, and it is the top expense for many low-income families. Households in auto-dependent locations spend 25% of income on transportation costs. According to the Automobile Association of America, the average sedan owner spends \$10,000 per year on car ownership. This cost includes maintenance, fuel, tires, insurance and depreciation. Many people cannot afford to own a car and are dependent on walking and biking for transportation. Even those who do own a car could save vehicle-related expenses by walking or biking for the estimated 40% of trips that are within two miles of home. Analysis by the Sierra Club shows that if American drivers were to make just one four-mile round trip each week with a bicycle instead of a car, they would save nearly 2 billion gallons of gas. At \$4 per gallon, total savings would be \$7.3 billion per year. In addition, for households that are dependent on alternate modes such as public transportation, there can be times where transit schedules are not conducive to an individual's schedule. Convenient bicycling and walking access provides significant flexibility.

Facilities for bicyclists and pedestrians generate economic returns through improved health, safety, and environmental conditions, often raise property values, and attract visitors.

Statewide

In North Carolina, just 2.4% of commuters bicycle or walk to work, compared to 3.36% nationwide. In May of 2013, NCDOT adopted WalkBikeNC, the first statewide master plan to define a vision, goals and strategies for improving walking and bicycling in North Carolina. WalkBikeNC was completed over a twelve month period during which NCDOT and its consultants hosted 15 focus group meetings and three regional workshops and attended 16 festivals and events. The plan recognizes that biking and walking are not often safe, convenient, or efficient and that infrastructure is underfunded and incomplete. Currently, only 0.2% of NCDOT transportation independent project funding goes towards pedestrian and bicycle infrastructure, although the total percentage is higher due to facilities installed as a part of overall corridor improvement projects. WalkBikeNC serves as a policy guide for state agencies, local governments and private sector interests to develop a transportation system that safely and efficiently accommodates walking and bicycling.

There are five main pillars of the plan, along with 2020 goals for each of the pillars:

- Improving mobility by doubling state pedestrian and bicycle mode share.
- Promoting safety and reducing per capita pedestrian and bicycle crash rates by 10%.
- Contributing to improved public health and reducing inactivity rates by 10%.
- Maximizing economic competitiveness by increasing investment in pedestrian and bicycle projects and programs by 25%.
- Being good stewards of the environment by increasing mileage of greenways by 10% and reducing automobile dependence.



Regional

CONNECT OUR FUTURE

In 2005-2008, the 14-county bi-state region came together and developed a vision for the region's future, called CONNECT. That vision has been adopted by local governments representing more than 70 percent of the population within the region. Its six core values are:

- A strong, diverse economy
- Sustainable, well-managed growth
- A safe and healthy environment
- High quality educational opportunities
- Increased collaboration among jurisdictions
- Enhanced social equity and overcoming upward mobility challenges

Table 12-1. Percent of Workers Who Biked or Walked to Work (ACS 2012-2016 5-year)

	US	NC	CLEVELAND	GASTON	LINCOLN
Percent of Workers Who Biked or Walked to Work (ACS 2012-2016 5-year)	4.6%	3.1%	2.5%	1.7%	1.6%

Table 12-2. Percent of Households Without Access to a Vehicle (ACS 2012-2016 5-year)

	CLEVELAND	GASTON	LINCOLN
Percent of Households Without Access to a Vehicle (ACS 2012-2016 5-year)	7.1%	6.4%	3.2%

Table 12-1 shows the percentage of workers who biked or walked to work based on the American Community Survey data from 2012 – 2016.

Table 12-2 shows the percentage of households without access to a vehicle based on the American Community Survey data from 2012 – 2016.

Building upon this vision, in 2011 the Centralina and Catawba Regional Councils of Governments successfully applied for a Housing and Urban Development (HUD) sustainability grant to help implement these core values. “CONNECT Our Future” is a process in which communities, counties, businesses, educators, non-profits and other organizations work together to create a regional growth framework. This framework will be developed through extensive community engagement and built on what communities identify as existing conditions, future plans and needs, and potential strategies.

As a part of this process, a series of Open Houses and small group meetings were held throughout the region between November 2012 and February 2013. Eighteen of these meeting were held in the GCLMPO Metropolitan Planning Area. Attendees answered a series of questions to identify qualities and characteristics valued by the

communities. Support for walking, biking and greenways was strong among respondents as can be seen in **Table 12-3**. In all three counties, parks and greenways topped the list of “features that you feel are most important for the future of your community and our region.” Support for walking and biking was also evident in the response to “what is the one transportation feature that is most important to you?”



Table 12-3. Public Meeting Support for Bicycle and Pedestrian Infrastructure

	MORE SIDEWALKS, TRAILS, OTHER SAFE PLACES TO WALK	MORE BIKE LANES, PATHS, OTHER SAFE PLACES TO BIKE
Cleveland	24%	10%
Gaston	26%	9%
Lincoln	26%	7%

Table 12-4. Carolina Thread Trail

Cleveland	Kings Mountain Gateway Trail (5.0 miles)
	Ridgeline Trail - Crowders Mtn. State Park (4.3 miles)
	First Broad River Trail (2.2 miles)
	River Trail (2.2 miles)
	Cottonwood Trail (1.8 miles)
Gaston	Highland Rail Trail (1.5 miles)
	Avon/Catawba Creek Greenway (1.9 miles)
	Riverside Greenway (1.0 mile)
	South Fork Trail (2.0 miles)
	Stuart Cramer High School Trail (0.9 miles)
	Crowders Mtn. State Park Trails (6.2 miles)
	Seven Oaks Preserve Trail (2.8 miles)
	Goat Island Greenway (0.7 miles)
	Mount Holly Linear Park Trail (0.3 miles)
	Mountain Island Park Trail (0.6 miles)
Lincoln	Bessemer City Park Trail (1.3 miles)
	Catawba Riverfront Greenway (0.2 miles)
	Marcia H. Cloninger Rail Trail with sidewalk connections (1.6 miles)
	Ramsour's Mill Trail (0.3 miles)
	Carolinas Medical Center-Lincoln Trail (0.6 miles)
	South Fork Rail Trail (2.0 miles)
	Forney Creek Trail (2.4 miles)
	Rock Springs Nature Preserve Trail (0.5 mile)

CAROLINA THREAD TRAIL

The Carolina Thread Trail is a developing 15-county regional network of greenways, trails and blueways that will reach approximately 2.3 million citizens. The Thread Trail serves as a catalytic organization to create non-motorized options by developing an interconnected greenway and trail system. Currently, in working with community partners, over 260 miles of greenways, trails, and sidewalk connections are open for public access. The Thread Trail provides funding, technical assistance, and marketing to promote the development of the trail system. Gaston, Cleveland, and Lincoln counties all have adopted Carolina Thread Trail Master Plans with segments currently on the ground and being enjoyed by residents and visitors alike. **Table 12-4** shows the currently completed segments, including segment mileage, for the Carolina Thread Trail, and **Figure 12-1**, at the end of the chapter, shows the locations of these segments.

LAKE NORMAN BICYCLE ROUTE

The Lake Norman Bicycle Route (LNBR) is the first regional bicycle plan approved by the NCDOT. The planning process for the LNBR brought together the four counties surrounding Lake Norman (including Lincoln County), as well as a number of their municipalities. The route chosen to circumnavigate Lake Norman was split into the Initial and Ultimate routes. The Initial route is primarily comprised of segments that are already appropriate for bicyclists, or will be with limited improvements. The Ultimate route includes future segments of the Carolina Thread Trail and improved roads, such as NC 73 and NC 150, that together create the ideal route around the Lake. A Lake Norman Regional Bicycle Route Task Force was created to provide a forum to coordinate efforts on the route.

The LNBR does not include Lincoln County in its initial route, but it included 26.7 miles of both on-road and off-road facilities in its Ultimate Alignment. A direct ride from the northern to southern end of Lincoln County is 13 miles long. This direct route includes segments along Slanting Bridge Road from Catawba County, Campground Road, Old NC 16, Hagers Ferry Road, Club Drive and NC 73 into Mecklenburg County.

Local

EXISTING LOCAL PLANS

A number of communities within the region have adopted or are in the process of creating bicycle, pedestrian and/or greenway plans. There are many benefits to adopting such plans, including:

- Acting as a clear blueprint for revising local ordinances and supporting policies that guide development in accordance with goals.
- Laying out a comprehensive and prioritized guide for building or improving local routes and amenities.
- Providing a firm basis for seeking financial assistance in the form of grants and other support from various outside sources in order to implement the plan.
- Serving as an educational tool for conveying the values and methods of creating and maintaining a pedestrian-friendly community with decision makers and general public.

Table 12-5 shows the bicycle and pedestrian plans of jurisdictions within the GCLMPO planning area.

Table 12-5. MPO Bicycle and Pedestrian Plans

COMMUNITY	TYPE	STATUS
Belmont	Pedestrian	Adopted 2009
Belmont	Bicycle	Adopted 2013
Bessemer City	Pedestrian	Adopted 2010
Boiling Springs	Pedestrian	Adopted 2006
Cherryville	Pedestrian	Adopted 2009
Cleveland County	Carolina Thread Trail	Adopted 2010
Cramerton	Pedestrian	Adopted 2008
Cramerton	Bicycle	Underway
Gaston County	Carolina Thread Trail	Amended 2011
Gastonia	Pedestrian	Adopted 2014
Kings Mountain	Bicycle	Adopted 2011
Kings Mountain	Pedestrian	Adopted 2014
Lincoln County	Greenway Master Plan	Adopted 2009
Lincoln County	Carolina Thread Trail	Amended 2011
McAdenville	Sidewalk Evaluation Plan	Adopted 2014
Mount Holly	Pedestrian	Adopted 2013
Mount Holly	Bicycle	Underway
Shelby	Pedestrian	Adopted 2007



PEDESTRIAN FACILITIES

Sidewalks are necessary to provide a safe environment for integrating walking into daily routines. A number of communities in the GCLMPO area have implemented sidewalk policies related to new development. For more detailed information, please see the individual town/city ordinances.

Table 12-6 shows the residential subdivision requirements for jurisdictions in the GCLMPO planning area.

BICYCLE FACILITIES

In addition to the GCLMPO's growing list of greenways and trails, a number of communities are starting to implement more on-street bicycle facilities, including conventional bicycle lanes, protected bike lanes, buffered bike lanes, sidepaths, and shared lane markings. On-street bicycle facilities can be built with new roadway construction, or retrofitting existing roadways by adding bicycle facilities without changing the curb-to-curb width.



Table 12-6. Residential Subdivision Requirements

AGENCY	SUBDIVISION REQUIREMENTS	NOTES
Gaston County	Sidewalks are required for subdivisions and developments located in the USO (Urban Standards Overlay District) as well as in Traditional Neighborhood Developments and Planned Residential Developments.	
Belmont	Sidewalks are required on both sides of all streets, except alleys and lanes.	Also requires that bike lanes be installed by all development (except single-family homes) along designated streets.
Bessemer City	Sidewalks are required for subdivisions and developments located in the USO (Urban Standards Overlay District) as well as in Traditional Neighborhood Developments and Planned Residential Developments and PUDs. Sidewalks are also required for all multi-family developments. Sidewalks are required for some multi-tenate projects as well, but can be site specific.	
Cherryville	"Sidewalks shall be constructed on such streets that the City Council considers sidewalks to be necessary in order to promote the free flow of vehicular traffic and to provide safety to the pedestrian"	
Cramerton	Generally required along both sides of the street	
Dallas	"Sidewalks shall be placed on both sides of major and minor thoroughfares. On streets other than thoroughfares, the construction of sidewalks on both sides of the street is encouraged, however at a minimum sidewalks are required along one side of internal streets."	
Gastonia	Generally required along both sides of the street	
High Shoals	Required on one side of the street	
Mt. Holly	In subdivisions, the City requires the construction of 5' sidewalks on both sides of the street. 8' wide sidewalks are also required for developments along the frontage of major thoroughfares and 5' wide along the frontage of minor thoroughfares.	The City requires new commercial construction projects, located along a portion of adopted greenway, to build that section of greenway on their property.
Stanley	The ordinance allows the Planning Board or Town Board to determine the necessity of building sidewalks in subdivisions. They may be required on either or both sides of the street "in order to promote the free flow of vehicular traffic and to provide safety to pedestrians".	
Lincoln County	Sidewalks are required on one side of all streets in residential subdivisions with the exception of some developments where lots are greater than one acre and where a residential street serves 10 or fewer dwelling units.	
Lincolnton	Construction of sidewalks and planting strips are required along public street frontages in conjunction with new development. Sidewalks shall be constructed to a minimum width of five feet and planting strips shall be six feet in width. Sidewalks are required on both sides of the street in all major subdivisions.	
Cleveland County	In all unsubdivided residential multifamily developments, sidewalks shall be provided and shall be at least 4 ft. wide.	
Boiling Springs	The Town requires sidewalks to be constructed along both sides of the street in new residential subdivisions. In addition, all new and renovated non-residential and high-density residential development requires sidewalks along all public ROW frontages.	
Kings Mountain	The City generally requires sidewalks along one side of the street in new residential subdivisions.	
Shelby	For all developments except single family on individual lots (such as infill development), construction of sidewalks and planting strips shall be required along public street frontages in conjunction with new development. Such sidewalk shall be constructed to a minimum width of 5 ft. Planting strips shall be 6 ft.	

Goals and Objectives

GOALS

The GCLMPO has set goals, objectives, and policies relating to various responsibilities charged to the organization. Relating to bicycle and pedestrian transportation, one goal of the GCLMPO is to provide a transportation system that affords the public with mobility choices including walking, bicycling, aviation, freight, and transit options.

OBJECTIVES

Develop a transportation system that integrates pedestrian and bicycle modes of transportation with motor vehicle transportation and encourages the use of walking and bicycling as alternative modes.

- Increase the design sensitivity of specific transportation projects to the needs of pedestrians and bicyclists.
- Assist the development of pedestrian and bikeway systems for both recreation and transportation purposes.
- 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.
- Advocate for linkages for pedestrians and/or bicyclists between neighborhoods, employment centers, services, cultural facilities, schools, parks, businesses, and other important destinations.

- Incorporate appropriate sidewalk, crosswalk, signalization and greenway/trail facilities, and support Safe Routes to School-based strategies including Evaluation and Planning, that accommodate active transportation to and from schools; particularly when considering new school construction and when developing projects within 1-mile of existing schools.
- Improve bicycle and pedestrian access to transit.

Table 12-7 shows the number of pedestrian crashes in 2005, 2010, and 2015 and the percent change for 2005 to 2015.

Table 12-7. Pedestrian Crashes

COUNTY	2005	2010	2015	% CHANGE (2005-2015)
Cleveland	23	24	29	26.1%
Gaston	66	60	63	4.5%
Lincoln	7	7	13	85.7%

Table 12-8 shows the number of bicycle crashes in 2005, 2010, and 2015 and the percent change for 2005 to 2015.

Table 12-8. Bicycle Crashes

COUNTY	2005	2010	2015	% CHANGE (2005-2015)
Cleveland	11	5	8	27.3%
Gaston	22	13	16	27.3%
Lincoln	1	3	7	600.0%

Table 12-9 provides the 2045 MTP bicycle and pedestrian project list, and **Figure 12-2** shows the locations of the MTP bicycle and pedestrian projects.

Table 12-9. Bicycle and Pedestrian Projects

BP ID	Submitting Agency	Mode	Facility Type	On Street	Side	From/Cross Street	To Street	In Adopted Plan?	2018 Cost	2025 Cost	2034 Cost	2035 Cost	2045 Cost
2025 Horizon Year													
C-5505	Belmont	Multiuse	Greenway	Belmont Rail Trail	NA	Woodlawn Ave	Downtown Belmont	Yes	\$1,330,000	NA		NA	NA
C-5508	Dallas	Pedestrian	Sidewalk	Dallas High Shoals Rd	NA	Dallas Cherryville Hwy; Park Rd	Park Rd; Sam Rhyme Ct	No	\$237,000	NA		NA	NA
C-5532	Lincolnton	Pedestrian	Pedestrian Intersection Improvements	General Blvd/Main St	Both	NA	NA	No	\$570,000	NA		NA	NA
C-5562	Gastonia	Multiuse	Sidewalk and Bicycle Facilities	Chestnut St; Second Ave	Both	Lineberger Park; Chestnut St	Second Ave; Marietta St	Yes	\$948,000	NA		NA	NA
C-5606A	Mount Holly	Pedestrian	Sidewalk	Belmont-Mt Holly Rd		Belmont Abbey College	Margarette Ave	Ped	\$395,382	NA		NA	NA
C-5606B	Bessemer City	Pedestrian	Sidewalk and Crosswalks	NC 161, PH I	South	Downtown Bessemer City	Bessemer City Park	Ped	\$200,000	NA		NA	NA
C-5606D	Dallas	Pedestrian	Sidewalk	NC 279/275		Gaston College	Dallas Park and Gaston College	Yes	\$245,675	NA		NA	NA
C-5606E	Gaston County	Multiuse	Greenway	Long Creek Greenway (Phase I)	NA	Gaston Tech. Pkwy	Gaston County Park	No	\$371,280			NA	NA
C-5606J	Gaston County	Pedestrian	Sidewalk	Main St/Lowell Spencer Mountain Rd; Tower Rd	One	Lowell City Limit; Main St/Lowell Spencer Mountain Rd	Tower Rd; Poston Park Parking Lot	No	\$417,974	NA		NA	NA
C-5606K	Gaston County	Multiuse	Greenway	Long Creek Greenway (Phase II)	NA	Gaston Tech. Pkwy	Rankin Lake Park	No	\$946,847	NA		NA	NA
C-5606L	Bessemer City	Pedestrian	Sidewalk	NC 161, PH II	South	S 14th St	W Boston Ave	Yes	\$462,309	NA		NA	NA
C-5622	Gastonia	Multiuse	Greenway	Highland Branch Greenway PH II	NA	Rankin Lake Park	Bulb Ave	Ped	\$400,000	NA		NA	NA
C-5623	Cramerton	Pedestrian	Sidewalk	Cramer Mountain Rd	One	Baltimore Dr	S New Hope Rd	Ped	\$477,000	NA		NA	NA
EB-5114	Mount Holly	Multiuse	Greenway	Mount Holly Riverfront Greenway	NA	Tuckaseege Park	Catawba Ave	Ped	\$800,000	NA		NA	NA
EB-5531	Bessemer City	Pedestrian	Sidewalk	12th St; Yellow Jacket Ln/ Bess Town Rd	One	Chadwick Ct; 12th St	M L Kiser Rd; 14th St	Ped	\$300,000	NA		NA	NA
EB-5534	Gastonia	Multiuse	Greenway	Catawba Creek Greenway Extension	NA	Ferguson Park	Marietta St	Ped	\$410,000	NA		NA	NA
EB-5535	Cramerton	Multiuse	Greenway	Lakewood Park Trail	NA	Lakewood Park	US 29/US 74	Ped	\$836,000	NA		NA	NA
EB-5701	Gastonia	Pedestrian	Sidewalk	Franklin Blvd	North	Cox Rd	City Limits	Ped	\$1,210,000	NA		NA	NA
EB-5713	Cramerton	Pedestrian	Pedestrian Intersection Improvements	Lakewood Rd; Market St; Market St	NA	Wilkinson Blvd; Wilkinson Blvd; Eighth Ave	NA	Ped	\$160,000	NA		NA	NA
EB-5745	Gastonia	Multiuse	Sidewalk	Hudson Blvd; Redbud Dr	One	Armstrong Park Rd; Hudson Blvd	Redbud Dr; BiLo Shopping Center	Ped	\$1,399,000	NA		NA	NA
EB-5746	Mount Holly	Pedestrian	Sidewalk	NC 273 (S Main St)	Both	Tuckaseege Rd	Rose St		\$610,000	NA		NA	NA
EB-5748	Mount Holly	Pedestrian	Sidewalk	Beaty Rd	NA	Smith St	Ferstl Ave	Ped	\$380,000	NA		NA	NA
EB-5768	Gastonia	Pedestrian	Sidewalk	Marietta St/Hilltop Dr; Gardner Dr	Varies	Dixon Cir	W Hudson Blvd	Ped	\$663,000	NA		NA	NA
EB-5791	Mount Holly	Pedestrian	Sidewalk	NC 273	Both	Summit Ave	Tuckaseege Rd	Ped	\$429,000	NA		NA	NA

NOTE: Projects committed in the 2018-2027 STIP are shown in bold. Committed CMAQ projects are shown in bold italics.

Table 12-9. Bicycle and Pedestrian Projects (Continued)

BP ID	Submitting Agency	Mode	Facility Type	On Street	Side	From/Cross Street	To Street	In Adopted Plan?	2018 Cost	2025 Cost	2034 Cost	2035 Cost	2045 Cost
2025 Horizon Year (Continued)													
EB-5912	Mount Holly	Pedestrian	Sidewalk	Tuckaseegee Rd	South	NC 273	Marina Village Dr	Ped	\$1,001,000	NA		NA	NA
EB-5913	Cramerton	Pedestrian	Sidewalk	Lakewood Rd	NA	Eagle Rd	Lake Dr (entry to HS)	Ped	\$518,000	NA		NA	NA
EB-5914	Mount Holly	Pedestrian	Sidewalk	Tuckaseegee Rd	West	Broome St - Tuckaseegee Park	Marina Village Dr	Ped	\$1,350,000	NA		NA	NA
BP46	Gastonia	Pedestrian	Sidewalk	New Hope Road	One	Franklin Blvd	Ozark Ave	Ped	NA	\$460,789	\$550,686	\$561,699	\$684,708
BP62	Gastonia	Multiuse	Sidewalk, Bike Facilities, and Pedestrian Intersections Improvements	Broad St	Both	Long Ave	Fourth Ave	Ped	NA	\$692,117	\$827,144	\$843,687	\$1,028,449
BP65	Gastonia	Multiuse	Sidewalk and Bike Facilities	Second Ave	Both	Chestnut St	S Belvedere Ave	Ped	NA	\$220,402	\$263,401	\$268,669	\$327,506
	Belmont	Pedestrian	High-vis crosswalks, utility relocations, pedheads, stormwater mitigation	S Main St	Intersection	S Main St	N Central Ave	CTP	NA	\$58,429	\$69,828	\$71,225	\$86,822
	Belmont	Pedestrian	High-vis crosswalk, median islands, pedheads	NC 273	Intersection	Park St (NC 273)	E Catawba St	CTP	NA	\$71,102	\$84,973	\$86,673	\$105,654
BP48	Gastonia	Pedestrian	Sidewalk	Walnut Av	North	Airline Av	Vance St	Ped	NA	\$275,706	\$329,494	\$336,084	\$409,684
BP47	Gastonia	Pedestrian	Sidewalk	Cox Rd	Both	Medical Center Pharmacy	Court Dr	Ped	NA	\$336,315	\$401,928	\$409,966	\$499,747
BP54	Gastonia	Multiuse	Sidewalk and Bike Facilities	Second Ave	Both	Marietta St	Linwood	Ped	NA	\$491,201	\$587,031	\$598,771	\$729,899
BP10	Boiling Springs	Pedestrian	Sidewalk	S Main St	One	E Branch Ave	Flint Hill Church	Ped	NA	\$241,905	\$289,099	\$294,881	\$359,458
2035 Horizon Year													
BP63	Gastonia	Pedestrian	Sidewalk and Pedestrian Intersection Improvements	Union Rd		Hudson Blvd	Robinson Elementary	Ped	NA	\$694,659	\$830,182	\$846,786	\$1,032,227
	Gastonia	Pedestrian	Sidewalk	Linwood Rd	One/E	East Dr	Iva Ave	Portion in CTP	NA	\$574,880	\$687,035	\$700,776	\$854,241
BP38	Gastonia	Pedestrian	Sidewalk	Henderson St; McArver St; Mountain View St	One	McArver St; Mountain View St; McArver St	Gail Ave; Henderson St; S York Rd	Ped	NA	\$441,429	\$527,549	\$538,100	\$655,941
BP55	Gastonia	Pedestrian	Sidewalk and Pedestrian Intersection Improvements	S New Hope Rd	One	Armstrong Park Rd	Hudson Blvd	Ped	NA	\$555,709	\$664,124	\$677,407	\$825,755
	Gastonia	Pedestrian	Sidewalk	Churchill Dr; Laurel Ln; Timberlane St; Holly Dr	One	Garrison Blvd; Timberlane St; Holly Dr; Catawba Creek Greenway	Laurel Ln; Churchill Dr; Laurel Ln; Timberlane St	Ped	\$825,979	\$948,790	\$1,133,892	\$1,156,570	\$1,409,852
BP45	Gastonia	Pedestrian	Sidewalk	Athenian Dr; Hillcrest; Adams; Elm St; Linwood Rd	One	Hillcrest Ave; Miller St; Spencer Ave; W Tenth Ave; East Dr	Garrison Blvd; Athenian Dr; Miller St; Adams Dr; Cloninger Ave	Ped	NA	\$1,080,768	\$1,291,618	\$1,317,450	\$1,605,964
BP87	Mount Holly	Pedestrian	Sidewalk	S Main St	Both	Tuckaseegee Rd	Rose St	Ped	NA	\$819,130	\$978,937	\$998,515	\$1,217,185
BP52	Gastonia	Multiuse	Greenway, sidewalk, and bike facilities	Catawba Creek Greenway - Downtown Extension	NA	Marietta St	Linwood	Ped	NA	\$2,772,338	\$3,313,201	\$3,379,465	\$4,119,549
BP79	Mount Holly	Pedestrian	Sidewalk	NC 273	Both	S Main St	City Limits	Ped	NA	\$1,239,561	\$1,481,390	\$1,511,018	\$1,841,923

NOTE: Projects committed in the 2018-2027 STIP are shown in bold. Committed CMAQ projects are shown in bold italics.

Table 12-9. Bicycle and Pedestrian Projects (Continued)

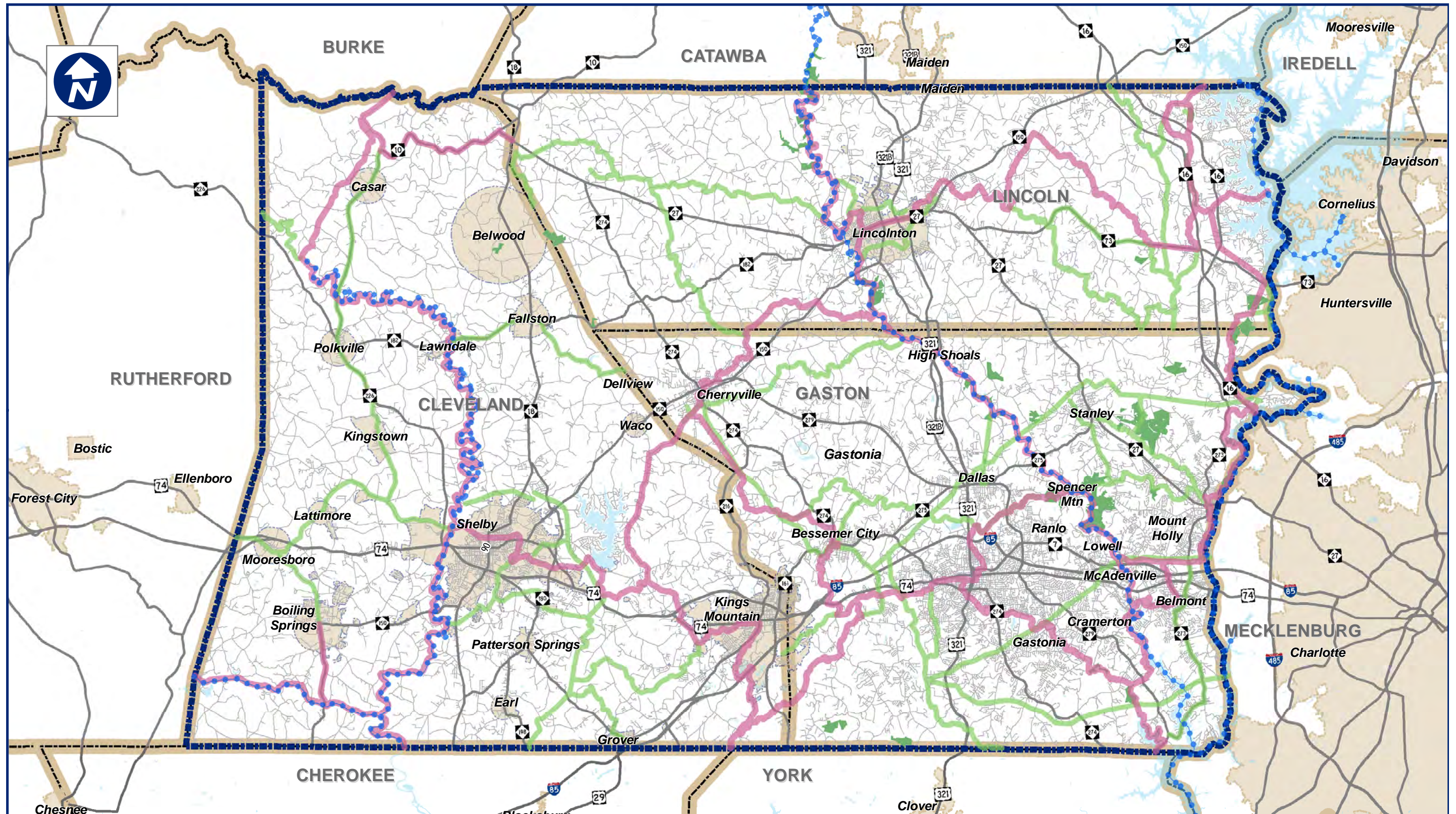
BP ID	Submitting Agency	Mode	Facility Type	On Street	Side	From/Cross Street	To Street	In Adopted Plan?	2018 Cost	2025 Cost	2034 Cost	2035 Cost	2045 Cost
2035 Horizon Year (Continued)													
BP66	Gastonia	Pedestrian	Sidewalk	Gardner Park Dr; Pamela St	One	Downey Pl; Gardner Park Dr	Pamela St; Redbud Dr	Ped	NA	\$478,648	\$572,028	\$583,469	\$711,245
BP82	Mount Holly	Pedestrian	Sidewalk	Catawba Ave	One	Hawthorne St	Rankin Ave	Ped	NA	\$392,612	\$469,207	\$478,592	\$583,400
BP75	Kings Mountain	Pedestrian	Sidewalk	Gold St	S	Gaston St	York Rd	Ped	NA	\$285,100	\$340,721	\$347,535	\$423,643
BP44	Gastonia	Pedestrian	Sidewalk	Hudson Blvd	All of North side; South side from Windsor Woods to Union Rd	York Rd (US321)	Union Rd	Ped	NA	\$724,700	\$866,083	\$883,405	\$1,076,866
BP9	Boiling Springs	Pedestrian	Sidewalk	E College Ave	One	117 East College Ave	Hillcrest St	Ped	NA	\$290,286	\$346,919	\$353,857	\$431,350
BP7	Bessemer City	Pedestrian	Sidewalk and Crosswalks	Alabama Ave	Both	12th St	8th St	Ped	NA	\$356,084	\$425,553	\$434,064	\$529,122
BP78	Lowell	Pedestrian	Sidewalk	Church St	W	Lynn St	Movies Driveway	No	NA	\$524,477	\$626,798	\$639,334	\$779,345
BP53	Gastonia	Multiuse	Greenway and sidewalk	Southwest/Phillips Center Greenway; Lyon St		Phillips Center Parking Lot; Southside Ave	Lyon St; Hudson Blvd	Ped	NA	\$724,506	\$865,851	\$883,168	\$1,076,577
BP86	Mount Holly	Pedestrian	Sidewalk	Noles Dr	One	Hoover St	Hawthorne St	Ped	NA	\$1,004,309	\$1,200,242	\$1,224,247	\$1,492,350
2045 Horizon Year													
BP85	Mount Holly	Pedestrian	Sidewalk	NC 27	One	Hoover St	Main St	Ped	NA	\$1,596,371	\$1,907,811	\$1,945,967	\$2,372,123
BP2	Belmont	Bicycle	Bicycle Lanes	NC 273	Both	S Main St	South City Limits	Bike	NA	\$1,548,192	\$1,850,232	\$1,887,237	\$2,300,531
BP1	Belmont	Multiuse	Sidepath	Wilkinson Blvd	Both	Entire City	Entire City	Ped and Bike	NA	\$2,687,833	\$3,212,209	\$3,276,453	\$3,993,978
BP6	Bessemer City	Pedestrian	Sidewalk	Virginia Ave	S	12th St	8th St	Ped	NA	\$471,715	\$563,743	\$575,018	\$700,943
BP36	Gaston County	Pedestrian	Sidewalk	Neal Hawkins Rd	W	Hawks Ridge Dr	Martha Rivers Park	No	NA	\$1,099,324	\$1,313,793	\$1,340,069	\$1,633,537
BP84	Mount Holly	Pedestrian	Sidewalk	N Main St	W	Sandy Ford Rd	Lanier Ave	Ped	NA	\$2,159,203	\$2,580,448	\$2,632,057	\$3,208,462
BP57	Gastonia	Multiuse	Sidewalk and Greenway	Hargrove Ave; Oakwood St; new greenway		Trexlar Ave; Hargrove Ave; Oakwood St	Oakwood St; Hillwood Dr; Ransom St	Ped	NA	\$590,329	\$705,497	\$719,607	\$877,197
Unfunded													
BP88	Mount Holly	Pedestrian	Sidewalk	Tuckaseege Rd	Both	S Main St	S Main St	Ped	NA	\$2,866,977	\$3,426,303	\$3,494,829	\$4,260,177
BP51	Gastonia	Multiuse	Greenway, Sidewalk, and Pedestrian Intersection Improvements	T Jeffers Greenway; Trakas Blvd; Franklin Blvd		Hartman St; T Jeffers Greenway; Trakas Blvd	Crescent Ln; Franklin Blvd; Walmart	Ped	NA	\$1,803,719	\$2,155,612	\$2,198,724	\$2,680,232
BP32	Dallas	Pedestrian	Sidewalk	Dallas-Cherryville Hwy	N	existing sidewalk near Dallas High Shoals Hwy	Eden Glen Dr	No	NA	\$489,454	\$584,943	\$596,642	\$727,303
BP30	Cramerton	Multiuse	Sidepath	Mayflower Ave	W	end of sidewalk s of 10th Ave	Cramer Mountain Rd	No	NA	\$389,655	\$465,674	\$474,987	\$579,007

NOTE: Projects committed in the 2018-2027 STIP are shown in bold. Committed CMAQ projects are shown in bold italics.

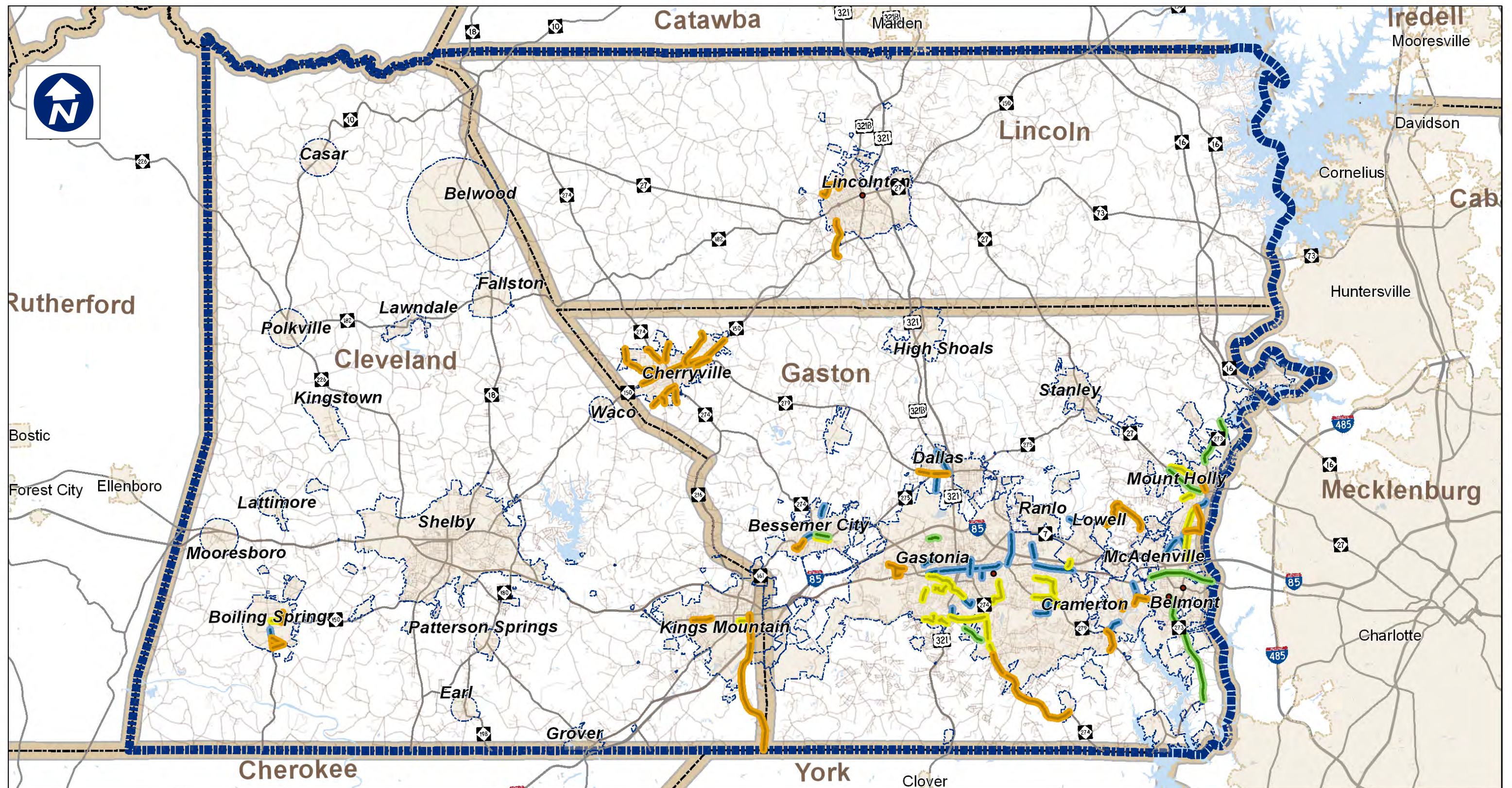
Table 12-9. Bicycle and Pedestrian Projects (Continued)

BP ID	Submitting Agency	Mode	Facility Type	On Street	Side	From/Cross Street	To Street	In Adopted Plan?	2018 Cost	2025 Cost	2034 Cost	2035 Cost	2045 Cost
Unfunded (Continued)													
BP34	Gaston County	Multiuse	Sidewalk and Bike Lanes	Union Rd	N	Robinson Rd	Forest Pointe Ln	No	NA	\$7,122,757	\$8,512,354	\$8,682,601	\$10,584,042
BP19	Cherryville	Pedestrian	Sidewalk	Rudisill Ave	E	NC 150	Spinners St	Ped	NA	\$432,741	\$517,166	\$527,509	\$643,030
	Kings Mountain	Bicycle	Bicycle Lanes/Paved Shoulders	York Rd (Hwy 161)	Both	Cleveland Ave	South Carolina State Line	CTP	NA	\$1,789,015	\$2,138,039	\$2,180,799	\$2,658,382
BP11	Boiling Springs	Pedestrian	Sidewalk	S Main St	One	Flint Hill Church	Patrick Ave	Ped	NA	\$268,783	\$321,221	\$327,645	\$399,398
BP73	Kings Mountain	Pedestrian	Sidewalk	York Rd	W	King St	Holiday Inn Dr	Ped	NA	\$846,667	\$1,011,846	\$1,032,083	\$1,258,103
BP74	Kings Mountain	Pedestrian	Sidewalk	York Rd	E	King St	Broadview Dr	Ped	NA	\$846,667	\$1,011,846	\$1,032,083	\$1,258,103

NOTE: Projects committed in the 2018-2027 STIP are shown in bold. Committed CMAQ projects are shown in bold italics.



LEGEND Highways Major Roads MPO Area Municipalities Counties Regional Waters	Carolina Thread Trail Adopted Connections Other Connection Opportunities Blueways Catawba Land Conservancy Protected Properties	 Metropolitan Planning Organization Date created: 1/9/18	Figure: 12-1 Carolina Thread Trail Map 2045 METROPOLITAN TRANSPORTATION PLAN
	0 2 4 8 Miles	12-136	



LEGEND

Highways

Major Roads

MPO Area

Municipalities

Counties

Regional Waters

Minor Roads

Horizon Year

2018 - 2025

2026 - 2035

2036 - 2045

Unfunded

0 2 4 8 Miles

GASTON-CLEVELAND-LINCOLN

MPO

Metropolitan Planning Organization

Date created: 1/8/18

Figure: 12-2

GCLMPO

MTP Bicycle and Pedestrian Projects by Horizon Year

2045 METROPOLITAN TRANSPORTATION PLAN

Public Transportation



The Gaston-Cleveland-Lincoln MPO area is served by a variety of public transit systems. These services range from demand response “dial-a-ride” service to van pools, fixed-route scheduled service, inter-city rail service, and inter-city bus service.

Carpooling and Vanpooling

Vanpools are a flexible, comfortable, cost-effective way for groups of 5 to 15 commuters to share their ride to work. A vanpool consists of a group of people who live and work near each other and share similar commuting schedules. Each service tailors its schedule around the group’s needs, with all members deciding on the pick-up and drop-off locations and times. The Charlotte Area Transit System (CATS) currently operates a vanpool program to assist groups of workers to reduce commuting costs and congestion by sharing a vehicle to their destination somewhere in Mecklenburg County. As of December 2017 there are seven vanpools originating from the GCLMPO area and terminating in Mecklenburg

County. Six of these vanpools originate in Lincoln County and one in Gaston County.

Demand Response Service

Each of the three Gaston-Cleveland-Lincoln MPO counties has its own Community Transportation System. These systems typically serve a transit-dependent population, especially for their medical-related trips. However, these services are open to the public and do carry “general population” riders. Each of the systems coordinates with employment centers to provide services, but like other Community Transportation Systems in North Carolina, they do not carry a significant number of commuters.

Gastonia Transit also provides demand response service within the City of Gastonia during the same hours as its fixed-route service. This curb-to-curb van service is intended for passengers that cannot utilize the fixed-route bus system due to a physical or mental disability.



Local and Regional Fixed-Route Service

The urban centers of the three counties, where residential and employment densities are higher, are home to the fixed-route public transit service within the GCLMPO. These routes are listed in **Table 13-1**, below, and shown in **Figure 13-1**, at the end of the chapter.

As shown in **Figure 13-2**, Gastonia Transit operates six fixed-routes within the City of Gastonia. The system is characterized as a “pulse” system with all buses coming to a central location, in this case Bradley Station, at regular time intervals to facilitate easy transfers for riders. Route frequencies, or headways between buses, vary from one hour to an hour and a half. Gastonia Transit currently operates 5:30 AM-6:30 PM Monday-Friday and 8:00 AM-6:00 PM on Saturdays. The agency provides nearly 300,000 miles and 21,000 hours of service to carry nearly 250,000 trips per year. After a fare increase and reduction in service, bus ridership dropped significantly in the early 2000’s. But since that time existing routes have been restructured, coverage has been extended to new areas, and ridership has remained relatively stable since 2005. Still, the efficiency of Gastonia Transit, measured by passengers per revenue hour and passengers per revenue mile,



remains well below the efficiency of the system in the early 2000’s.

Though more limited in scope, the Community Transit Systems in each county also operate fixed-route and deviated fixed-route services in Gastonia, Dallas, Shelby, and Lincolnton. Gaston ACCESS operates a route between Downtown Gastonia and Gaston College, serving Gaston College students and riders with origins and destinations in the Town of Dallas. Transportation Administration of Cleveland County (TACC) and Transportation Lincoln County (TLC) both operate circulator routes that are mostly limited to the city limits of Shelby and Lincolnton respectively.

Table 13-1. Existing Community Transportation Service Characteristics

SYSTEM	NUMBER OF VEHICLES	AVERAGE TRIPS SERVED PER DAY (2016)	DAYS OF SERVICE	HOURS OF SERVICE	COST PER TRIP
Gastonia Transit (fixed-route)	8	839	Monday - Saturday	M-F: 5:30 AM - 6:30 PM Saturday: 8 AM - 6 PM	\$1.25
Gastonia Transit (demand-response)	3	22	Monday - Saturday	M-F: 5:30 AM - 6:30 PM Saturday: 8 AM - 6 PM	\$2.50
Gaston County ACCESS	26	600	Monday - Friday	4 AM - 6 PM	\$1.55/mi
Transportation Lincoln County	20	208	Monday - Saturday	5 AM - 6 PM	\$1-\$4
Transportation Administration of Cleveland County	26	276	Monday - Friday	6 AM - 6 PM	\$2.26

CATS operates several regional express bus routes in the counties surrounding Mecklenburg County. The 85x - Gastonia Express is currently the only express route in the GCLMPO area. It provides week-day service between Downtown Gastonia and Uptown Charlotte, including a stop in Belmont. GCLMPO staff surveyed riders of the 85X – Gastonia Express in June 2013 to collect information about rider demographics, destinations, and motivation for using transit.

Highlights of this survey include:

- 89% of respondents indicated a work-related trip purpose.
- Uptown Charlotte was the origin or destination for 64% of riders.
- 64% of respondents indicated that they would drive alone if the service did not exist while 16% indicated that they simply would not make the trip.
- The residential origin of riders is diverse, though most respondents indicated residence in Gastonia (56%), Belmont (11%), and Charlotte (9%).
- 25% of respondents indicated that they did not have regular access to a vehicle.
- The household income of riders varied, though most were below the median household income of the metropolitan statistical area. 21% had household incomes above \$100,000.

Figure 13-2. Gastonia Transit Map

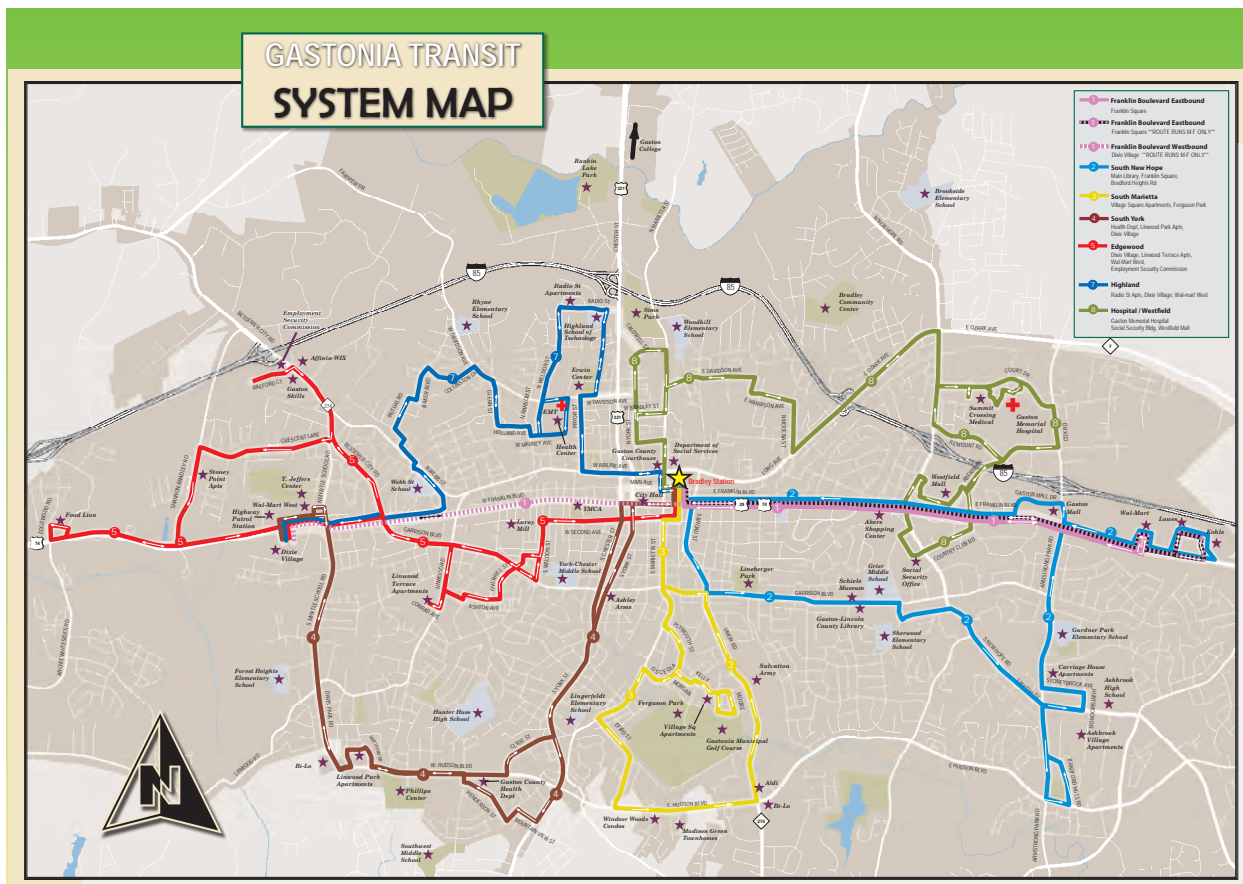


Table 13-2. Express Bus Statistics

ROUTE	2016 AVERAGE DAILY RIDERSHIP	YEARS SERVICE OPERATED	LOCATION OF STOPS	SCHEDULED SERVICE
85X - Gastonia Express	106	2001 - Present	Bradley Station (Gastonia) and Abbey Plaza (Belmont)	AM and PM Peak-Hour Service

Gastonia and Belmont share the operating costs of the route with CATS, although CATS pays for all capital and administrative costs associated with the route. These peak-hour services are operated Monday-Friday and are successful in attracting commuters out of their vehicles and into buses. GCLMPO staff, along with Gastonia Transit, are currently working through the process to add a midday service to the 85X route. **Table 13-2** shows the statistics for the Express Bus including 2016 average daily ridership, years of operation, location of stops, and scheduled service.

Inter-City Service

Inter-city bus service provides transit service between distant cities, with stops spaced further apart than commuter-oriented services like the

85X - Gastonia Express. Greyhound Bus Lines has a station in Kings Mountain that allows travelers to head either north towards Charlotte or south towards Atlanta. **Figure 13-3** shows the Inter-City bus routes.

In 2010 the NCDOT contracted with Coach America, now Sunway Charters, to provide inter-city bus service between Charlotte and Boone. This route is called the N-S Mountaineer and ridership has steadily increased since inception. The majority of trips originate or terminate in Charlotte, but there is some utilization of the stops in Lincolnton and Gastonia. This service operates seven days a week, with two round trips made each day.

Figure 13-3. Inter-City Bus Routes With Population and Transit Dependent Density and Institutions



Figure 13-4. Amtrak Crescent Route



Amtrak also operates one daily route, the Crescent, through Gastonia as shown in **Figure 13-4**. This route allows passengers to travel to the Northeast, as well as southwest towards New Orleans. In recent years, boardings and alightings at the Gastonia station were by far the lowest of all Amtrak stations in North Carolina. This is likely explained by many reasons, including: only being served by one Amtrak route; early AM arrival/departure times of the trains; the isolated location of the station; and proximity to the Charlotte Amtrak station where more frequent and greater service is provided.

Table 13-3 shows the 2017 fiscal year boardings and alightings at the North Carolina Amtrak stations.

Transit Planning

The GCLMPO and the City of Gastonia have conducted a number of transportation studies that focus on the improvement and expansion of public transportation in Gaston County.

Each of these studies are noted here as they present various research perspectives and provide many valid recommendations. Previous plans, reports and studies are listed below:

1. Gaston Rapid Transit Alternatives Study Corridor and Modal Options
2. Gastonia Transit Expansion Study
3. GCLMPO Coordinated Comprehensive Public Transportation Plan
4. Gastonia Transit Efficiency Study

Table 13-3. FY 2017 Ridership for North Carolina Amtrak Stations

CITY	BOARDINGS + ALIGHTINGS
Burlington	21,404
Cary	81,685
Charlotte	168,144
Durham	71,924
Fayetteville	49,976
Gastonia	1,345
Greensboro	111,187
Hamlet	4,376
High Point	30,818
Kannapolis	18,043
Raleigh	150,919
Rocky Mount	52,343
Salisbury	22,148
Salma-Smithfield	13,724
Southern Pines	7,065
Wilson	55,579
All NC Stations	860,680

Source: Amtrak Fact Sheet, Fiscal Year 2017, State of North Carolina

1. GASTON RAPID TRANSIT ALTERNATIVES STUDY CORRIDOR AND MODAL OPTIONS

The Gaston Rapid Transit Alternatives Study (GRTAS) researched alternative public transportation options for service improvements in the Gastonia-Charlotte corridor, in consideration with the extension of transit improvements by CATS in Mecklenburg County's West Corridor. Establishing the nature of the public transportation needs in the Gaston County extension of the CATS corridor also enables the establishment of goals and objectives for public transportation service. The goals and objectives in turn lead to criteria, which can be applied to evaluate the relative merits of various public transportation alternatives. The range of modes studied includes Bus Rapid Transit, Light Rail Transit, Streetcar or "trolley", and Commuter Rail. Alignments considered include I-85, US-29 / US-74 (Franklin / Wilkinson Boulevard), the Piedmont & Northern railroad right-of-way, and the Norfolk Southern main line to Atlanta.

The CSX railroad operates two lines within the study area. The former Piedmont and Northern (P&N) line starts in the center of Gastonia, runs parallel to NC-7 at first, then turns northeast towards Lowell and Mount Holly and crosses the Catawba River into Mecklenburg County.



P&N also operated the "Belmont Spur" which branched out and turned south from the main line, west of Mount Holly, and extended into the town of Belmont. Within Gaston County, only that portion of the former P&N from a point approximately 500 feet west of the old Mount Holly depot to the Catawba River is owned and operated by CSX. The remainder of the route is owned by NCDOT and is out of service. The CSX-owned portion of the line serves various shippers in Mecklenburg County, where the right-of-way is relatively close to the former Seaboard Coast Line (SCL) tracks also owned and operated by CSX. The portion of the former P&N owned by CSX functions as a secondary track between Mt. Holly, Pinoka, and the end of CSX ownership approximately one mile west of Cedar Yard in Charlotte. The SCL alignment is operated as a main line by CSX. Thru traffic on the SCL today is estimated at about 15 trains per day, primarily unit coal trains. In 2001, gross tonnage through Mount Holly was 26 million tons. It is believed to have remained fairly stable since then.

Findings

Trolley, Bus Rapid Transit (BRT) and Light Rail Transit (LRT), the three modes being carried forward in the CATS West Corridor, are considered for the Gaston County Rapid Transit service as well. Commuter rail is not considered as an alternative for connecting to the West Corridor; however, a commuter rail service concept which has been developed by the NCDOT and may prove helpful to Gaston County even though it does not serve the West Corridor.

Wilkinson Boulevard, I-85 for BRT but not for LRT, and the P&N route in Gaston County are considered as potential alignments. The Norfolk Southern main line is rejected.

The BRT mode lends itself to several types of operation:

- Type 1, “Busway All Stops” operates entirely on the guideway and stops at all stations.
- Type 2, “Busway Limited” service operates on local streets for collection and distribution functions at one or both ends of the guideway and uses the guideway making no stops or only a few selected stops en route.
- Type 3 is limited-stop or express (“closed door” or nonstop between points in different communities) service using existing arterials or expressways but not an exclusive guideway.

All three service types may operate in Gaston County. It is anticipated that many of the BRT trips would be through-routed to provide a one-seat ride between points in Gaston and Mecklenburg Counties. Depending on the alignment, six or seven stations would be located on the guideway in Gaston County.

LRT is confined to guideway operation and most likely would be in the all-stops mode, with feeder bus service providing access to the stations. The existing Gastonia Transit service would be the basis of the feeder service, with short diversions to LRT stations as appropriate.

Details of the possible station locations are mapped, and the operating concept is described in more detail in the rest of this chapter. Some design challenges are identified. The major capital items associated with each alternative are identified as well.

The three modes considered were BRT, Trolley / Streetcar, and LRT which the CATS West Corridor Major Investment Study had recommended to be carried forward for further analysis along various corridor alignments.



Recommendations

Ultimately, the GCLMPO, along with its community partners, will need to work closely with CATS to select a mode and an alignment for the link to CATS' West Corridor service. A decision on alignment should be made only after careful analysis of alternatives for development and how likely they are to be achieved. As of December 2017, CATS is currently completing the West Corridor Transit Study. As part of this study, CATS will:

- Develop a new rapid transit vision for Charlotte's West Corridor, which is currently poised for streetcar under the 2030 Transit Corridor System Plan.
- Will present an updated rapid transit vision for the West Corridor to the Metropolitan Transit Commission (MTC) for adoption into the 2030 Transit Corridor System Plan.

CATS is conducting this study because there have been significant changes within the corridor, including:

- There have been multiple land-use developments, and transit decisions that challenge streetcar as the appropriate transit vision for this corridor.

- Charlotte Douglas International Airport is rapidly expanding.
- A large mixed-use district just south of the airport call The River District was recently approved by the Charlotte City Council.
- The LYNX Silver Line Study recommended that the Silver Line continue through Uptown Charlotte and extend to the Airport as a light rail corridor.
- CATS and NCDOT have more experience with implementing light rail in street right-of-way.

The GCLMPO should continue its efforts to identify what its residents and businesses would prefer the future shape of its land uses to be, and make the legislative and administrative changes necessary to enable that future to be realized. Because of the linkage between transportation planning and land use planning and regulation, a key factor in alignment selection should be planned land uses in station areas and elsewhere along the alignment. The desired land use could be a major influence on the choice of alignment. Conversely, timely action to encourage transit-oriented development along a selected alignment can serve to stimulate development and redevelopment along desired lines as well as provide more ridership for the rapid transit service, thereby decreasing congestion in the corridor.

Major capital facility design and construction in Gaston County's extension of the West Corridor should only follow firm commitments to those activities in Mecklenburg County, but some intermediate steps can be taken earlier to establish the area's commitment to rapid transit. Gastonia's best alternative depends to a large extent on CATS' decision as to mode and alignment in the West Corridor.

Multimodal Transportation Site Selection Analysis

The Rapid Transit Alternatives Study also included an evaluation of sites and recommendation for the location for a new multimodal transportation station. The modes served at the station would be local bus, intercity bus, bus rapid transit, vehicles, pedestrians, bicycles, and possibly light rail or commuter rail transit. The existing bus terminal, the Bradley Station, serves as the existing Gastonia Transit facility. It has a bus loop, a pavilion for waiting passengers, and park/ride spaces.

As part of the study, the City identified potential sites for a new multimodal station. The study included the recommendation of a preferred site, along with a conceptual site design. The following four sites were analyzed as part of the study:

1. East Main Avenue and Oakland Street (existing Bradley Station)
2. East Main Avenue and Broad Street (between the concrete ready-mix plant and the restaurant)
3. West Main Avenue between Highland and Trenton Streets (Abandoned Sears Building)
4. West Second Avenue and Firestone Street (Old Firestone Mill)



Selected Site Recommendation

After extensive analysis was completed, the East Main Ave/Broad Street site was recommended. It fit best and most easily with multi-modal access, being able to support both commuter rail (or LRT) and intercity rail from a single, at-grade access point. Site development would be relatively straightforward, and redevelopment of adjacent parcels using TOD principles could completely change the character of the vicinity.

As a follow-up to this recommendation, in the fall of 2012, the Gastonia City Council hired HDR, Engineering, Inc. to draft a Multimodal Site Suitability and Conceptual Design Study. Unfortunately the study recommendations were not adopted by the City Council, and have not been implemented. As conversations continue regarding the expansion of the CATS' West Corridor and the opportunities to tie into this for expanded public transportation options, the multimodal discussions can and should be revisited.

2. GASTONIA TRANSIT EXPANSION STUDY

Based on the array of baseline system and expansion strategies, a series of recommendations has been established in order to expand Gastonia Transit. These recommendations address concerns regarding the efficiency of the current system, as well as opportunities for future expansion. Eight primary action items are defined based on public and stakeholder input, demographic analyses, and examinations of current services. These action items include a variety of improvements, including restructuring of existing services, initiation of new services, and extended hours of operation.

The implementation plan was designed to develop responsive strategies to transit needs, using public input to prioritize the recommended improvements. Additionally, the plan provides a realistic program that can be implemented in a phased approach, based on funding availability.

It is important to ensure that the existing system is operating as efficiently as possible, before taking on expansion projects. Based on the significant decrease in ridership since the last service changes in 2004, a top priority for Gastonia Transit is to restructure the current system to reduce the travel times for customers to the extent possible. After the system restructuring is complete, a series of expansion projects can further enhance mobility options for current and future customers.

It is anticipated that the proposed implementation plan may take several years to implement, based on funding availability, or may be implemented one recommendation at a time. However, continuing to progress toward implementing the recommendations will result in a much improved transit system.



Recommendations

The study outlined eight recommendations listed below. Each recommendation is detailed in the full plan, which can be accessed from the GCLMPO's website at www.gclmpo.org.

1. Implement Baseline Alternative #1
2. Extend Weekday Service to 9 PM
3. Initiate East Gaston Flexroute
4. Expand Fixed Route Service to Baseline Alternative #2
5. Initiate Bessemer City Flexroute
6. Extend Saturday Service to 9 PM
7. Add South Union Road Route
8. Add Downtown Trolley Route

Additional Recommendations

In addition to the eight major recommendations above, two additional projects are suggested based on public and stakeholder input:

1. Study the feasibility of vanpool service

Vanpool service is used in a number of different areas in North Carolina and around the country to connect workers to job sites in areas where there may not be sufficient demand for dedicated transit services, but commuting workers have common destinations. As discussed earlier in this chapter, CATS has a well-developed vanpool program, including several vanpools that originate in Gaston County. It is recommended that the GCLMPO conduct a more detailed study of the potential need for vanpool service specifically targeting major employment sites in Gaston County. Such a study would include an in-depth analysis of commuting patterns to major industrial plants and other employment centers, and would gauge the interest of employers in supporting vanpool services. Presentations from companies that organize and operate vanpools could also be made.

2. Add bike racks to Gastonia Transit buses

The addition of bicycle racks on buses is a low-cost enhancement that would enhance the area's network of bicycle infrastructure. Racks holding two or three bicycles can easily be added to the existing bus fleet, and would be beneficial for bicyclists looking to use transit for a portion of their trip. Direct access to the Greenway starting at Lineberger Park would be available through transit, as well as access to numerous other destinations.



3. GCLMPO COORDINATED COMPREHENSIVE PUBLIC TRANSPORTATION PLAN

The NCDOT and the Federal Transit Administration (FTA) have both made a commitment to tying eligibility for various Federal transit funds and programs to approved coordinated comprehensive transit plans created by local transit agencies. In 2013, following the consolidation of the Gaston Urban Area MPO and Lake Norman Rural Planning Organization, transit providers in Gaston, Cleveland, Lincoln, and Iredell counties began updating and consolidating their locally coordinated public transportation plans. The planning process identified opportunities for efficiencies through coordination, as well as improved marketing to increase utilization of existing services. This was especially apparent in car and vanpooling, as well as the development of park and ride lots throughout the study area. It also identified logical linkages with existing transit services to help create a truly regional system.

The previous recommendations for new services include both commuter and traditional demand-response services. The US 321 corridor between Gastonia and Hickory was seen as appropriate for fixed-route service, particularly to the Lincoln County Industrial Park. This recommendation was addressed in 2010 with the initiation of the North-South Mountaineer, a daily route that travels between Boone and Charlotte, with stops in Hickory, Lincolnton and Gastonia. The US 74 Corridor between Shelby and Gastonia should carry fixed-route bus service as an extension of Gastonia and Charlotte Area Transit System fixed-route services. Cleveland County also needs expanded service to meet the needs of residents requiring dialysis, and other medical and human services.

This plan makes reasonable recommendations for new services to meet the identified needs of a variety of populations. When implemented, it will provide a range of options to help residents and workers in the study area travel for their daily needs. An illustration of some of the recommendations can be found in **Figure 13-5**, at the end of the chapter.

4. GASTONIA TRANSIT EFFICIENCY STUDY

Cherry Consulting of the Carolinas, Inc. (3C Inc.) was contracted by the City of Gastonia to ascertain how Gastonia Transit is being used and to evaluate its optimal operational efficiencies. The following tasks and focus areas comprise the project's Scope of Work:

1. Perform Ridership Survey
2. Perform Ridership Count
3. Review the Current Route Structure
4. Evaluate and Determine proper size of buses and fuel type
5. Consider other methods to offering public transportation, as well as a coordinated or combined transit system with Gaston County ACCESS
6. Identify overall operating efficiencies and improvements



1. Ridership Survey

Utilizing a survey with identical questions asked during a May 2012 survey (serving as a baseline for comparisons of the two survey periods), from April 7th through April 9th, 2016 AJM Consulting interviewed 124 citizens that were either riding the bus or waiting at Bradley Station. The following are the most noteworthy changes in 2016 responses:

- A greater number of passengers are riding transit five (5) or more days because no car is available.
- Passengers between the ages of 19 and 24 years old showed the greatest increase.
- Fewer shopping trips are taken using the bus.
- Most passengers feel safe riding Gastonia Transit, but fewer are satisfied with Bradley Station's security and cleanliness.
- The on-time performance of buses in maintaining schedules has shown a slight decline from 2012.
- The availability of transit information showed increases in the number of positive riders' responses.
- Some passengers think that the service needs improvement, specifically more frequent service with less wait time between bus arrivals.

2. Ridership Count

On March 21 and 22, 2016, a 3C, Inc. Team Member rode each of the bus routes, verifying each bus stop and intersecting street and also observing the environmental conditions, destinations, traffic patterns, and any potential safety hazards.

3. Review of Current Route Structure

All bus routes were driven on multiple occasions to gain a thorough understanding of the existing routes. Also, the Bus Operators were interviewed on March 22nd, obtaining their insight on current traffic patterns around the City and learning of alternatives for reducing travel time. Finally, the results of the passenger counts were used to validate Team members' on-street observations.

4. Determination of Proper Bus Size and Fuel Type

Gastonia Transit currently operates seven bus routes with 60-minute or 90-minute headways. The agency currently has a fleet of eight (8) 35-ft. Gillig-manufactured buses to operate its seven routes. On any given weekday, all six buses are operating the service, with one bus in the maintenance center for routine maintenance or repairs and one bus standing by as a backup. If, on occasion, two buses are out of service for repairs, the agency will use vans on a bus route until a replacement bus is available.

Recommendations – Fleet Size

1. Three (3) of the eight buses are now past their useful life as defined by FTA guidelines (see FTA circular C 5010.1D). According to these guidelines, the minimum service life for a standard, 35-foot to 40-foot bus is 12 years or 500,000 miles, whichever comes first. This has implications on costs of operating and maintaining the fleet, as well as the safety and reliability of the vehicles. Gastonia Transit should make provisions in the near future to retire these vehicles and to replace them. While it is understood that this has cost implications, it is recommended that the agency budget for the local match and request federal funds to replace the vehicles in the agency's fleet which have reached their useful life. In order to meet its current demands and maximize opportunities for ridership growth, the City needs to have a

fleet of vehicles that have not reached their useful years so as to ensure reliable service, i.e. successfully maintaining existing headways and not relying upon the Americans with Disabilities Act (ADA) complementary service vans as back-up vehicles. Restructuring of routes and headways will most likely require six (6) operative vehicles for weekday service; therefore, the City should prepare to replace three units in the next three to five years.

2. Continue to use large buses (35-ft.) for the fixed route operations on major arterials, such as Franklin Boulevard, but consider using Light Transit Vehicles (LTVs) on routes where passenger capacities are much lower. There are advantages to utilizing LTVs in a transit system: light ridership demand; when the route traverses narrow streets; and requiring less space at bus stops and maintenance garages, among others. While having a standard vehicle size for the entire fleet has a number of advantages [simplifies the procurement and storage of replacement and maintenance parts; simplifies the maintenance needs of the system; ensures that all passengers have the same ride experience, regardless of the route], a diversity in fleet type to include smaller buses can help provide better service coverage into neighborhoods where street designs are not conducive for heavy equipment vehicle operations and can maintain time schedules comparable to a bus. While smaller transit vehicles, such as LTVs, have a shorter lifecycle and require replacement sooner than standard 35-ft. buses, the current and short-term ridership counts, coupled with the geographic areas served, indicate that smaller, less costly vehicles are sufficient for the foreseeable future to achieve Gastonia Transit System's service objectives.

Table 13-4 shows recommended vehicle assignments based upon proposed route recommendations previously discussed.

Table 13-4. Vehicle Recommendations by Route

ROUTE NO.	ROUTE	RECOMMENDED VEHICLE
#1	Franklin Boulevard	Bus
#2/#3	S. New Hope Rd/ S. Marietta St	Bus
#4	S. York Rd	LTV
#5	Edgewood Rd	LTV
#7	Highland Ave	LTV
#8	Hospital	Bus

Recommendations – Fuel Type

1. Continue to use diesel for fueling the fleet. Agencies that choose either CNG or Hybrid Electric must have the infrastructures in place to support the alternative fuel. Switching some or all of Gastonia Transit's fleet to an alternative fuel will, more than likely, require installation of a new fueling station. Unless there is a plan for other City of Gastonia fleets (motor pool, waste disposal, etc.) to be converted or switch to CNG, adding the infrastructure for a CNG fueling facility will not be cost effective. Diesel provides a reliable fueling system for the City, and should continue to be used in the near-term.
2. Consider gasoline powered vehicle for LTVs that may be purchased in the future. Since LTVs are equipped with medium truck engines and have a shorter 'useful life' than transit buses, the option of purchasing an LTV that operates on unleaded gasoline is an option. A gasoline-powered engine compared to diesel is less expensive both in the equipment purchase and ongoing operating expenses.

In summary, it is recommended that the City of Gastonia develop a vehicle replacement schedule that allows Gastonia Transit to move forward with procuring its replacement vehicles to ensure that dependable service is provided to existing and potential future riders.

5. Other Methods to Offering

Public Transportation in Gastonia

BIKE RACKS

Challenges exist in implementing this program. The maintenance bays where vehicles are repaired and stored at night are not long enough to fit buses with racks. The City is exploring the best method to incorporate bike racks onto its fleet. The roll out of this initiative should be a thoughtful process prior to implementation and public launch to the citizens with assistance from Gastonia's Marketing Director and Transportation Planning Department, both who can be important advocates of the program.

Recommendation

It is recommended that bike racks be purchased from a transit system (possibly from CATS which no longer uses two-position racks). Install racks just before instituting any minor route modifications. When the route modifications are published, an announcement of this transportation alternative should occur.



CONTRACT WITH OTHER TRANSPORTATION PROVIDERS

There appears to be quite a number of private transportation providers in addition to the presence of the two additional public sector agencies, Gaston ACCESS and CATS.

Recommendation

The City should conduct a cost analysis to determine whether or not there are cost savings in contracting the entire transit operations or, at a minimum, the ADA Complementary Paratransit service. For the later, possible vendors are private companies that have lift-equipped vehicles. Non-ambulatory services, such as Uber and Lyft, are contracting with transit systems throughout the country for transports in areas where service demands are low; during 'off peak' hours of operations when high-capacity transit vehicles are not needed; and to implement limited service hours during late nights and weekends. Uber is now available in the Gastonia city limits, particularly if the destination is between Gastonia and Charlotte.

TECHNOLOGY

Gastonia Transit has not procured some of the most commonly used technologies in the public transit industry possibly because local matching dollars have not been allocated to supplement available FTA capital grant funds. The two technologies that do exist on transit buses are the camera surveillance system and fare boxes, both add-on procurement options.

Technologies that are readily available include:

- Scheduling and dispatching software - optimize routings of ADA Complementary Service passenger pick-ups
- Automatic Vehicle Location (AVL) systems – identifies exact locations of vehicles using GPS technology
- Transit Automated Voice Annunciator System – integrated with an AVL system, geographic location is announced both within the vehicle and at the stop, fulfilling ADA announcement requirements and making the route system more user-friendly
- Registering fare boxes with fare card readers – tracks ridership; eliminates the need for Staff to count currency; allows passengers to use 'Smart Cards' (cards are replenished automatically when the card is low on funds)
- Automatic Passenger Counting Systems (APC) – counts passengers upon boarding and departing the vehicles
- Interactive Voice Response (IVR) – communicates with ADA Complementary Service passengers, reminding them of scheduled trips, service delays, and other time-sensitive information



Recommendation

While cost implications are understood, it is recommended that Gastonia Transit budget local match dollars and request federal funds to purchase, at a minimum, scheduling software and registering fare boxes with card readers. Gastonia Transit should develop a 'Technology Plan' for acquiring additional automated equipment that keeps the agency in line with the newest advancements in the industry.

SIDEWALKS: A TRANSIT MOBILITY ENHANCEMENT

Sidewalks are one of the most important transit amenities to bus riders because it affords pedestrian utilization to the bus stops. Sidewalks afford riders a comfortable, safe place to stage when awaiting vehicle arrivals. In the case of physically disabled riders, especially those using wheelchairs and scooters, they have no option other than to wait in the street, which is a safety hazard.

In the ‘Gastonia Comprehensive Pedestrian Plan’ (May 2014), a paragraph on the City’s purpose for the study stated that the “City understands that walking is critical to having a diverse transportation network and making its streets more vibrant and attractive. For people to choose walking over other modes of transportation, sidewalks and other pedestrian spaces need to be safe, comfortable, and aesthetically pleasing, while also connecting logical desired lines between recognized origins and destinations.”

Recommendation

Working with the Engineering Department, Transit staff should develop a plan which includes a schedule to make these enhancements and any other locations that facilitate use of the bus system. The City of Gastonia should consider using FTA grant funds (80% Federal 5307 grant and 20% State or Local) to expedite installing new sidewalks as well as ADA ramps, making the sidewalks accessible to all citizens.

MARKETING THE TRANSIT SERVICES

If the City wants to enhance mobility options and choices for the changing populations and demographics in Gastonia, thereby possibly increasing ridership, it is imperative for Gastonia Transit to rebrand itself, developing key messages to not only its stakeholders but also future customers. Marketing efforts need to be intentional and results-driven.



Recommendation

With assistance and expertise from the City’s Marketing Director and any vendors used in marketing efforts, Transit staff should focus on marketing endeavors, such as periodic updates to the website, attending public events, communicating service delays due to inclement weather on the City’s Blackboard, ‘Connect’ Program, etc.

The individual route maps on the ‘Gastonia Transit System Map & Rider Guide’ is quite informative. One enhancement to consider is the identification of more major streets and travel corridors on the large System Map, enabling a user to more quickly identify his/her origin with intended destinations.

6. Identification of Overall Efficiency Improvements

BRADLEY STATION: PERSONAL SAFETY / SECURITY

1. Research the costs associated with the purchase of a bus pass vending machine and determine whether the cost is outweighed by the risk of personal harm to person(s) by a criminal who decides to rob a Dispatcher.
2. Lease a currency vending machine. While research was conducted in the past and the cost was determined to be prohibitive, current cost-benefit analysis may be useful in terms of improved productivity.
3. Greater law enforcement visibility is warranted at Bradley Station, accomplished by Officers on patrol driving through the parking lot and/or periodically going inside the waiting area. Also, law enforcement agencies are keen in tracking data. Dispatchers should record any and all passenger security incidents, and these should be reported to law enforcement each and every time for tracking.

FARE COUNTING PROCESS: FISCAL CONTROL(S) AND POTENTIAL RISK EXPOSURE

1. Instituting a fare card system (or a more enhanced collection system referred to as 'SmartCard') in lieu of coins and currency alleviates the time and expenses associated with the fare counting process.

BRADLEY STATION WORK ENVIRONMENT

1. Install a key pad or card reader outside of the Employee Restroom door, allowing entry to only authorized personnel. This device eliminates some entries by Operators into the Dispatchers' office.
2. Contact FTA to determine if current surplus of Federal grants can be re-directed to construct an addition to Bradley Station for an Operator-based space (break room equipped with individual lockers, refrigerator, microwave, sink, and computers; Operator training room; etc.).





ORGANIZATIONAL STRUCTURE

1. The Planning Department's Grant Facilitator position should perform assistive services of 5307 and 5310 grants. While the incumbent is somewhat new to the position and is currently only responsible for the 104(d) Transportation Planning grant administration, it is a reasonable expectation that assumption of grants tracking and monitoring for grants currently administered in Solid Waste Department can occur.
2. The City's Finance Department should be actively involved in the oversight and "drawing down" of both transportation planning and transit grants.
3. City leaders should have policy discussions on the role of Gastonia Transit's services and local funding matches to utilize and maximize both existing and future Federal Transit Administration grant allocations.
4. The City's Human Resources Department should conduct a Job Task Analysis study and manpower utilization to determine the appropriate staffing requirements to operate the transit service.
5. For no less than two months, Transit staff should maintain detailed time tracking of the tasks that they perform, identifying the

amount of time spent on transit versus other Department functions. The data should be provided to the HR Department as part of its study.

6. Greater collaboration needs to occur between Transit Staff and the City's Transportation Planning Department as the latter are currently the 'in-house experts' on FTA regulations, particularly involving transportation regionalization efforts.
7. Staff should schedule time every six months for strategic planning (inclusive of the City's Transportation Planning staff), evaluating how effectively tasks were performed during the previous six months; where achievements and service enhancements were made; and to plan activities and actions for the short-term future. This session should be results-driven with performance measures defined.

As stated above, the GCLMPO existing transit services are shown in **Figure 13-1**. The recommended transit services are shown in the map in **Figure 13-5**, and the projects are listed in **Table 13-5**.

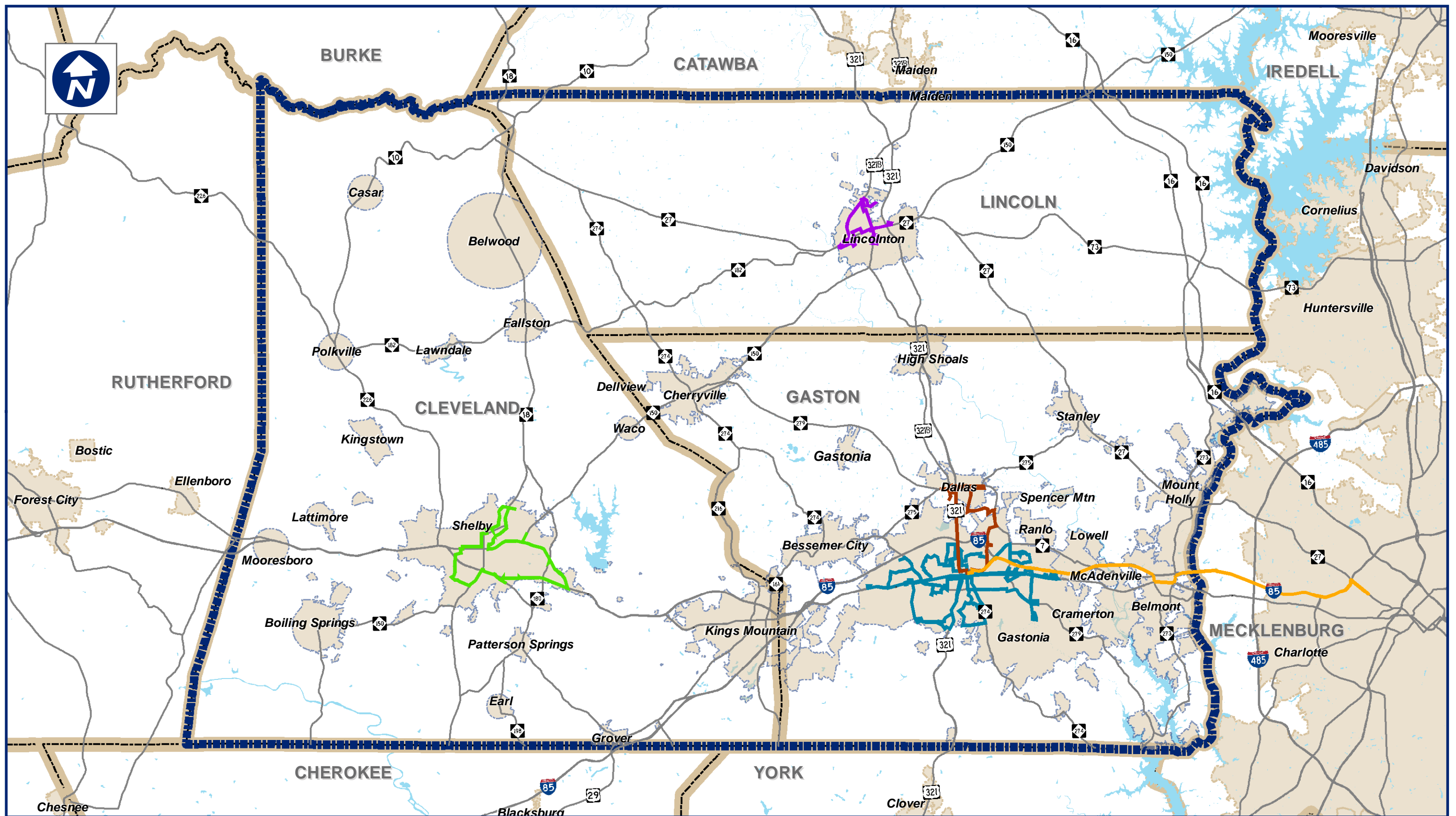
Table 13-5. Public Transit Projects

MTP ID	COUNTY	TRANSIT AGENCY	STIP ID NUMBER	DESCRIPTION	FUNDING SOURCE	2025 COST	2035 COST	2045 COST
2025 HORIZON YEAR								
	<i>Gaston</i>	<i>Gastonia Transit</i>	<i>TA-5201</i>	<i>Bus Replacement Project for Gastonia Express Mid-Day Route</i>	<i>CMAQ, L</i>	<i>NA</i>		
	<i>Gaston</i>	<i>Gastonia Transit</i>	<i>TD-5254 HF</i>	<i>Facility - Park and Ride - Gaston Exp Between Belmont and Charlotte</i>	<i>CMAQ</i>	<i>NA</i>		
	<i>Gaston</i>	<i>Gastonia Transit</i>	<i>TO-5218 HF</i>	<i>Operational Assistance for Gastonia Express Mid-Day Route (C5606G)</i>	<i>CMAQ, L</i>	<i>NA</i>		
	<i>Gaston</i>	<i>Charlotte Area Transit Sytem</i>	<i>TD-4704C HF</i>	<i>Facility - Park and Ride - CATS X85 City of Belmont (CMAQ APP GA-11)</i>	<i>CMAQ</i>	<i>NA</i>		
	"Forsyth, Gaston, Guilford"	Piedmont Authority for Regional Transportation (PART) Gastonia Transit	TA-6680	Airport Area HUB shuttle service. Purchase one expansion light transit vehicle	FEDT, T, L, FUZ, L, S	NA		
	Gaston	Gaston County Access	TA-6113 HF	Capital	FNU, L, S	NA		
	Gaston	Gaston County Access	TQ-6666 HF	Capital	FEPD, L, S	NA		
	Gaston	Gastonia Transit	TA-5138 HF	Bus Replacement (3 Buses)	FUZ, L, S	NA		
	Gaston	Gastonia Transit	TA-5137 HF	Supervisor's Vehicle Replacement	FUZ, L, S	NA		
	Gaston	Gastonia Transit	TA-5136 HF	ADA van Replacement (3 Vans)	FUZ, L, S	NA		
	Gaston	Gastonia Transit	TA-4926 HF	Expansion Bus	FUZ, L, S	NA		
	Gaston	Gastonia Transit	TD-5270 HF	Gastonia Transit (?)	FUZ, L, S	NA		
	Gaston	Gastonia Transit	TG-5117 HF	Routine Capital-Bus stop shelters, benches, shop equipment, spare parts, engines, farebox, service vehicles, etc.	FUZ, L	NA		
	Gaston, Lincoln	Lincoln County	TA-5185 DIV	One expansion light transit vehicle	FEPD, L, T	NA		
	Lincoln	Lincoln County	TA-6676 DIV	Purchase Expansion Vehicle for route connecting Lincolnton with the NC 16 Corridor near Lake Norman	FNU, T, L	NA		
	Lincoln	Lincoln County	TQ-6667 HF	Capital	FEPD, L, S	NA		
	Lincoln	Lincoln Senior Services	TQ-9004 HF	Capital - Purchase of Service. Capital- Purchase of Service from Transportation Lincoln County to transport elderly and disabled county residents	FEPD, L, S	NA		
	Cleveland	Transportation Admin. Of Cleveland County	TA-6538 HF	Capital	FNU, L, S	NA		
	Cleveland	Transportation Admin. Of Cleveland County	TA-6290 HF	Replacement Van		NA		
	Cleveland	Transportation Admin. Of Cleveland County	TQ-6668 HF	Capital	FEPD, L, S	NA		
2035 HORIZON YEAR								
NPT1	Lincoln	Transportation Lincoln County		Design, ROW Acquisition, and Construction of new Facility			\$ 3,500,000	
NPT6	Gaston	Gastonia Transit		New Facility Dixie Village Transit Center			\$3,216,320	
NPT3	Cleveland	TACC		Kings Mountain connection to Gastonia Transit Routes			\$321,612	

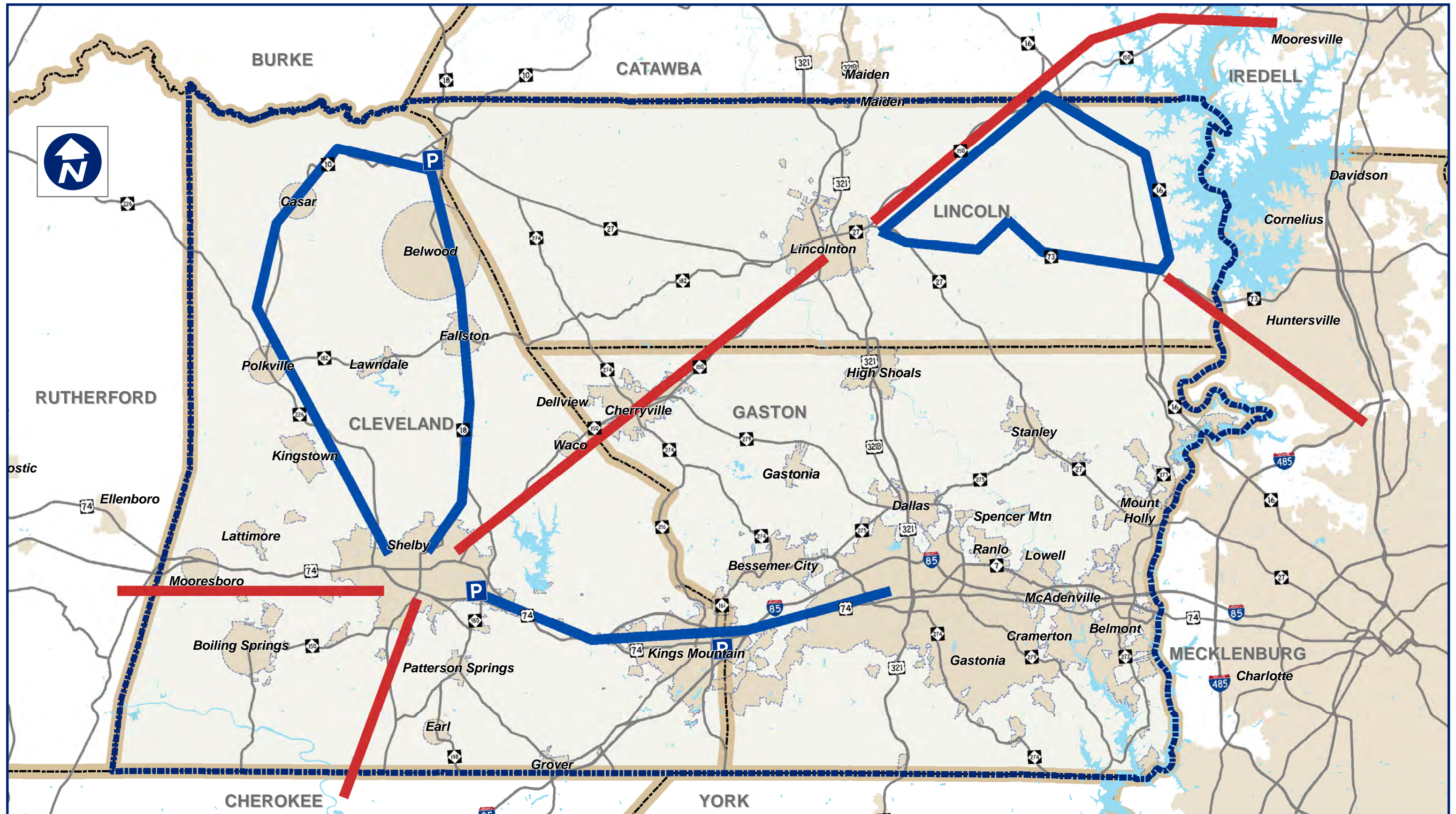
NOTE: Projects committed in the 2018-2027 STIP are shown in bold. Committed CMAQ projects are shown in bold italics.

Table 13-5. Public Transit Projects (Continued)

MTP ID	COUNTY	TRANSIT AGENCY	STIP ID NUMBER	DESCRIPTION	FUNDING SOURCE	2025 COST	2035 COST	2045 COST
2035 HORIZON YEAR (CONTINUED)								
NPT4	Cleveland	Transportation Administration of Cleveland County		Demand Response Van (2)			\$142,437	
NPT5	Lincoln	Transportation Lincoln County		Expansion Light Transit Vehicle (3)			\$252,957	
2045 HORIZON YEAR								
NPT2	Gaston	Gastonia Transit		New Facility - Multimodal Transportation Center			\$	9,801,690
NPT7	Gaston	Gastonia Transit		35-foot Bus			\$	753,816
NPT8	Gaston	Gaston ACCESS		Demand Response Van			\$	92,380
NPT9	Cleveland	Transportation Administration of Cleveland County		Demand Response Van (2)			\$	181,137
NPT10	Lincoln	Transportation Lincoln County		Demand Response Van			\$	94,226
NPT11	Gaston	Gastonia Transit		Demand Response Van			\$	98,034
NPT12	Cleveland	Transportation Administration of Cleveland County		Demand Response Van (4)			\$	408,298
NPT13	Lincoln	Transportation Lincoln County		Demand Response Van (2)			\$	218,897
NPT14	Gaston	Gastonia Transit		35-foot Bus			\$	918,897
NPT15	Gaston	Gastonia Transit		Demand Response Van			\$	119,502
NPT16	Gaston	Gaston ACCESS		Demand Response Van (2)			\$	214,604
NPT17	Gaston	Gastonia Transit		Trolley replica bus			\$	563,272



LEGEND Highways Major Roads MPO Area Municipalities Counties Regional Waters	Transportation Lincoln County Route Cleveland County Transit Route Gaston College ACCESS Bus Route CATS 85X Route Gastonia Transit Bus Routes	 GASTON-CLEVELAND-LINCOLN MPO Metropolitan Planning Organization Date created: 1/5/18	Figure: 13-1 GCLMPO Existing Transit Services 2045 METROPOLITAN TRANSPORTATION PLAN
	13-158		



LEGEND Highways Major Roads MPO Area Municipalities Counties Regional Waters	Van Pool Deviated Service Park & Ride	0 2 4 8 Miles GASTON-CLEVELAND-LINCOLN MPO Metropolitan Planning Organization Date created: 1/9/18	Figure: 13-5 GCLMPO Recommended Transit Services 2045 METROPOLITAN TRANSPORTATION PLAN
	13-159		

The region's aviation facilities serve a vital role in the overall transportation system. They aid in corporate recruitment and economic development, provide the ability to engage in business activities related to aviation and movement of cargo, provide military support, provide recreational and tourism opportunities, and enable emergency response for medical, fire, or police teams.

There are three publicly-owned General Aviation Airports in the Gaston-Cleveland-Lincoln MPO area, one in each county. These include: Gastonia Municipal Airport; Shelby-Cleveland County Regional Airport; and Lincolnton-Lincoln County Regional Airport. Though none of these airports offer scheduled, passenger air service, Charlotte-Douglas International Airport serves this purpose in adjacent Mecklenburg County. Recently, Concord Regional Airport in nearby Cabarrus County has also begun offering scheduled, passenger air service. Other nearby Commercial Service Airports include the Hickory Regional Airport and Greenville Spartanburg International Airport.

Aviation Facts and Figures

In North Carolina, 65% of all General Aviation flights, or non-commercial flights, are business-related (Danieley, 2012). The airports in the

GCLMPO area are currently only servicing General Aviation flights. General Aviation airports serve as Reliever Airports to larger airports, such as Charlotte Douglas International Airport, thereby reducing congestion at these larger airports. Military operations are relatively insignificant at the GCLMPO airports, with the largest number of operations (900) and percentage of all operations (3%) occurring at the Lincolnton-Lincoln County Regional Airport.

The number of based aircraft and number of total operations (arrivals and departures) for all GCLMPO airports can be seen in **Table 14-1**. Each of the three airports has only one runway, though they vary somewhat in length as shown in **Table 14-2**. Lincolnton-Lincoln County Regional Airport has approximately double the number of based aircraft as the other two airports, with the highest total operations. When looking only at Itinerant operations, or operations performed by an aircraft that lands at an airport, arriving from outside the airport area, or departs an airport and leaves the airport area, Lincolnton-Lincoln County Regional Airport has approximately double the number of the other two airports. This is likely explained by the fact that it also has approximately double the number of based aircraft.



Table 14-1. GCLMPO Airports - Based Aircraft and Operations Record

	TOTAL OPERATIONS	OPERATIONS					
		TOTAL OPERATIONS	COMMERCIAL		GENERAL AVIATION		MILITARY
			AIR CARRIER	AIR TAXI	LOCAL	ITINERANT	
Gastonia Municipal	40	9,900	0	0	5,400	4,500	10
Shelby-Cleveland County Regional	34	18,200	0	0	10,000	8,000	200
Lincolnton-Lincoln County Regional	73	34,100	0	0	15,300	17,900	900

Source: US Census Bureau, American Community Survey 2009-2013

An NCDOT study of the economic impacts of airports in North Carolina found that the airports in the GCLMPO have some of the smallest economic impacts in the Charlotte region. These findings are summarized in **Table 14-3**.

Airport Planning Process

There are various levels of planning needed in order to meet the demands of our airport systems. The following explains system planning efforts at all levels of government and the role they play in maintaining our airports.

At the federal level, the National Plan of Integrated Airport Systems (NPIAS) provides an overview of national aviation capacity needs and funding requirements. The NPIAS identifies more than 3,300 airports that are of national significance

and thus are eligible for federal funding under the Airport Improvement Program. All three of the publicly-owned, General Aviation airports in the GCLMPO are included in the National Plan of Integrated Airport Systems.

The national ACIP serves as the primary planning tool for the FAA to systematically identify, prioritize and assign funds to critical airport development and associated capital needs for the National Airspace System (NAS). The ACIP also serves as the basis for the distribution of grant funds under the Airport Improvement Program (AIP). By identifying and investing in airport development and capital needs, the Federal Aviation Administration can ensure the American public that the NAS is a safe, secure and efficient environment for air travel nationwide.

At the regional level, each FAA Region maintains a regional ACIP which represent the needs of the airports in their region. This plan is used to inform the national ACIP and in turn the federal funding in the annual AIP.

Aviation projects in North Carolina are funded by the North Carolina Division of Aviation (NCDOA) which administers the FAA Block Grant Program along with the State Aid to Airports Program. The Grant administration function ensures state

Table 14-2. GCLMPO Airports
Runway Characteristics

	LENGTH	WIDTH
Cleveland	3770'	100'
Gaston	5001'	100'
Lincoln	5504'	100'

Source: USDOT, FAA Airport Master Records, 2015 and 2016

Table 14-3. Estimated Annual Economic Impact of Charlotte Area Airports

AIRPORT NAME	CITY/TOWN	TOTAL OUTPUT (DOLLARS)*	TOTAL EMPLOYMENT (JOBS)*	TOTAL ESTIMATED PAYROLL INCOME (DOLLARS)*	TOTAL STATE AND LOCAL TAXES (DOLLARS)
Charlotte Douglas International	Charlotte	\$ 13,591,800,000	61,590	\$2,212,690,000	\$551,973,000
Concord Regional	Concord	\$ 160,940,000	1,940	\$42,960,000	\$3,162,000
Stanley County	Albemarle	\$ 102,130,000	660	\$29,080,000	\$785,000
Rowan County	Salisbury	\$ 97,990,000	710	\$30,030,000	\$2,935,000
Statesville Regional	Statesville	\$ 40,680,000	290	\$9,490,000	\$2,420,000
Hickory Regional	Hickory	\$ 25,100,000	160	\$5,110,000	\$552,000
Shelby-Cleveland County Regional	Shelby	\$ 39,030,000	220	\$10,100,000	\$860,000
Anson County - Jeff Cloud Field	Wadesboro	\$ 17,960,000	40	\$1,350,000	\$249,000
Lincolnton-Lincoln County Regional	Lincolnton	\$ 11,160,000	70	\$2,540,000	\$367,000
Gastonia Municipal	Gastonia	\$ 5,900,000	30	\$1,000,000	\$130,000

*Total includes direct, indirect, and induced

Source: NCDOT, Economic Contribution of North Carolina Airports, 2016

and federal grant funds are transferred in a timely manner between the various parties. States that participate in the State Block Grant Program assume responsibility for administering AIP grants at airports classified as “other than primary” airports — that is, non-primary commercial service, reliever, and general aviation airports. Each State is responsible for determining which locations will receive funds for ongoing project administration.

State Aid to Airports is the basic airport aid program of the North Carolina Department of Transportation. Under the terms of North Carolina General Statutes Chapter 63, “the Department of Transportation is hereby authorized to provide State aid in the forms of loans and grants to cities, counties, and public airport authorities for the purpose of planning, acquiring, constructing, or improving municipal, county and other publicly owned or controlled airport facilities, and to authorize related programs of aviation safety, promotions, and long-range planning”.



The North Carolina General Aviation Airport Development Plan identifies the deficiencies that North Carolina General Aviation airports need to address and then provides a systematic and strategic approach for the Division of Aviation to address these needs. For each Airport Grouping, the Division of Aviation established Minimum and Recommended standards for every Airport Development Category eligible for grant funds. For example, blue group airports, such as all three of the General Aviation airports in the GCLMPO, have a minimum runway length of 4,200 paved feet and a recommended length of 5,500 paved feet. This plan is intended to serve as a guide to local airport sponsors when developing their Airport Layout Plan (ALP) and Transportation Improvement Program (TIP) for their airport.

At the local level, Airport Layout Plans are required by the Federal Aviation Administration for airports receiving federal assistance. The ALP serves as a critical planning tool that depicts both existing facilities and planned development for an airport. By definition, the ALP is a plan for a specific airport that shows:

- Boundaries and proposed additions to all areas owned or controlled by the sponsor for airport purposes;
- The location and nature of existing and proposed airport facilities and structures;
- The location on the airport of existing and proposed non-aviation areas and improvements thereon.

Another important aspect of airport planning at the local level is coordination of airport planning and local land use planning in order to ensure that surrounding land uses are compatible with airport activities and vice versa. On one hand, the noise associated with airports often makes them locally undesirable land uses for residents and on the other hand, the growth of airports

can be limited by the surrounding land uses, especially in developed areas.

Improvements to Gastonia Municipal Airport

In May 2017, the City of Gastonia was notified of a grant approval to fund safety sensitive projects and a Runway Realignment Alternatives and New Airport Site Selection Analysis. Projects and costs can be found in **Table 14-4**.

Table 14-4. Gastonia Municipal Airport Grant Funding

PROJECT NAME	COST
Corporate Hangar Taxiway, Fuel Farm Drive and Taxi Lane Rehabilitation (including Automatic Fueling Station)	\$989,990
Taxiway Lighting and Signage	\$527,956
Runway Realignment Alternatives and New Airport Site Selection Analysis	\$200,000
Total	\$1,717,946

CORPORATE HANGAR TAXILANE REHABILITATION, FUEL FARM DRIVE REHABILITATION/SELF-SERVE AV-GAS TANK/DISPENSER, AND TAXILANE PAVEMENT REHABILITATION

This project includes the pavement rehabilitation of the Corporate Hangar Taxilane Pavement. Improvements also include a pre-fabricated Self-Serve AV-Gas dispenser and 10,000 gallon storage tank.

Based on the NC Division of Aviation's latest Pavement Management Inspection Report, the Corporate Hangar Taxilane Rehabilitation (Taxilane D) no PCI rating was provided. However, visual observation of this taxilane reveals multiple pavement distresses and this taxilane is in need of rehabilitation to restore its function for the hangars it currently serves, as well as future hangars to be served adjacent to this taxilane.

TAXIWAY LIGHTING AND SIGNAGE

Medium Intensity Taxiway Lights (MITL) and Airfield Guidance Signs for Taxiway System are needed to enhance safety for night time and low visibility operations. The Airport currently has no taxiway edge light system or lighted taxiway guidance signs.



RUNWAY REALIGNMENT ALTERNATIVES AND NEW AIRPORT SITE SELECTION ANALYSIS

This feasibility study will serve to:

- Evaluate runway realignment alternatives at the Gastonia Municipal Airport to fulfill the objectives of the North Carolina Airport System Plan Update for a 5,000-foot long runway.
- Perform a preliminary siting study for the possible location of a new airport site in Gaston County.

The construction of new general aviation civilian airports is almost always initiated at the local or regional level, typically by a City, County, Town, Authority, or Commission (the proposed airport “sponsor”). The Federal Aviation Administration (FAA) and North Carolina Department of Transportation Division of Aviation (NCDOT-DOA) will support and consider providing funding for planning, land acquisition, and construction of new civilian airports, but will not initiate or require the development of airports. NCDOT-DOA will provide funding through the non-primary entitlement (NPE) program for the Feasibility Study requested by the City of Gastonia.

The City of Gastonia was also approved for \$122,000 in maintenance improvements to be completed under the DOA maintenance contract. These projects include:

- Beacon painting
- Crack seal and rejuvenate apron and hangar areas
- Install reflectors around grass island
- Crack seal runway
- Clean runway markings and apply fresh paint



Regional Issues

Situated less than five miles east of Gaston County and the GCLMPO boundary, the Charlotte Douglas International Airport (CLT) is the most impactful airport in the region. It has experienced rapid growth over the last few decades and in 2016 was ranked 5th busiest airport in the United States, and 7th busiest in the world. As of September 2017, CLT is the second largest hub for American Airlines after Dallas/Fort Worth International Airport, with service to 161 domestic and international destinations.

Though CLT ranked only 33rd in 2012 in terms of cargo operations, a new intermodal facility has been constructed between two runways

that will facilitate the direct transfer of cargo between trains and trucks. The relocation of this facility from just outside Uptown Charlotte to the airport is intended to spur development of logistics and manufacturing industries around the airport that may eventually be a boon for air cargo shipping as well.

Projects planned for CLT in the immediate future include concourse expansions, an additional food court, additional parking decks, the construction of a fourth parallel runway, and improvements to surface transportation access. Regional airports are shown in **Figure 14-1**.

2045 MTP Aviation projects are included in **Table 14-5**.

Table 14-5. Aviation Projects

MTP ID	STIP ID NUMBER	SPOT ID	SUBMITTING AGENCY	PROJECT SOURCE	PROJECT	DESCRIPTION	2025 COST	2035 COST	2045 COST
2025 HORIZON YEAR									
			Gastonia Municipal Airport	Division of Aviation Minimums	Runway Approach Obstruction Removal	Additional obstruction removal has been identified for FAA Category C approach minimum surfaces. Tree clearing and trimming will be performed in the approach to Runway 3. Also included is additional surveying to verify the additional obstructions before clearing commences, as well as verifying that all trees have been cleared at the completion of construction. Additional survey will be performed to identify obstructions in the Runway 21 approach.	\$257,600	NA	NA
			Gastonia Municipal Airport	Division of Aviation Minimums	Rehabilitate Fuel Farm Drive, Construct Loading Pad and Rehabilitate Taxilane	Rehabilitation of Existing Fuel Farm Drive and Taxilane Poor and Failing Pavements, Construct New Fuel Farm Loading / Offloading Pad for EPA Compliance, and Rehabilitation of Existing Taxilane Poor and Failing Pavement	\$578,190	NA	NA
			Gastonia Municipal Airport	Division of Aviation Recommended	Taxiway Lighting and Signage	MITL and Airfield Guidance Signs for Taxiway System	\$527,956	NA	NA
			Gastonia Municipal Airport	Division of Aviation Recommended	Corporate Hangar Taxiway	Rehabilitation of Existing Corporate Hangar Taxilane	\$411,800	NA	NA
AV-5849			Shelby-Cleveland County Regional Airport	Division of Aviation Recommended	Land Easements for Runway Extension	Approximately 55.3 acres of avigation easement needs to be acquired for the future runway extension that are not currently under control by the City of Shelby. Obstruction clearing will also be included in this project.	\$863,000	NA	NA
AV-5849			Shelby-Cleveland County Regional Airport	Division of Aviation Recommended	Runway Overlay	The existing runway pavement is showing signs of wear and large longitudinal cracks are present. The current and potential increased usage by heavier aircraft will continue to deteriorate the runway pavement. This project will address the existing cracking/aging and prolong the life of the pavement.	\$2,003,000	NA	NA
AV-5849			Shelby-Cleveland County Regional Airport	Division of Aviation Recommended	Land Acquisition & Easement Runway 5 & 23 RPZ	Efforts are underway to secure the properties with funding already in place. Should this not be successful a supplement will be required.	\$200,000	NA	NA
AV-5849			Shelby-Cleveland County Regional Airport	Division of Aviation Recommended	Extend Runway to 5,500 Feet	The existing runway length is 5,000 feet and the recommended runway length for “blue” group airports is 5,500 feet. This project includes extending the runway 5 end a distance of 500 feet, along with a corresponding extension of the parallel taxiway to the new runway end. Also included is a 150 foot wide by 300 foot long extended runway safety area beyond the new runway end.	\$3,500,000	NA	NA
AV-5755			Lincolnton-Lincoln County Regional Airport	NA	Obstruction Survey - Runway 5 Approach - 30:1 Surface	Perform a survey for the approach to Runway 5 to locate obstructions in the 30:1 approach surface.	\$20,000	NA	NA
AV-5755			Lincolnton-Lincoln County Regional Airport	NA	Land Acquisition - Runway 5 Approach - 30:1 Surface	Acquire land/avigation easements needed to remove obstructions observed in the obstruction survey.	\$156,000	NA	NA
AV-5755			Lincolnton-Lincoln County Regional Airport	NA	Obstruction Removal - Runway 5 Approach - 30:1 Surface	Remove obstructions in the 30:1 approach surface of Runway 5.	\$315,000	NA	NA
AV1	A171687		Shelby-Cleveland County Regional Airport	Division of Aviation Recommended	Perimeter Fence	Perimeter Fencing will be constructed on the northern side of the airport property and tie to existing fencing to encompass all the airport property.	\$241,000	\$276,833	\$337,458
AV2	A174688		Gastonia Municipal Airport	Airport Requested Projects	Terminal Area Development Plan	A plan is needed to identify efficient development of the terminal area portion of the airport.	\$65,000	\$74,665	\$91,016
AV3	A150349		Gastonia Municipal Airport	Airport Requested Projects	Hangar Development Area	Site preparation for expansion of Hangar Area (5 hangars, 2 corporate)	\$415,000	\$476,705	\$581,100
AV4	A171694		Gastonia Municipal Airport	Airport Requested Projects	New Terminal Building	Construct 3,000 SF terminal building and parking lot	\$600,000	\$689,211	\$840,145
AV5	A171695		Shelby-Cleveland County Regional Airport	Division of Aviation Minimums	Update Airport Layout Plan	Update Airport Layout Plan and Airport Layout Drawings to reflect forecasts and future improvements.	\$200,000	\$103,382	\$126,022

NOTE: Projects committed in the 2018-2027 STIP are shown in bold. Committed DOA projects are shown in bold italics.

Table 14-5. Aviation Projects (Continued)

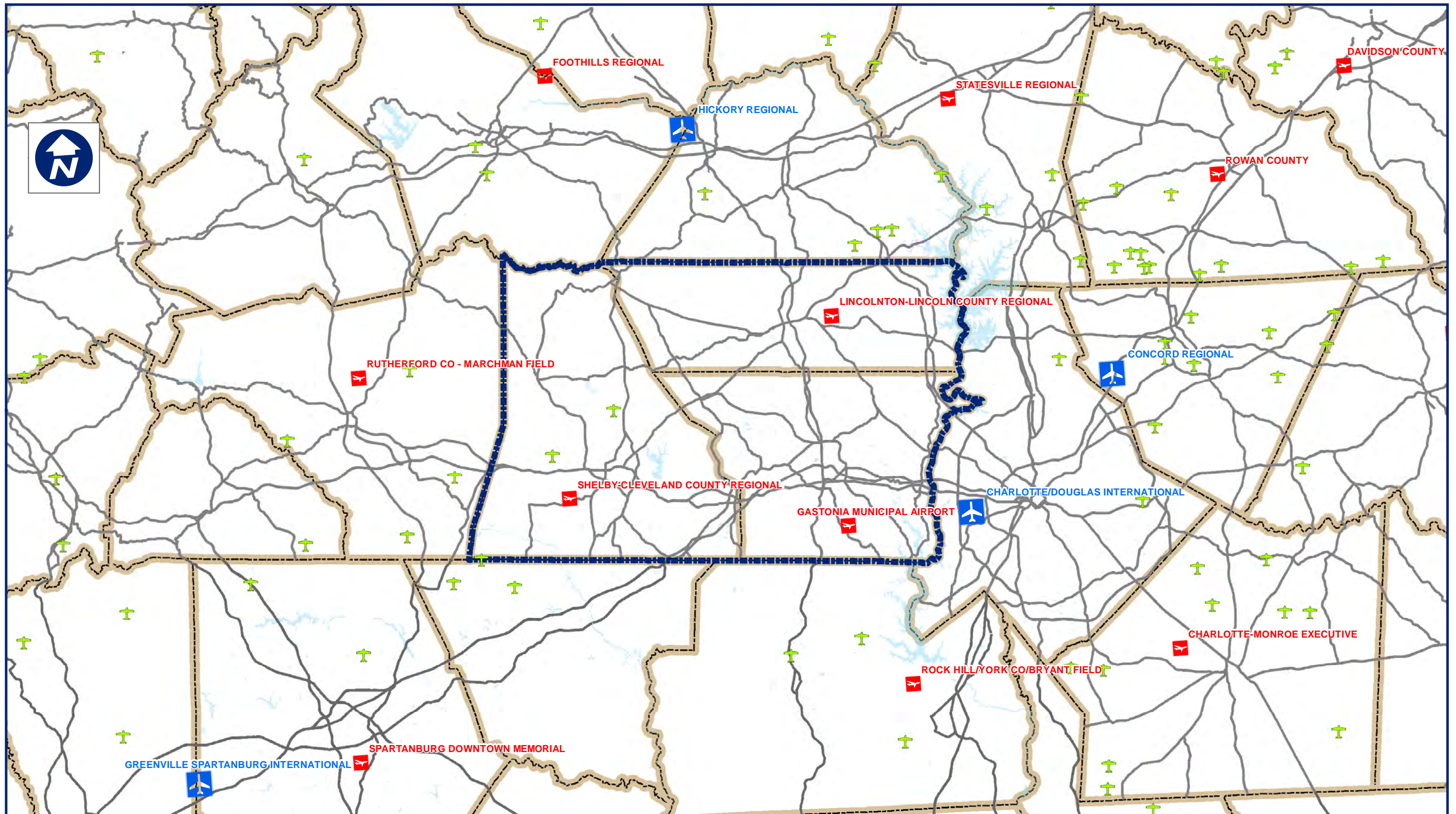
MTP ID	STIP ID NUMBER	SPOT ID	SUBMITTING AGENCY	PROJECT SOURCE	PROJECT	DESCRIPTION	2025 COST	2035 COST	2045 COST
AV6		A171697	Shelby-Cleveland County Regional Airport	Division of Aviation Recommended	Environmental Assessment	An environmental assessment must be performed requesting a FONSI for a runway extension prior to the construction of the runway, extended runway safety area and parallel taxiway extension. Preliminary engineering of the runway extension, runway safety area and parallel taxiway extension will coincide with the study to properly asses all impacts. This will greatly benefit the airport users who routinely file and fly instrument procedures.	\$400,000	\$459,474	\$560,097
AV7		A171842	Shelby-Cleveland County Regional Airport	Airport Requested Projects	North Taxilane and Hangar Development - Phase II	This project includes site preparation and paving of the hangar development on the northern side of the terminal area. Future construction will allow for 2 box hangars.	\$250,000	\$287,171	\$350,060
AV8		A171700	Shelby-Cleveland County Regional Airport	Airport Requested Projects	CAP Hangar Relocation and Parking Improvements	This project includes relocation of the existing CAP Hangar and construction of parking improvements in this area.	\$416,000	\$477,853	\$582,500
AV9		A171840	Lincolnton-Lincoln County Regional Airport	NA	Terminal Area Expansion - Phase 1 (Site Prep)	In order for the Airport to be able to attract and accommodate additional based aircraft with new corporate hangars, the existing terminal area must be expanded to the west. With the new Terminal Building completed, the expansion of the terminal area will be critical for further growth. The area designated in this phase consists of the site preparation for additional corporate hangar taxilanes on the south side of the future corporate hangar sites (see below for paving of corporate taxilane). This project is considered by the Airport Authority to be of significant economic impact to the airport and favorable funding consideration is respectfully requested.	\$1,375,000	\$1,579,443	\$1,925,332
AV10		A171832	Lincolnton-Lincoln County Regional Airport	NA	Terminal Area Expansion - Phase 1 (Paving)	A new corporate taxilane is needed to provide access to new corporate hangar sites made available by the terminal area expansion described in the previous item above. This project includes paving the taxilanes made available by the terminal area expansion site preparation described in the previous item. This will provide significant positive economic impact to the airport	\$1,153,000	\$1,324,435	\$1,614,478
AV11		A171844	Lincolnton-Lincoln County Regional Airport	NA	Terminal Area Expansion - Phase 2 (Site Prep)	This is a continuation of the Terminal Area Expansion Site Preparation-Phase 1 work proposed above. The work proposed for Phase 2 includes the area north of Phase 1.	\$1,563,000	\$1,795,396	\$2,188,577
AV12		A171846	Lincolnton-Lincoln County Regional Airport	NA	Terminal Area Expansion - Phase 2 (Paving)	A new corporate taxilane is needed to provide access to new corporate hangar sites made available by the terminal area expansion described in the previous item above. This project includes paving the taxilane made available by the terminal area expansion site preparation described in the previous item. This will provide significant positive economic impact to the airport	\$1,486,000	\$1,706,947	\$2,080,759
2035 HORIZON YEAR									
AV13		A171717	Gastonia Municipal Airport	Airport Requested Projects	Security Fencing	Install Security Fence Around Perimeter of Airport	\$356,000	\$408,932	\$498,486
AV14		A171719	Shelby-Cleveland County Regional Airport	Division of Aviation Recommended	Apron Rehabilitation	The northeast apron near the fuel farm and maintenance hangar has significant pavement damage and is need of repair. This damage includes severe alligator cracking which has created a FOD issue. This area of the apron has not been included in the pavement management inspection report, but would likely be rated in fair condition at best. This project will include a milling and replacement of the existing pavement.	\$241,000	\$276,833	\$337,458
AV15		A171720	Shelby-Cleveland County Regional Airport	Airport Requested Projects	Airfield Maintenance Equipment	Airfield Maintenance Equipment including Tractor, mowers and a Storage Building.	\$120,600	\$138,531	\$168,869
AV16		A171721	Lincolnton-Lincoln County Regional Airport	NA	New Fuel Farm	The existing fuel farm is over 15 years old. The typical life expectancy of aviation fuel tanks is approximately 15 years. Additionally, special tanker trucks are required to deliver fuel due to restricted piping for delivery. New EPA regulations require secondary containment for the loading and offloading pad where the tanker truck parks to deliver fuel and the Airport re-fueler trucks park to pick up fuel. A new fuel farm is proposed to address these issues.	\$750,000	\$861,514	\$1,050,181
AV17		A171723	Lincolnton-Lincoln County Regional Airport	NA	South Development Area	This project will extend the taxilane off of the south end of the apron and add an additional corporate/transient hangar.	\$650,000	\$746,646	\$910,157
AV18			Lincolnton-Lincoln County Regional Airport	NA	New Helicopter Parking Areas	Due to increased demands from helicopter traffic at the airport, two helicopter parking areas are proposed north of the existitng aircraft parking apron. The parking areas will each consist of a 50-foot by 50-foot concrete pad, with elevated edge lighting and a paved access drive to the aircraft parking apron.	\$195,000	\$223,994	\$273,047
2045 HORIZON YEAR									
AV19		A171726	Gastonia Municipal Airport	Airport Requested Projects	Terminal Building Site Preparation	Site preparation , new water and sanitar sewer extension to serve new terminal building, and relocate/re-furbish rotating beacon	\$386,100	\$443,508	\$540,633
AV20		A130192	Shelby-Cleveland County Regional Airport	Airport Requested Projects	T-Hangar Taxilanes South - Phase I Site Preparation, Paving & Hangar Building	This project includes site preparation of a one proposed and one future T-Hangar building and associated taxilanes and paving and construction for one new 10 Unit T-Hangar building. The development will connect to the existing apron area. An existing Federal Vision grant is being used for the design and bidding.	\$1,841,000	\$2,114,730	\$2,577,844

NOTE: Projects committed in the 2018-2027 STIP are shown in bold. Committed DOA projects are shown in bold italics.

Table 14-5. Aviation Projects (Continued)

MTP ID	STIP ID NUMBER	SPOT ID	SUBMITTING AGENCY	PROJECT SOURCE	PROJECT	DESCRIPTION	2025 COST	2035 COST	2045 COST
2045 HORIZON YEAR (CONTINUED)									
AV21		A171730	Shelby-Cleveland County Regional Airport	Airport Requested Projects	North Taxilane and Hangar Development - Phase I	This project includes site preparation and paving of a taxilane and hangar development on the northern side of the terminal area. Future construction will allow for 2 box hangars.	\$1,200,000	\$1,378,423	\$1,680,290
AV22		A171731	Shelby-Cleveland County Regional Airport	Airport Requested Projects	T-Hangar Taxilanes South - Phase IA Paving & Hangar Building	This project includes construction of one new 10 Unit T-Hangar building and paving of associated taxilanes.	\$856,000	\$983,275	\$1,198,607
AV23		A130198	Shelby-Cleveland County Regional Airport	Airport Requested Projects	Airport Entrance Road	This project includes the demolition and reconstruction of the airport entrance and portions of highway 150. The improvements will eliminate the existing unsafe skewed intersection replacing it with a 90 degree intersection while maintaining the appropriate sight distances.	\$648,000	\$744,348	\$907,356
AV24		A171858	Shelby-Cleveland County Regional Airport	Airport Requested Projects	T-Hangar Taxilanes South - Phase II Site Preparation & Paving	This project includes site preparation and paving for additional Hangar development and access. Development will consist of box Hangars or T-Hangars as demand dictates.	\$1,645,000	\$1,889,588	\$2,303,397
AV25		A171735	Lincolnton-Lincoln County Regional Airport	NA	Common Transient Hangar	Build a new hangar to house transient aircraft and another tenant.	\$640,000	\$735,159	\$896,155
AV26		A171736	Lincolnton-Lincoln County Regional Airport	NA	Self Serve AV-Gas Facility	A new 10,000 Gallon Self Serve AV-Gas Facility is proposed to provide 24-hour self-service for AV-Gas customers.	\$425,000	\$488,191	\$595,103
AV27		A171737	Shelby-Cleveland County Regional Airport	Airport Requested Projects	Localizer Antenna & MALSR	Install a Localizer Antenna and MALSR for runway 5 approach. This will be constructed concurrently with the Runway Extension.	\$1,560,000	\$1,791,950	\$2,184,377

NOTE: Projects committed in the 2018-2027 STIP are shown in bold. Committed DOA projects are shown in bold italics.



LEGEND Highways Major Roads MPO Area Municipalities Counties Regional Waters	Commercial Service Airports General Aviation Airports	Private Airports	 GASTON-CLEVELAND-LINCOLN MPO Metropolitan Planning Organization Date created: 1/9/18	Figure: 14-1 GCLMPO Regional Airports 2045 METROPOLITAN TRANSPORTATION PLAN
	General Aviation Airports			

The movement of goods via truck, rail, and air is essential to the economy of North Carolina. In 2016, the Centralina Council of Governments (CCOG), in cooperation with the GCLMPO and other regional partners in the 14-county Greater Charlotte Bi-State Region, analyzed the existing freight conditions and most pressing needs in order to develop the Greater Charlotte Regional Freight Plan (Freight Plan). The highlights of this plan are discussed in this chapter, and the Freight Profile for the GCLMPO planning area is included in its entirety in **Appendix E**.

Freight goals for the Charlotte region were established after reviewing the National Freight Policy goals, NCDOT and SCDOT Long Range Transportation Plan goals, regional MPO plan goals, and local transportation plans. A set of objectives were developed to articulate the Freight Plan goals, help define freight transportation system needs, and identify the desired future performance of the freight network.

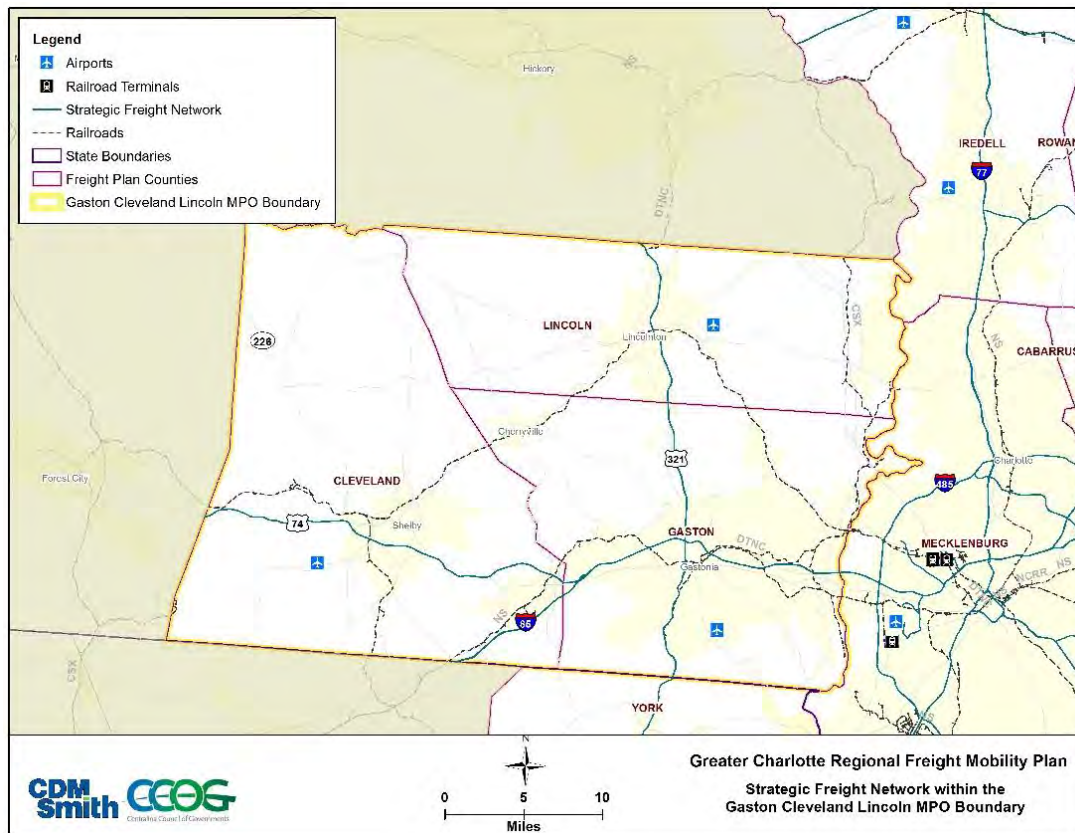


Table 15-1. Freight Plan Alignment with Federal Goals

GREATER CHARLOTTE REGIONAL FREIGHT PLAN GOALS	NATIONAL MULTIMODAL FREIGHT POLICY GOALS	NATIONAL FREIGHT HIGHWAY PROGRAM GOALS
Economic Competitiveness and Efficiency	•	•
Safety and Security	•	•
Infrastructure Preservation and Maintenance	•	•
Environmental Stewardship	•	•
Congestion and Reliability	•	•
Performance and Accountability	•	•
Regional Coordination		•

The Fixing America's Surface Transportation (FAST) Act establishes a national policy of maintaining and improving the condition and performance of a multi-modal freight network at the national level, as well as establishes a program to increase the efficiency of freight movement on the nationally identified freight network. FAST Act specifies goals related to the condition, safety, security, efficiency, productivity, resiliency, and reliability of the freight network, and to reduce adverse environmental impacts of freight movement. In addition, the development of comprehensive freight plans are encouraged by FAST Act to understand and improve the condition and performance of the freight network. **Table 15-1** describes how the Freight Plan goals align with federal goals.

Figure 15-1. GCLMPO Strategic Freight Network



Regional Strategic Freight Network

The regional freight network is comprehensive and provides good connectivity and access to major industries within GCLMPO's planning area. The Regional Strategic Freight Network (SFN) is a system of infrastructure critical to the successful movement of freight. For the purposes of the Freight Plan, the SFN serves as the network around which the region currently moves freight and plans to continue to support safe, efficient movement of freight into the forecast plan years. Within the GCLMPO, the SFN includes all modes of freight. In partnership with the Technical Coordinating Committee, the following criteria were used to finalize the roadway and other modal components of the SFN:

- Highways
 - Those on the National Multimodal Freight System (NMFS) and/or all Interstates
 - Those designated as truck routes by NCDOT
 - Approved Intermodal Connectors on the National Highway System
 - Those identified by planning agencies as critical to local freight movement
- Railroads
 - All active freight railroads
 - All active intermodal rail terminals
- Aviation
 - All commercial service airports

The Strategic Freight Network within the GCLMPO Area is shown in **Figure 15-1**.

EXISTING CONDITIONS

The Freight Plan includes an extensive review of the existing conditions of the freight network. It includes the following highlights, by mode:

Trucking:

- Within the GCLMPO, I-85 is a critical freight corridor for the region. Other interstates that carry the bulk of the regions daily truck traffic are I-77, I-485, US 74, US 321, NC 160 (near the Charlotte-Douglas airport), and SC 9 through Chester and Lancaster, SC.
- There are a number of bridges that have been deemed as structurally deficient or functionally obsolete along the Strategic Freight Network.
- Gaston County has been identified as having a high number of vehicle crashes, especially at I-85 and US 321, and US 74 and US 321.
- Bicycle routes intersect the Strategic Freight Network within Gaston and Lincoln counties.
- Freight corridors and land use patterns were studied to examine opportunities to improve safety and also for new infill, industrial development. The Freight Plan contains detailed information regarding these opportunities.

Rail:

- Norfolk Southern (NS) and CSXT have key rail corridors and intermodal yards within the GCLMPO.
- For NS, the Main Line operating through Kannapolis, Charlotte, and Gastonia serving the Charlotte-Douglas International Airport's Intermodal Terminal is one of the busier corridors along the east coast.
- Grains, coal, and chemicals make up the bulk of the regional rail tonnage.

Air:

- There are 2 commercial service airports and 12 general aviation airports located in the Greater Charlotte Region.
- Shelby-Cleveland County Regional, Lincoln County Regional, and Gastonia Municipal are the three general aviation airports in the GCLMPO planning area.
- Though small in volume, airborne freight has by far the highest value per ton of any mode. Typical commodities include goods from the pharmaceutical, automotive, and high-tech manufacturing sectors as well as the consumer parcel delivery services.

Future Regional Commodity Flows

This section provides an overview of the key freight flow forecasts for goods moving to, from, and within the Greater Charlotte Bi-State region by domestic mode and commodity type. Additional freight trends are documented in the Freight Profile in **Appendix E**.

- Total freight tonnage from, to and within the Charlotte region is projected to increase 35 percent from 2015 to 2045, or at a compound annual growth rate of 1.1 percent per year. In 2015 about 95 percent of total freight tons were domestic, and these volumes are projected to grow by 30 percent from 2015 to 2045.
- Inbound freight tonnage in 2015 through 2045 is larger than outbound freight due to natural gas transported into the region by pipeline. However, trucking is the largest mode of transportation for both inbound and outbound flows for both tons and value, and for this large segment of freight, outbound volumes exceed inbound from 2015 through 2045.

- Freight transported by air represents a small portion of tons moved inbound or outbound from the Charlotte region, but it is expected to be the largest mode in terms of growth in value – 176 percent growth in inbound value from 2015 to 2045 and 350 percent growth in outbound value over that period. Top product groups transported by air include electronics, machinery, pharmaceuticals, precision instruments, and chemical products.
- Origins of inbound freight and destinations of outbound freight are concentrated in North Carolina, South Carolina, Virginia, and Georgia. The concentrations in these four states are especially high for tonnage since heavier and lower-valued commodities tend to be transported shorter distances.



Recommendations of the Freight Plan

A series of recommendations were produced for the Freight Plan. One of the key results of the Freight Plan was the identification of recommended policies, programs, and projects that could be implemented in the region to facilitate the movement of freight. These recommendations were identified throughout the planning process and originate from three primary sources; 1) the needs analysis, 2) stakeholder engagement, and 3) a review of best practices in freight planning.

PRIORITIZED PROJECTS

The recommendations most relevant to the GCLMPO portion of the regional network have been identified and are provided in the following sections.

Trucking Related Recommendations

Trucking related recommendations are focused on the mobility and safety of truck activity in the GCLMPO planning area. These recommendations, listed in **Table 15-2**.

Infrastructure improvements are recommended in several locations within GCLMPO. These are primarily sections of highways on the SFN that have been identified at commercial vehicle safety hotspots. While safety, alone, is not typically a reason for a major infrastructure investment, these recommendations are included to further evaluate the causes of crashes, review pavement conditions, and evaluate operational capacity improvements that may enhance the overall performance of the freight network.

Listed as “Not Mapped” because they are not individually labeled are the 31 functionally obsolete and two structurally deficient bridges on the SFN within the GCLMPO. The recommendation is to address and prioritize functionally obsolete and structurally deficient bridges on the region’s SFN to preserve the infrastructure of the freight network.

Rail Related Recommendations

Rail related recommendations are focused on the mobility and safety of rail based activity in the study area. These recommendations, presented in **Table 15-3**, have the potential to benefit other modes of transport but are primarily railroad-focused.

Funding Strategies

There are a number of funding strategies for freight focused projects. The FAST Act was signed into law on December 4, 2015 and provides updated federal guidance for transportation funding, including freight planning and investment. The FAST Act requires the development of a National Freight Strategic Plan, which includes mechanisms to monitor the conditions and performance of the national freight system.

The new bill increases overall transportation funding by 11 percent over five years, while providing a dedicated source of Federal funding for freight projects, including multimodal projects by establishing both formula and discretionary grant programs to fund projects that would benefit freight movements. Discretionary funding totaling \$4.5 billion over the next five years is included in the bill, and is eligible to States, MPOs, local governments, special purpose districts, and public authorities – including port authorities. An estimated 90 percent of the \$6.3 billion in formula funds in the new freight program will be used for highway projects, leaving up to 10 percent for other modes (ports, railroads, intelligent transportation systems, or better demand management).



The following are examples of Federal Grant and Loan Programs included in the FAST Act:

- TIGER Discretionary Grants
- Congestion Mitigation and Air Quality (CMAQ) program
- Federal Rail Safety Improvement Act of 2008
- Rail Line Relocation and Improvement Capital Grant Program
- Transportation Infrastructure Finance and Innovation Act (TIFIA)
- The Railroad Rehabilitation and Improvement Financing Program
- Section 45G Track Rehabilitation Tax Credit
- Airport Improvement Program (AIP)

Table 15-2: Truck Related Recommendations

SOURCE	RECOMMENDATION	NOTES
Stakeholder Feedback	Provide training for truck drivers (CDL Programs-CPCC).	Partner with local training centers to raise awareness and promote training opportunities in the region.
Stakeholder Feedback	Reduce risk to non-motorized transportation users. Clearly sign and mark bicycle and pedestrian facilities where the Strategic Freight Network and state/local bike routes overlap.	GIS operation to overlay bicycle and pedestrian networks with Strategic Freight Network.
Truck Parking Analysis	Identify areas of needed truck parking and rest areas along the region's Strategic Freight Network.	GIS operation illustrating areas where truck parking utilization has exceeded available capacity; site selection study within Corridors and Concentration areas and Strategic Freight Network.
Bridge Inventory, Stakeholder Feedback	Address and prioritize functionally obsolete and structurally deficient bridges on the region's Strategic Freight Network.	31 functionally obsolete and two structurally deficient bridges on SFN within GCLMPO
Stakeholder Feedback	Conduct educational efforts to counter public perception that increases in truck size and weight limits will impact roadway quality and compromise safety.	
Prioritize Stakeholder Feedback	Prioritize incident management for responding to increased congestion, safety issues during highway construction, and impacts of vehicular accidents.	Promote enforcement of North Carolina's "Quick Clearance Law" and South Carolina's "Steer it and Clear it" Law.
Stakeholder Feedback	Program additional transportation funding mechanisms, particularly for highway maintenance and construction.	Focus on identified deficient bridges, "Corridors and Concentrations," and Strategic Freight Network for preservation and expansion of roadway access to major facilities.
Stakeholder Feedback	Program improvements to infrastructure to handle heavy and wide shipments.	Focus on identified deficient bridges, "Corridors and Concentrations," and Strategic Freight Network for preservation and expansion of roadway access to major facilities.
Stakeholder Feedback	Identify and address concerns related to perceived/actual high costs and inability to ship products to the ports.	Partner with NCDOT and SCDOT on statewide and multistate planning efforts to identify pathways connecting the Charlotte region to international marine port terminals
Stakeholder Feedback	Encourage alternative options CNG/LNG for trucks-including fueling stations	Focus on identified "Corridors and Concentrations" for preservation and expansion of roadway access to major facilities. Partner with NCDOT and SCDOT for regionally identified corridors.
Stakeholder Feedback	Participate in the FAST Act Alternative Fuel Corridors program	Partner with Centralina Clean Fuels Coalition, NCDOT and SCDOT on statewide and multistate planning efforts to identify long distance corridors qualifying for federal designation.
Stakeholder Feedback	Continue to Identify and close any first/last mile gaps near major intermodal centers and manufacturing hubs	Focus on identified "Corridors and Concentrations" for preservation and expansion of roadway access to major facilities.
Safety data	Evaluate Crash hotspots identified in densely populated areas such as Gastonia (T15a), Statesville (T15b), Mooresville (T15c), Salisbury (T15d) and Monroe (T15e)	Evaluation of safety improvements possible in operations, capacity, lighting, etc.
Safety data	Evaluate improvements on I85 near Gastonia	Evaluation of safety improvements possible in operations, capacity, lighting, etc.
GCLMPO 2040 MTP, Safety	US74 Corridor through Cleveland County (improvements to capacity, operations and geometric design)	Evaluation needed to address safety, capacity and operational improvements.
GCLMPO 2040 MTP, Safety	I85 Corridor through Gaston County (improvements to capacity, operations and geometric design).	Evaluation needed to address safety, capacity and operational improvements.
GCLMPO 2040 MTP, Safety	US 321 at I85 Interchange Improvement.	Evaluation needed to address safety, capacity and operational improvements.
Stakeholder Feedback	Identify corridors where non-traditional improvements may significantly reduce congestion (e.g. Intelligent Transportation Systems, Managed Lanes, Value Pricing, etc.).	Incorporate this scope of work into corridor improvement planning and concept design.

Table 15-3: Rail Related Recommendations

SOURCE	RECOMMENDATION	NOTES
Stakeholder Feedback	Greater Charlotte Region Traffic Separation Studies (TSS).	At-grade rail crossing studies (TSS): A TSS will evaluate the need for improving the rail at-grade crossings' warning systems or reducing and eliminating at-grade crossing to address potential safety conflicts; thus allowing partnerships with the railroads to prioritize grade crossing improvements.
Stakeholder Feedback	Partner with the development community to identify and find solutions for existing or forecast terminal capacity constraints. Support efficient transfer of bulk commodities such as grain, coal, oil, etc. requires adequate intermodal operations capacity to move goods from production to consumption markets.	Working with the Class I railroads and local stakeholders in ensuring programs and policies are developed to ensure improved operation efficiencies.
Stakeholder Feedback	Support an effort to improve the ability of short line railroads to accommodate 286,000 lb. standard rail cars.	Work with Class I and shortline railroads in changing the weight limits and identifying funding sources to assist in shortline railroads to upgrade rails.
Stakeholder Feedback	Support opportunities for Intermodal terminal development and multimodal diversity.	This includes working with the Class I railroads and local stakeholders to ensure programs and policies are developed to ensure improved operation efficiencies.
Stakeholder Feedback	Retain existing rail corridors and halt track removal.	By ensuring rail corridors stay intact and that adding, not reducing, track improves the efficiency of freight movements on rail, reducing the dependency on long-haul trucking movements.
Stakeholder Feedback	Continue direct support for short-line railroad infrastructure improvements.	Short-line railroads provide local transportation options to industries, thus improves local economic benefits.
Stakeholder Feedback	Explore routing options for hazardous materials shipments to avoid highly populated areas.	By utilizing rail to transport hazardous materials reduces the dependency on long-haul trucking movements and reduces safety hazards along heavily congested urban areas and networks.
Stakeholder Feedback	Expand capacity in high-use rail corridors, including the expansion into double/triple track configurations.	
Stakeholder Feedback	Raise awareness of environmental justice concerns in rail expansions	Implement policies that require NEPA evaluations for mitigating the impacts to EJ communities on new rail corridors, as well as rail corridor improvements.
Stakeholder Feedback	Create rail-focused business parks.	By creating rail-focused business parks, truck and freight movements can be centralized and increase the opportunity for intermodal movements.

STATE FUNDING SOURCES

North Carolina utilizes a variety of revenue sources to build their 10-year State Transportation Improvement Program (STIP). These sources include the state gas tax, the federal fuel tax share, the Highway Use Tax and DMV fees. These sources do not provide enough revenue to meet North Carolina's high levels of growth and demand for infrastructure. All of these revenue sources combined (including the new Strategic Transportation Investments) are only adequate to fund 1 in 5 of the 3,100 projects submitted for the last STIP update. To help meet these needs the state is pursuing alternative funding solutions, such as public private partnerships and bond programs. The Governor proposed two bonds of approximately \$1.4 billion – one to be used for roads and the second for other types of public infrastructure.

NCDOT – Strategic Transportation Investments Law (STI)

In 2013, the Strategic Transportation Investments (STI) law was passed by the North Carolina legislature which provides more funding flexibility to the NCDOT. In addition, the STI also establishes the Strategic Mobility Formula, which is a data-driven scoring process.



Other Transportation Modes



Vehicle for Hire Services

With the cost of owning personal transportation rising, more residents of the GCLMPO area may turn to vehicle for hire services as a major means of transportation. The GCLMPO area has multiple taxi cab service companies. Rates are regulated by the municipalities or counties in which they are located. These companies offer local and long distance service. A number of the taxi companies also run shuttle service to the Charlotte Douglas International Airport.



GASTON COUNTY

- AAA Taxi
707 Grover St, Gastonia
(704) 861-0855
- AAA Taxi
815 E Park Ave, Gastonia
(704) 861-0855
- BLUE CABS OF NC
543 Cox Rd, Gastonia
(704) 674-4457
- Carolina Specialty Transport
438 E Long Ave, Gastonia
(704) 899-5595
- City Cab Company
720 W Airline Ave, Gastonia
(704) 867-4620
- Cook's Cab Company
217 Allison Ave, Gastonia
(704) 868-8181
- Metro Cab
1104 E Ozark Ave, Gastonia
(704) 852-4147
- TnT Personal Transportation Services
Dallas
(704) 215-8149
- Yellow Cab Co of Gastonia
913 W Franklin Blvd, Gastonia
(704) 867-6391

Residents in Gastonia who chose taxi service as a means of transportation are protected under municipal codes which state:

“ a) No person owning or operating a taxi cab within the city limits may charge fares in excess of those prescribed in the schedule of taxicab fares adopted by resolution of the council, a copy of which shall be on file in the clerk's office and shall also be available from the administrator.

CLEVELAND COUNTY

- AA United Cab
220 S Washington St, Shelby
(704) 482-7000
- East Marion Cab Company
211 E Marion St, Shelby
(704) 487-6200
- Ellis Exclusive Transportation
219 S Battleground Ave, Kings Mountain
(704) 466-4946
- Weaver's Taxi
521 Carolina Ave, Shelby
(704) 487-9193
- Your City Taxi Company
518 Carolina Ave, Shelby
(704) 487-9158

LINCOLN COUNTY

- Denver Cab Co
183 Highland Woods Ct, Denver
(704) 308-5459
- Specialized Transport
2380 Industrial Park Rd, Lincolnton
(704) 735-5676
- Yellow Cab of Lincolnton
2380 Industrial Park Rd, Lincolnton
(704) 748-1313

Residents in Lincolnton who chose taxi service are also protected under the City of Lincolnton's Code of Ordinances, Chapter 112, which states:

“It shall be unlawful for any person to maintain and operate a taxicab stand for the parking of taxicabs without first obtaining a license to operate a taxicab from the city.

It shall be unlawful to operate one or more taxicab stands within the corporate limits of the city without having the proper taxicab license from the city and without charging and collecting the rates as prescribed by the city.

No person shall operate a motor vehicle as a taxicab until the vehicle has been registered in accordance with requirements in this state and all proper licenses have been obtained therefor from the city and state.



LYFT AND UBER

Lyft and Uber are two examples of transportation network companies that predominantly operate through mobile apps. Riders must download the mobile app, sign up, enter a valid phone number, and enter a valid form of payment. Passengers can then request a ride from a nearby driver.

Waterways & Blueways

CATAWBA RIVER

The Catawba River is a tributary of the Wateree River in North Carolina and South Carolina. The river is approximately 220 miles (350km) long. As shown in **Figure 16-1**, it rises in the Appalachian Mountains and drains into the Piedmont and is impounded through a series of reservoirs for flood control and hydroelectricity. The river is named after the Catawba tribe of Native Americans. They were known in their own language as the Kawahcatawbas, “the people of the river”.

It rises in the Blue Ridge Mountains in western McDowell County, North Carolina, approximately 20 miles (30 km) east of Asheville. It flows ENE, forming, along with the Linville River, Lake James. It then passes north of Morganton, then southeast through the Lake Norman reservoir. From Lake Norman it flows south, passing east of Gaston County and west of Charlotte, then flowing through the Mountain Island Lake and

Lake Wylie reservoirs, where it forms approximately 10 miles (15km) of the border between North Carolina and South Carolina. It flows into northern South Carolina, passing Rock Hill, then through Fishing Creek Reservoir near Great Falls, and then into the Lake Wateree reservoir, approximately 30 miles (50 km) northeast of Columbia, where it becomes the Wateree River.

SOUTH FORK CATAWBA RIVER

The South Fork Catawba River (locally known as the South Fork River) begins just south of Hickory, NC and travels 48.5 miles through Lincoln and Gaston counties where it feeds into the Catawba River at Lake Wylie. The river offers miles of natural landscapes, with great fishing and paddling opportunities.

The South Fork Catawba River is home to a variety of wildlife, including great blue herons, osprey, bald eagles, and deer. Users who access the river from the Spencer Mountain River Access will paddle through some of the most ecologically diverse lands in our region, many of which are permanently protected by the Conservancy.

THE BROAD RIVER AND FIRST BROAD RIVER IN CLEVELAND COUNTY

The Broad River originates in the Blue Ridge Mountains of eastern Buncombe County, North Carolina and flows generally south-southeastwardly, through or along the boundaries of Rutherford, Polk and Cleveland Counties in North Carolina; and Cherokee, York, Union, Chester, Fairfield, Newberry and Richland Counties in South Carolina. In North Carolina, the river is dammed to form Lake Lure; Principal tributaries of the Broad River include the Green, Second Broad and First Broad (Cleveland County) Rivers in North Carolina.

BLUEWAYS

A blueway or water trail is a water path or trail that is developed with launch points, camping locations and points of interest for canoeists, paddle boarders and kayakers. Blueways are typically developed by state, county or local municipalities to encourage recreation, ecological education and preservation of wildlife resources.

Figure 16-1. Catawba River Chain



Developed as Carolina Thread Trail projects in Gaston, Cleveland, and Lincoln counties, various blueways have a number of boat launches located along the South Fork, Catawba, and First Broad Rivers.

Catawba Lands Conservancy opened a canoe and kayak access point on the South Fork Catawba River in May 2009 called the Spencer Mountain River Access. The trip down to the R.Y. McAden River Access take out point is approximately 2 hours, 5.5 miles.

River stream features vary from slow moving water with a few Class I/II rapids where rock ledges have been carved from the river bottom to concentrated rapids at approximate mile 3.5. There is a dam approximately 5.5 miles down the river - users must exit the river on the right (river right) before the dam. Those continuing downstream can use the Adam Springs Portage on the left. Downstream from the dam, paddlers will encounter the headwaters of Lake Wylie which is slower moving water and a number of rich wetlands along the stream banks.

Available launch locations along the South Fork River Blueway in Gaston County include:

- **Spencer Mountain River Access**
(Catawba Lands Conservancy)
261 Stanley-Spencer Mountain Road,
Spencer Mountain
**Special note: The Spencer Mountain River Access is by permit only. A permit can be requested by contacting the Catawba Lands Conservancy.*
- **South Fork River Park**
(Gaston County Parks and Recreation)
4185 Mountain View Street, Gastonia
- **R. Y. McAden Take-out**
(Catawba Lands Conservancy)
119 Willow Drive, McAdenville
- **South Fork Village**
(Town of Cramerton)
2000 Rivers Edge Drive, Belmont
- **C.B. Huss River Access**
(Town of Cramerton)
382 11th Street, Cramerton

- **Goat Island Park**
(Town of Cramerton)
141 8th Avenue, Cramerton
- **Centennial Center**
(Town of Cramerton)
100 Center Street, Cramerton
- **Riverside Park**
(Town of Cramerton)
Riverside Drive, Cramerton
- **Baltimore River Access**
(Town of Cramerton)
301 Cramer Mountain Road, Cramerton

Available launch locations along the Catawba River Blueway in Gaston County include:

- **Mountain Island Park**
(City of Mount Holly)
400 Mountain Island Road, Mt. Holly
- **River Street Park**
(City of Mount Holly)
300 N River Street, Mt. Holly
- **Tuckasee Park**
(City of Mount Holly)
165 Broome Street, Mt. Holly

Available launch locations along the South Fork River Blueway in Lincoln County include:

- **Ramsour's Mill Battlefield**
(Lincoln County)
402 Jeb Seagle Drive, Lincolnton

Available launch locations along the First Broad River Blueway in Cleveland County include:

- **First Broad River Trail Access**
(City of Shelby)
940 W Grover Street, Shelby



Appendix A:

Performance Management

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NCDOT Safety Performance Targets

Background

Target Reporting Dates:

- State: August 31st with annual HSIP report
- MPOs: 180 days after the State sets/adjusts its targets

How are targets set?

- Up to each State and MPO
 - MPO can adopt State targets, or come up with their own

Assessment of Significant Progress

- FHWA will determine whether a State DOT has met or made significant progress toward meeting safety targets
- FHWA will not directly assess MPO progress towards meeting safety targets

State Safety Performance Targets

Goal: Reduce fatalities and serious injuries by 2030

Target: Where do we need to be in 2018 (current target setting year) to reach this goal by 2030?

- 5 year rolling average of fatalities in 2013 = 1,290
- To reduce fatalities by 50% in 2030 = 645
- 5 year rolling average of fatalities in 2016 = 1,340.6

Baseline 2012-2016	$1,340.6 \times (1 + -0.0510)^0$	=	1,340.6
2017	$1,340.6 \times (1 + -0.0510)^1$	=	1,272.2
2018 Fatality Target	$1,340.6 \times (1 + -0.0510)^2$	=	1,207.3

Resources

Safety Performance Management Resources

<https://safety.fhwa.dot.gov/hsip/spm>

North Carolina Strategic Highway Safety Plan

<http://ncshsp.org/>

MPO / RPO Crash Data

<https://connect.ncdot.gov/resources/safety/Pages/Crash-Data.aspx>

Frequently Asked Questions: Safety Performance Management Measures Final Rule

https://safety.fhwa.dot.gov/hsip/spm/safety_pm_fs.cfm

Table A-1: NCDOT 2018 Highway Safety Improvement Program (HSIP) Safety Measures

SAFETY PERFORMANCE MEASURES					
YEAR	FATALITIES	FATALITY RATE	SERIOUS INJURIES	SERIOUS INJURY RATE	NON-MOTORIZED FATALITIES AND SERIOUS INJURIES
2008	1,428	1.407	2,773	2.733	428
2009	1,313	1.280	2,480	2.417	358
2010	1,320	1.289	2,281	2.228	399
2011	1,230	1.186	2,368	2.283	405
2012	1,299	1.243	2,279	2.182	472
2013	1,290	1.227	2,117	2.013	406
2014	1,284	1.188	2,194	2.031	411
2015	1,379	1.233	2,422	2.165	437
2016	1,451	1.246	2,987	2.565	468

Source: NCDOT (2018 Safety Data)

Table A-2: NCDOT 2018 Highway Safety Improvement Program (HSIP) Safety Targets

TARGET SETTING CRASH DATA AND 2018 TARGETS					
YEAR	FATALITIES (5 YEAR AVERAGE)	FATALITY RATE (5 YEAR AVERAGE)	SERIOUS INJURIES (5 YEAR AVERAGE)	SERIOUS INJURY RATE (5 YEAR AVERAGE)	NON-MOTORIZED FATALITIES AND SERIOUS INJURIES (5 YEAR AVERAGE)
2008 - 2012	1,318	1.281	2,436	2.369	412
2009 - 2013	1,290	1.245	2,305	2.225	408
2010 - 2014	1,285	1.227	2,248	2.147	419
2011 - 2015	1,296	1.215	2,276	2.135	426
2012 - 2016	1,341	1.228	2,400	2.191	439
2018 Target	1,207.3	1.114	2,161.2	1.988	393.5

Source: NCDOT (2018 Safety Data)

NCDOT Infrastructure Condition Targets

Background

Target Reporting Dates:

- State: Initial targets had to be reported by October 1, 2018 in a baseline performance period report. States must report their established targets (2-year, where applicable, and 4-year) and progress toward achieving those targets in subsequent biennial performance reports. States have the option to adjust 4-year targets at the midpoint of a performance period.
- MPOs: 180 days after the State sets/adjusts its targets

How are targets set?

- Up to each State and MPO
 - MPO can adopt State targets, or come up with their own
- A maximum of 10% of NHS bridges are allowed to be classified as structurally deficient (or poor) over a 3-year period and a maximum of 5% of Interstate pavement is allowed to be classified as in poor condition for any year (excludes bridges, invalid missing data, and non-Interstate NHS pavement)

Assessment of Significant Progress

- FHWA will determine whether a State DOT has maintained minimum condition levels and has made significant progress toward meeting pavement and bridge condition targets
- FHWA will not directly assess MPO progress towards meeting pavement and bridge condition targets

State Pavement & Bridge Condition Targets

Pavement Goal: N/A

Bridge Goal: Reduce the number of structurally deficient bridges by 2030

Resources

Pavement Performance Measures Fact Sheet

<https://www.fhwa.dot.gov/tpm/pubs/PM2PavementFactSheet.pdf>

Bridge Performance Measures Fact Sheet

<https://www.fhwa.dot.gov/tpm/pubs/PM2BridgeFactSheet.pdf>

HPMS Field Manual

<https://www.regulations.gov/document?D=FHWA-2013-0053-0202>

National Bridge Inventory

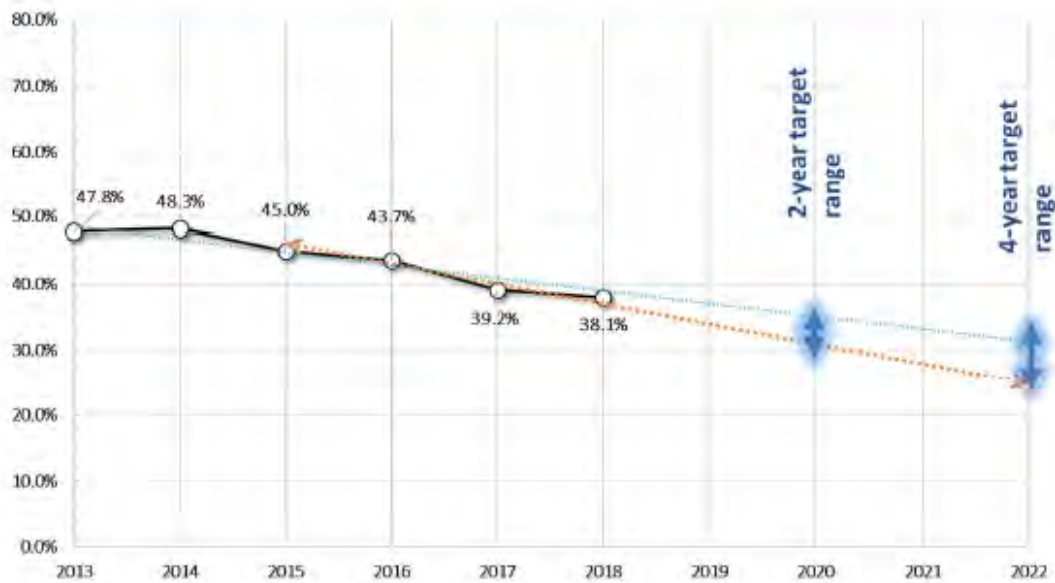
<https://www.fhwa.dot.gov/bridge/nbi.cfm>

Frequently Asked Questions: Pavement and Bridge Condition Performance Measures Final Rule

<https://www.fhwa.dot.gov/tpm/pubs/PM2FAQs.pdf>

NCDOT Infrastructure Condition Targets

Figure A-1: NHS Bridge Deck Area: Percent in Good Condition



Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

Figure A-2: NHS Bridge Deck Area: Percent in Poor Condition



Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

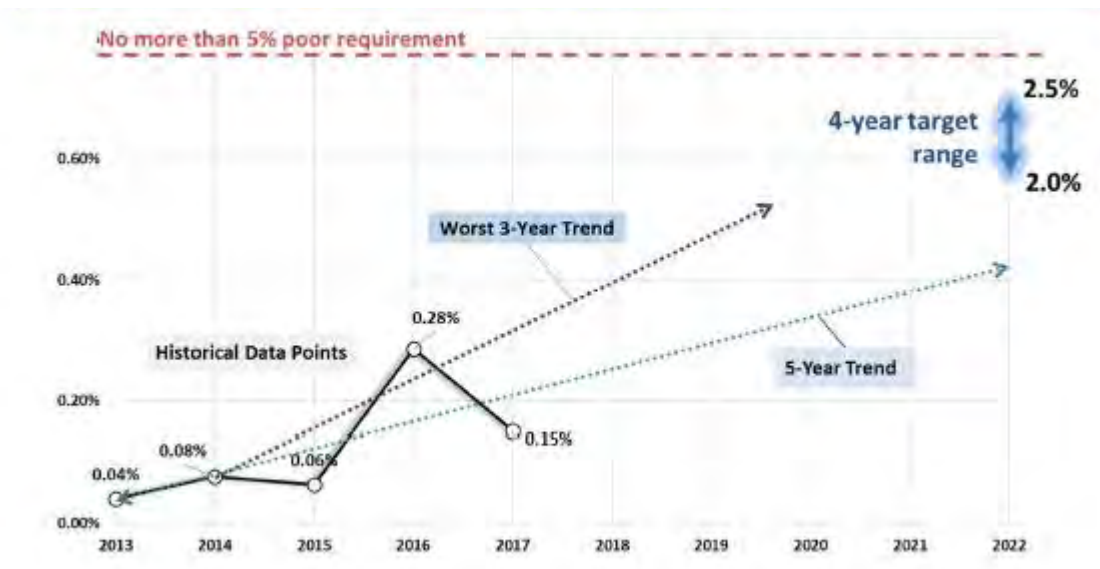
NCDOT Infrastructure Condition Targets

Figure A-3: Interstate Pavement: Percent in Good Condition



Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

Figure A-4: Interstate Pavement: Percent in Poor Condition



Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

NCDOT Infrastructure Condition Targets

Figure A-5: Non-Interstate Pavement: Percent in Good Condition



Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

Figure A-6: Non-Interstate Pavement: Percent in Poor Condition



Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

NCDOT System Performance Targets

Background

Target Reporting Dates:

- State: Initial targets had to be reported by October 1, 2018 in a baseline performance period report. States must report their established targets (2-year, where applicable, and 4-year) and progress toward achieving those targets in subsequent biennial performance reports. States have the option to adjust 4-year targets at the midpoint of a performance period.
- MPOs: 180 days after the State sets/adjusts its targets (except for PHED and non-SOV travel targets which must be set jointly with State)

How are targets set?

- Reliability targets: Up to each State and MPO
 - MPO can adopt State targets, or come up with their own
- Emissions targets: Required for State and MPOs whose geographic boundaries contain all or part of a nonattainment or maintenance area for ozone, carbon monoxide, or particulate matter
 - The MPO target is the cumulative 2-year and 4-year emission reduction estimates for CMAQ funded projects by pollutant within the planning area
 - The State target is the sum of the MPO targets
- Remaining targets: A single, unified 2-year and 4-year target must be set by the State and applicable MPOs in urbanized areas of more than 1 million people (first reporting period) or 200,000 (subsequent reporting periods) in nonattainment or maintenance areas for ozone, carbon monoxide, or particulate matter for PHED and non-SOV travel

Assessment of Significant Progress

- No information published to date

Resources

Reliability Fact Sheet

<https://www.fhwa.dot.gov/tpm/rule/pm3/reliability.pdf>

Freight Fact Sheet

<https://www.fhwa.dot.gov/tpm/rule/pm3/freight.pdf>

PHED Fact Sheet

<https://www.fhwa.dot.gov/tpm/rule/pm3/phed.pdf>

Non-SOV Fact Sheet

<https://www.fhwa.dot.gov/tpm/rule/pm3/nonsov.pdf>

On-Road Mobile Source Emissions Fact Sheet

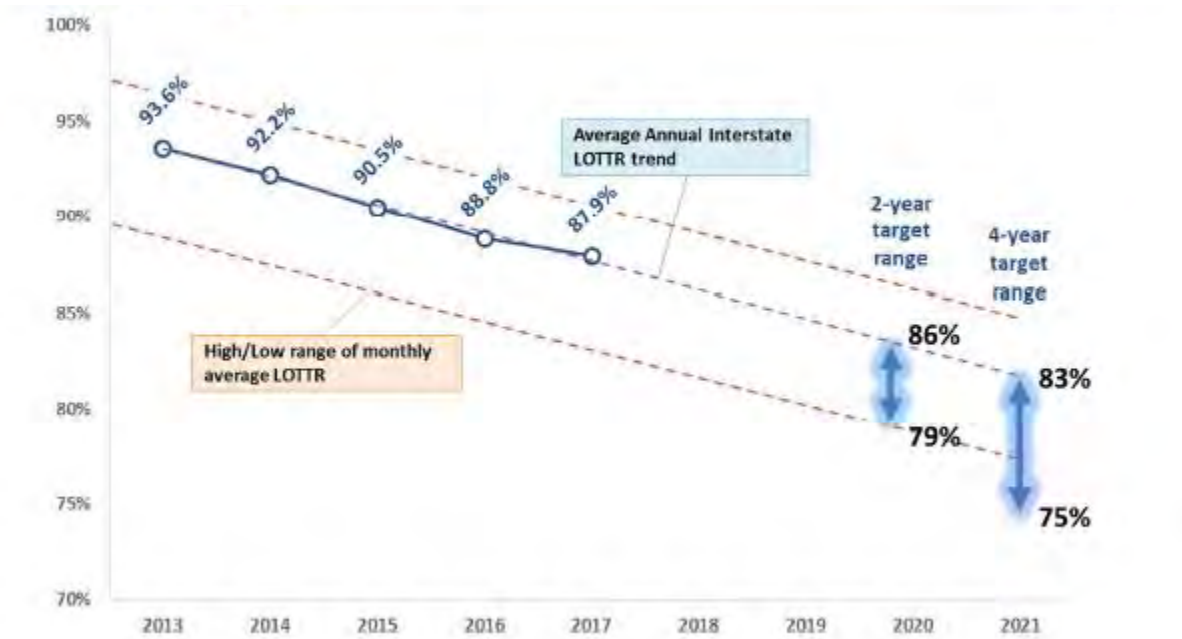
<https://www.fhwa.dot.gov/tpm/rule/pm3/onroadmobile.pdf>

Frequently Asked Questions: System Performance/Freight/CMAQ Performance Measures Final Rule

<https://www.fhwa.dot.gov/tpm/rule/pm3/faqs.pdf>

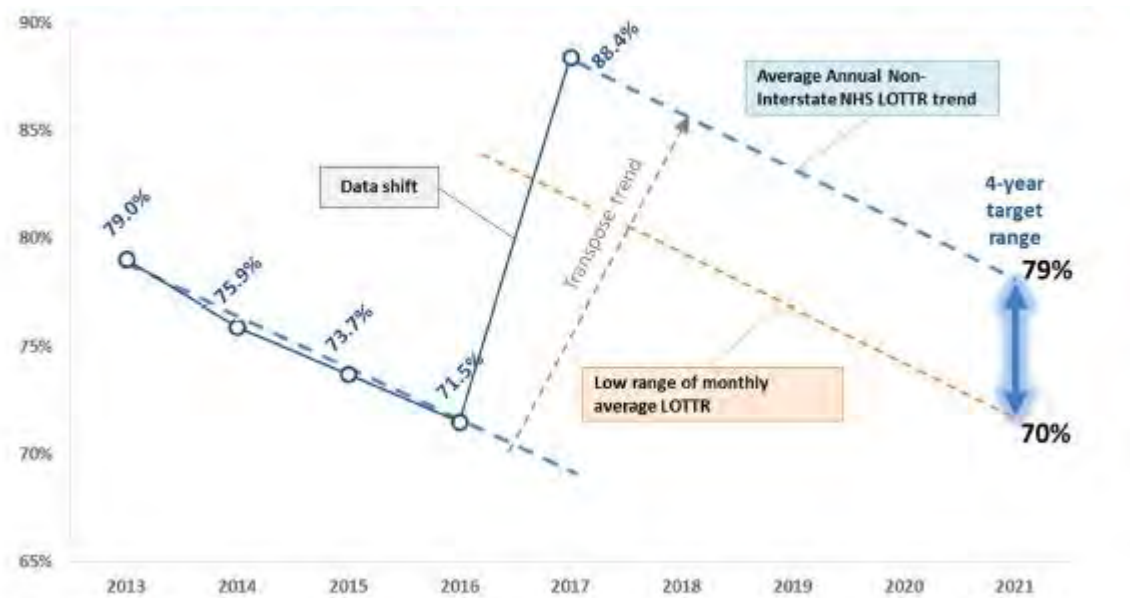
NCDOT System Performance Targets

Figure A-7: Percent of Person Miles Traveled on the Interstate that are Reliable – Trend and Target Ranges



Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

Figure A-8: Percent of Person Miles Traveled on the Non-Interstate NHS that are Reliable – Trend and Target Ranges



Note: 2016 to 2017 data shift a result of NPMRDS vendor change and data expansion, not change in performance.

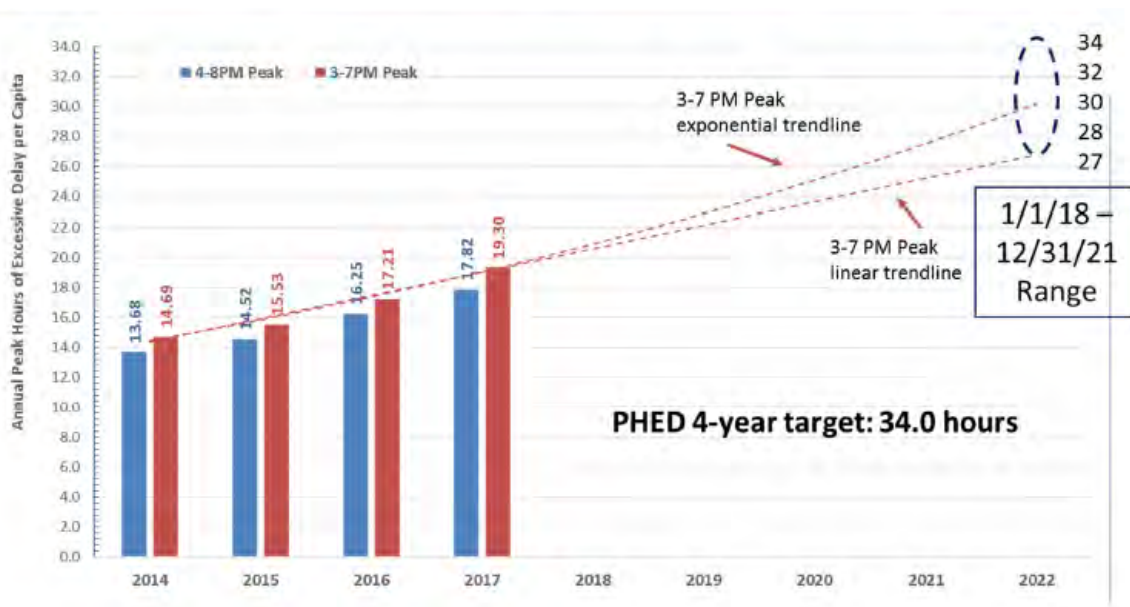
Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

NCDOT System Performance Targets

Figure A-9: Interstate Truck Travel Time Reliability – Trend and Target Ranges

Note: 2016 to 2017 data shift a result of NPMRDS vendor change and data expansion, not change in performance.

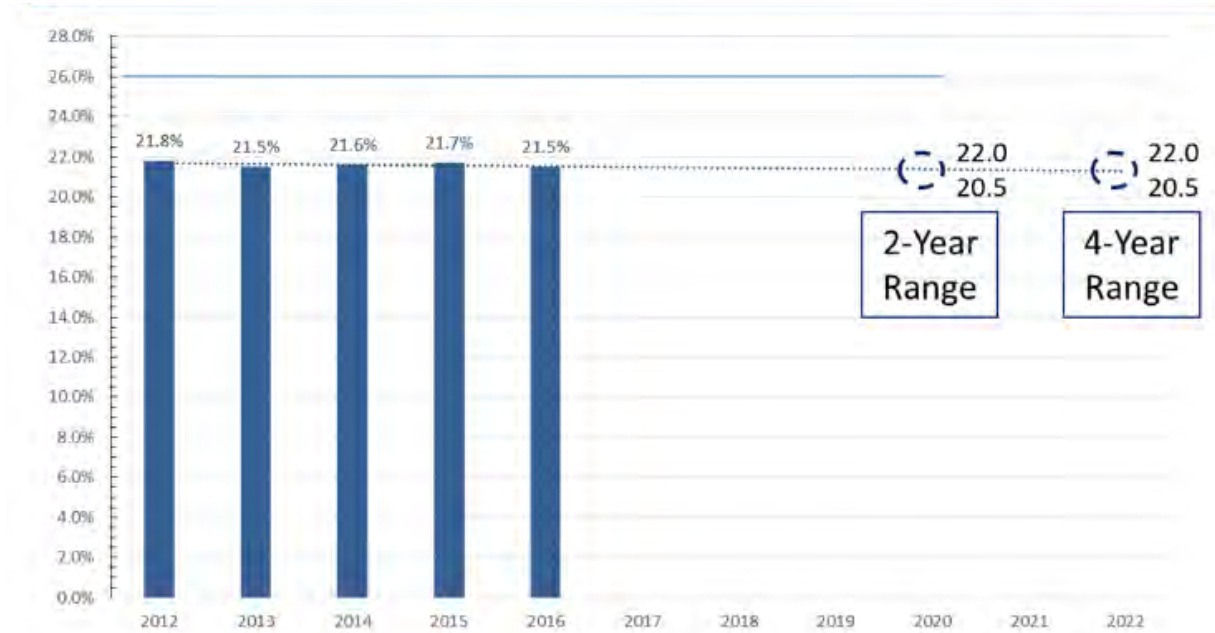
Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

Figure A-10: Recent Trends – Annual Hours of PHED per Capita for the Charlotte, NC - SC UZA

Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

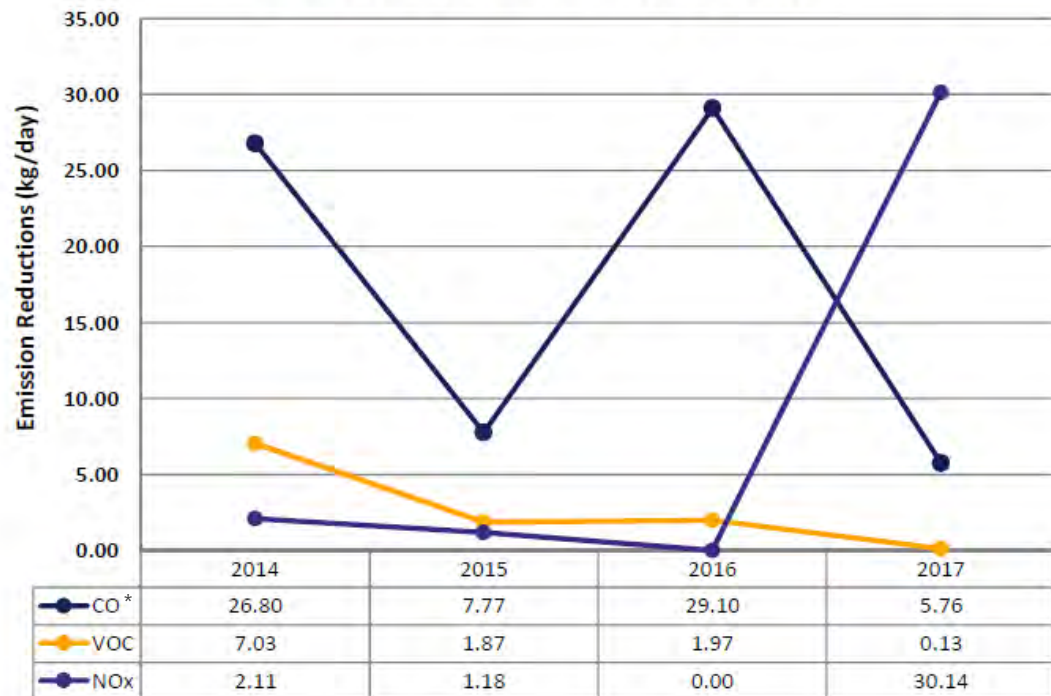
NCDOT System Performance Targets

Figure A-11: Recent Trends – Percent of Non-SOV Travel within the Charlotte, NC - SC UZA



Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

Figure A-12: CMAQ Project Emission Benefits, 2014–2017



* GCLMPO was not required to adopt a target for CO

Source: NCDOT Performance Based Planning: MAP-21/FAST Act Compliance, Strategy and Target Setting

Gaston-Cleveland-Lincoln Metropolitan Planning Organization CMAQ Performance Plan

September, 2018

Background

Performance Measures

For the purpose of carrying out the Congestion Mitigation and Air Quality Improvement (CMAQ) Program, USDOT established three performance measures for State Departments of Transportation (DOT) and Metropolitan Planning Organizations (MPO) to use to assess traffic congestion and on-road mobile source emissions. The performance measures were established in the National Performance Management Measures - Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program Final Rule¹, also known as the PM3 rule. The PM3 rule defines the following three CMAQ performance measures:

- Annual Hours of Peak Hour Excessive Delay per Capita (PHED)
- Percent of Non-Single Occupancy Vehicle Travel (Non-SOV)
- Total cumulative on-road emissions reduction from CMAQ projects (On-road emissions)

CMAQ Performance Plan

Each MPO serving a transportation management area (TMA) with a population over one million, that also includes any part of a nonattainment or maintenance area, must develop a CMAQ Performance Plan to support implementation of the CMAQ measures.² The contents of the initial CMAQ Performance Plan must:

- Describe the baseline level of condition and performance for the PHED and Non-SOV measures for calendar year 2017, and the baseline total on-road emissions reduction associated with CMAQ funded projects between Federal fiscal years 2014 and 2017.
- Identify the two-year and four-year performance targets that are established for each CMAQ measure.

¹ 23 CFR Part 490

² 23 CFR 490.107(c)(3)

Gaston-Cleveland-Lincoln Metropolitan Planning Organization CMAQ Performance Plan (Continued)

- Describe the projects identified for CMAQ funding and how the projects will contribute towards achieving the CMAQ targets.

The Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) planning area serves portions of the Charlotte, NC-SC Urbanized Area, which is a TMA with a population over one million. GCLMPO's planning area also includes portions of the Charlotte-Rock Hill, NC-SC ozone maintenance area. As such, GCLMPO is required to develop this CMAQ Performance Plan. The CMAQ Performance Plan must be submitted to NCDOT prior to October 1, 2018.

Description of CMAQ Performance Measures

Peak Hour Excessive Delay (PHED) is a measurement of traffic congestion and is expressed as annual hours of peak hour excessive delay per capita. The threshold for excessive delay is based on travel time at 20 miles per hour or 60% of the posted speed limit travel time, whichever is greater, and is measured in 15-minute intervals on National Highway System (NHS) roads. Peak travel hours are defined as 6:00 to 10:00 a.m. on weekday mornings; the weekday afternoon period is 3:00 to 7:00 p.m. or 4:00 to 8:00 p.m. The total excessive delay metric is weighted by vehicle volumes and occupancy. Thus, PHED is a measure of person-hours of delay experienced on NHS roads on an annual basis.

Non-Single Occupancy Vehicle (Non-SOV) Travel measures the percent of vehicle travel that occurs with more than one occupant in the vehicle.

The On-Road Emissions Reduction measure represents the cumulative two-year and four-year emission reductions in kg/day for CMAQ funded projects within the boundaries of the planning area.

Applicability of CMAQ Performance Measures

The PHED and Non-SOV measures are applicable to urbanized areas (UZA) with a population of more than one million that include NHS miles and are also nonattainment or maintenance areas for ozone, carbon monoxide or particulate matter. States and MPOs within an applicable UZA must coordinate and agree to set a single, unified four-year target for the entire UZA for PHED, and two- and four-year targets for Non-SOV travel.

In North Carolina, the PHED and Non-SOV Travel performance measures apply to the Charlotte, NC-SC UZA. The following agencies have planning area boundaries that overlap with the UZA: Cabarrus-Rowan MPO, Charlotte Regional Transportation Planning Organization, GCLMPO, Rock Hill-Fort Mill Area Transportation Study, NCDOT, and SCDOT. These agencies agreed upon unified PHED and Non-SOV Travel targets in Spring 2018.

The On-Road Emissions Reduction measures applies to states and MPOs that contain all or part of a nonattainment or maintenance area for ozone, CO, PM10, or PM2.5. The measure represents emission reductions in kg/day for CMAQ funded projects within the boundaries of the GCLMPO Metropolitan Planning Area.

Baseline Condition/Performance

The baseline condition and performance for the CMAQ measures is presented in Table 1, followed by a discussion of each measure.

Table 1. CMAQ Performance Measures – Baseline Condition/Performance

CMAQ Performance Measure and Geographic Area	Baseline
PHED (Charlotte Urbanized Area)	15.8 hours
Percent Non-SOV Travel (Charlotte Urbanized Area)	21.5%
On-Road Mobile Source Emissions Reduction (GCLMPO Metropolitan Planning Area)	VOC: 0.460 kg/day NOx: 0.930 kg/day

PHED Baseline Condition/Performance

The PHED baseline shown in Table 1 represents PHED on NHS roads in the Charlotte, NC-SC UZA for 2017. The baseline is obtained from analyzing data in the National Performance Measures Research Dataset (NPMRDS), a federally-funded dataset derived from vehicle/passenger GPS data. NPMRDS covers the entire NHS and provides average travel times in five-minute time periods for each travel segment, measured continuously throughout the year.

The primary data elements required to calculate PHED are: travel times on the NHS (in 15-minute segments), vehicle type (car, truck, and bus); average vehicle occupancy (AVO) factors; speed limits; and total UZA population. The Regional Integrated Transportation Information System (RITIS) tool provides the means to analyze historical delay trends for NHS facilities within state, MPO, or UZA boundaries. Default AVO values are assumed within the tool as follows: AVO (car) = 1.7; AVO (truck) = 1.0; AVO (bus) = 8.5. These values were derived from the National Household Transportation Survey (NHTS) and the National Transit Database (NTD). Speed limits are not contained within RITIS. However, NCDOT staff provided posted speed limits for NHS facilities within the Charlotte, NC-SC UZA. The 3:00 to 7:00 pm peak period was used to determine baseline conditions and establish targets.

Non-SOV Travel Baseline Condition/Performance

American Community Survey (ACS) data was used to develop the baseline Non-SOV travel data. ACS is census information based on “commuting to work” survey responses representing a sample of workers age 16 and over. Available survey responses for commuting to work are drove alone, carpooled, took public transportation (excluding taxicabs), walked, used other means, or worked at home. Note that the Non-SOV Travel percent reported in Table 1 represents 2016, which is the latest available data. Data for 2017 is expected to be available from the U.S. Census Bureau in September 2018.

On-Road Emissions Reduction Baseline Condition/Performance

The data source for the emission reductions is the CMAQ Public Access System. States enter project information, including emissions, into the system by March 1 for each CMAQ project funded in the previous Federal fiscal year.

The baseline condition represents the sum of emissions reductions, in kilograms/day for each applicable pollutant, from all CMAQ funded projects in the GCLMPO planning area that were reported in the CMAQ Public Access System between Federal fiscal years 2014 to 2017.

Some of the projects in the CMAQ System did not have emission reductions entered. For these projects, NCDOT staff reviewed the applicable CMAQ project applications to determine emissions. Emission reduction data for some projects was entered using incorrect units (e.g., grams/day instead of kilograms/day). These were corrected. The baseline does not include statewide CMAQ projects selected by NCDOT, including ITS projects. Although these statewide CMAQ projects may potentially reduce emissions in the GCLMPO area, the MPO did not select these projects, and has no control over future selections from year to year. NCDOT does not have a policy in place that prioritizes the selection of projects in a particular area, and thus may or may not select projects in that area in the future.

CMAQ Targets

The two-year and four-year targets for each CMAQ measure for the first performance period, as applicable, are provided in Table 2.

Table 2. CMAQ Performance Targets

CMAQ Performance Measure and Geographic Area	2-year Target	4-year Target
PHED (Charlotte Urbanized Area)	2-year target not required	34.0 hours
Percent Non-SOV Travel (Charlotte Urbanized Area)	21.0%	21.0%
On-Road Mobile Source Emissions Reduction (GCLMPO Metropolitan Planning Area)	Kg/day VOC: 0.040 NOx: 1.640	Kg/day VOC: 0.080 NOx: 3.280

Because the PHED and Percent Non-SOV travel targets are set for the entire urbanized area and the state and MPO targets must be unified, these targets are identical to the targets set by NCDOT. GCLMPO participated in selecting these targets with other agencies in the UZA in the spring of 2018.

The On-Road emissions targets reflect anticipated cumulative 2-year and 4-year emission reductions in the GCLMPO planning area for CMAQ funded projects. The targets were set after taking into consideration recent CMAQ projects authorized for funding and identified

Gaston-Cleveland-Lincoln Metropolitan Planning Organization CMAQ Performance Plan (Continued)

in the CMAQ Public Access System. The emission benefits of CMAQ projects are highly dependent on project type and project delivery schedules by local agencies.

Description of CMAQ Projects

The CMAQ Performance Plan must include a description of projects identified for CMAQ funding during the performance period and how these projects will contribute to the achievement of the 2- and 4-year targets for traffic congestion and on-road mobile source emissions. Table 3 presents the CMAQ projects in the GCLMPO planning area anticipated for CMAQ funding during 2018-2021, based on CMAQ applications received. The projects are grouped by project category for fiscal years 2018-2019 and 2020-2021, with the emission reductions expected from the projects and an indication of whether the projects will benefit the PHED and Non-SOV Travel targets. The benefits and emission reductions that are expected to result from these projects will contribute to the achievement of the 2- and 4-year CMAQ targets identified in Table 2.

Gaston-Cleveland-Lincoln Metropolitan Planning Organization CMAQ Performance Plan (Continued)

Table 3. Description of CMAQ Projects Identified for CMAQ Funding, GCLMPO Metropolitan Planning Area

Project Category	Description of Projects	Year Ant. For CMAQ Obligation	VOC Benefit (kg/day)	NOx Benefit (kg/day)	PHED Benefit	Non-SOV Benefit
Bicycle-pedestrian projects	Sidewalk connectors	2019	0.014	0.010	No	Yes
Bicycle-pedestrian projects	Greenway connector	2020	0.019	0.014	Yes	Yes

Appendix B:

Public Involvement Materials

Public Meeting Advertisements

Public Meeting Flyer (April 2017) – English.....	B2
Public Meeting Flyer (April 2017) – Spanish.....	B3
Public Meeting Flyer (August 2017) – English.....	B4
Public Meeting Flyer (August 2017) – Spanish.....	B5
Public Meeting Flyer (February 2018) – English	B6
Public Meeting Flyer (February 2018) – Spanish	B7

Public Comment Period Announcements

Public Comment Period Announcement (April 2017) – English.....	B8
Public Comment Period Announcement (April 2017) – Spanish	B10
Public Comment Period Announcement (August 2017) – English.....	B12
Public Comment Period Announcement (August 2017) – Spanish	B14
Public Comment Period Announcement (February 2018) – English	B16
Public Comment Period Announcement (February 2018) – Spanish.....	B17

Public Comments and Responses

Table B-1: Public Meeting Comments and Responses (August 2017)	B18
Table B-2: Public Meeting Comments and Responses (February 2018)	B26

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Are your transportation needs being met?



Transit



Highway



Aviation



Bicycle



Pedestrian



Freight

WE NEED YOUR INPUT!

Unified Planning Work Program (UPWP)

The Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) conducts transportation planning in cooperation with the state and federal governments. The GCLMPO is required to approve a work program and budget to identify tasks and expenses for the upcoming fiscal year. Please let us know if we are conducting planning that is helping to meet all of your transportation needs! More information can be found at www.gclmpo.org/upwp.

Metropolitan Transportation Plan (MTP)

The MTP for the GCLMPO is the locally-adopted, fiscally-constrained, long-range transportation plan for Cleveland, Gaston, and Lincoln counties. The MTP is a comprehensive plan that defines the transportation network that will serve both present and projected volumes of vehicular traffic, public transportation use, bicycle, pedestrian, aviation and freight travel in and around the urban area. Are current and proposed projects meeting all of your transportation needs? More information can be found at www.gclmpo.org/mtp.

PUBLIC MEETINGS

LINCOLN COUNTY

Wed., April 12, 2017
11:00 am – 1:00 pm
Lincoln Co Citizens Center
115 W Main St, Lincolnton

CLEVELAND COUNTY

Thurs., April 13, 2017
11:00 am – 1:00 pm
Cleveland Co Admin. Bldg.
311 E Marion St, Shelby

GASTON COUNTY

Thurs., April 20, 2017
11:00 am – 1:00 pm
Gastonia City Hall
181 S South St, Gastonia

The Public Comment
Period will run from
April 1 – 30, 2017

STAFF CONTACT

Julio Paredes
704.866.6980
julio@cityofgastonia.com

www.gclmpo.org



¿Se están cumpliendo sus necesidades de transporte?



Transporte Público



Autopista



Aviación



Bicicleta



Peatonal



Carga

NECESITAMOS TU APOORTE!

Programa de Trabajo Unificado de Planificación (UPWP)

La Organización de Planificación Metropolitana Gaston-Cleveland-Lincoln (GCLMPO) lleva a cabo la planificación de transporte a través de la cooperación con los gobiernos federales y estatales. El GCLMPO está requerido de aprobar un programa de trabajo y de presupuesto para asignar deberes y gastos para el próximo año fiscal. Por favor, háganos saber si estamos llevando a cabo con éxito la planificación que está ayudando a satisfacer todas sus necesidades. Puede encontrar más información en: www.gclmpo.org/upwp.

Plan Metropolitano de Transporte (MTP)

El MTP para el GCLMPO es el plan de transporte a largo plazo, fiscalmente restringido y adoptado localmente en los condados de Cleveland, Gaston y Lincoln. El MTP es un plan integral que muestra las redes de transporte que servirán ambos volúmenes de tráfico presentes y proyectados de vehículos privados, transporte público, bicicletas, peatones, aviación y de carga en y alrededor del área urbana ¿Están los proyectos actuales y propuestos satisfaciendo todas sus necesidades de transporte? Puede encontrar más información en: www.gclmpo.org/mtp.

REUNIONES ABIERTAS AL PÚBLICO

CONDADO LINCOLN

Mier., Abril 12, 2017
11:00 am – 1:00 pm
Lincoln Co Citizens Center
115 W Main St, Lincolnton

CONDADO CLEVELAND

Jueves, Abril 13, 2017
11:00 am – 1:00 pm
Cleveland Co Admin. Bldg.
311 E Marion St, Shelby

CONDADO GASTON

Jueves, Abril 20, 2017
11:00 am – 1:00 pm
Gastonia City Hall
181 S South St, Gastonia

El período de comentario público es abierto:
Abril 1 – 30, 2017

PERSONAL DE CONTACTO:

Julio Paredes
704.866.6980
juliop@cityofgastonia.com

www.gclmpo.org



Are your transportation needs being met?



WE NEED YOUR INPUT!

Metropolitan Transportation Plan (MTP)

The MTP for the GCLMPO is the locally-adopted, fiscally-constrained, long-range transportation plan for Cleveland, Gaston, and Lincoln counties. The MTP is a comprehensive plan that defines the transportation network that will serve both present and projected volumes of vehicular traffic, public transportation use, bicycle, pedestrian, aviation and freight travel in and around the urban area.

Please join us at one of the **public meetings**! All meetings are drop-in format, with no formal presentation at a set time.

Written comments may also be sent by mail, email, or fax to the following:

Gaston-Cleveland-Lincoln MPO
Attn: Randi Gates, Senior Planner
PO Box 1748
Gastonia, NC 28053
randig@cityofgastonia.com
FAX: 704-869-1960

More information can be found at www.gclmpo.org/mtp.

PUBLIC MEETINGS (Drop-in)

LINCOLN COUNTY

Wed., August 23, 2017
1:00 – 3:00 pm
Lincoln Co Citizens Center
115 W Main St, Lincolnton

GASTON COUNTY

Thurs., August 24, 2017
11:00 am – 1:00 pm
Gastonia City Hall
181 S South St, Gastonia

CLEVELAND COUNTY

Thurs., August 24, 2017
6:00 – 8:00 pm
Shelby Alive
126 W Marion St, Shelby

The Public Comment
Period will run from
August 1 – 30, 2017

STAFF CONTACT

Randi Gates
704.854.6604
randig@cityofgastonia.com

www.gclmpo.org



¿Se están cumpliendo sus necesidades de transporte?



NECESITAMOS TU APOORTE!

Plan Metropolitano de Transporte (MTP)

El MTP para el GCLMPO es el Plan de transporte a largo plazo adoptado localmente, fiscalmente restringido para los condados de Cleveland, Gaston y Lincoln. El MTP es un plan integral que define la red de transporte que servirá tanto los volúmenes presentes como proyectados de tráfico de vehículos, transporte público, bicicletas, peatones, aviación y fletes en y alrededor del área urbana.

¡Únase con nosotros en una de las **reuniones públicas**! Todas las reuniones son formato de presentación, sin presentación formal a una hora determinada.

Comentarios por escrito también pueden ser enviados por correo, correo electrónico o fax a:

Gaston-Cleveland-Lincoln MPO
Attn: Randi Gates, Senior Planner
PO Box 1748
Gastonia, NC 28053
randig@cityofgastonia.com
FAX: 704-869-1960

REUNIONES PÚBLICAS (Formato Libre)

CONDADO LINCOLN

Mier., Agosto 23, 2017
1:00 – 3:00 pm
Lincoln Co Citizens Center
115 W Main St, Lincolnton

CONDADO GASTON

Jueves, Agosto 24, 2017
11:00 am – 1:00 pm
Gastonia City Hall
181 S South St, Gastonia

CONDADO CLEVELAND

Jueves, Agosto 24, 2017
6:00 – 8:00 pm
Shelby Alive
126 W Marion St, Shelby

El Período de Comentario
Públicos comenzará
Agosto 1 – 30, 2017

CONTACTO DEL PERSONAL

Randi Gates
704.854.6604
randig@cityofgastonia.com

www.gclmpo.org



Are your transportation needs being met?



Transit



Highway



Aviation



Bicycle



Pedestrian



Freight

WE NEED YOUR INPUT!

Unified Planning Work Program (UPWP)

The Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) conducts transportation planning in cooperation with the state and federal governments. The GCLMPO is required to approve a work program and budget to identify tasks and expenses for the upcoming fiscal year. Please let us know if we are conducting planning that is helping to meet all of your transportation needs! More information can be found at www.gclmpo.org/upwp.

Metropolitan Transportation Plan (MTP)

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PUBLIC MEETINGS

LINCOLN COUNTY

Thurs., February 15, 2018
11:00 am – 1:00 pm
Lincolnton City Hall
114 W Sycamore St, Lincolnton

CLEVELAND COUNTY

Thurs., February 22, 2018
11:00 am – 1:00 pm
Cleveland Co Admin. Bldg.
311 E Marion St, Shelby

GASTON COUNTY

Thurs., February 22, 2018
5:00 – 7:00 pm
Gastonia Police Dept.
200 Long Ave, Gastonia

The Public Comment
Period will run from
Jan. 29 - Feb. 28, 2018

STAFF CONTACT

Randi Gates
704.854.6604
randig@cityofgastonia.com
www.gclmpo.org



¿Se están cumpliendo sus necesidades de transporte?



Transporte Público



Autopista



Aviación



Bicicleta



Peatonal



Carga

NECESITAMOS TU APOORTE!

Programa de Trabajo Unificado de Planificación (UPWP)

La Organización de Planificación Metropolitana Gaston-Cleveland-Lincoln (GCLMPO) lleva a cabo la planificación de transporte a través de la cooperación con los gobiernos federales y estatales. El GCLMPO está requerido de aprobar un programa de trabajo y de presupuesto para asignar deberes y gastos para el próximo año fiscal. Por favor, háganos saber si estamos llevando a cabo con éxito la planificación que está ayudando a satisfacer todas sus necesidades. Puede encontrar más información en: www.gclmpo.org/upwp.

Plan Metropolitano de Transporte (MTP)

El MTP para el GCLMPO es el plan de transporte a largo plazo, fiscalmente restringido y adoptado localmente en los condados de Cleveland, Gaston y Lincoln. El MTP es un plan integral que muestra las redes de transporte que servirán ambos volúmenes de tráfico presentes y proyectados de vehículos privados, transporte público, bicicletas, peatones, aviación y de carga en y alrededor del área urbana ¿Están los proyectos actuales y propuestos satisfaciendo todas sus necesidades de transporte? Puede encontrar más información en: www.gclmpo.org/mtp.

REUNIONES ABIERTAS AL PÚBLICO

CONDADO LINCOLN

Jueves, Febrero 15, 2018
11:00 am – 1:00 pm
Lincolnton City Hall
114 W Sycamore St,
Lincolnton

CONDADO CLEVELAND

Jueves, Febrero 22, 2018
11:00 am – 1:00 pm
Cleveland Co Admin. Bldg.
311 E Marion St, Shelby

CONDADO GASTON

Jueves, Febrero 22, 2018
11:00 am – 1:00 pm
Gastonia Police Dept
200 Long Ave, Gastonia

El período de comentario público es abierto:

Enero 29 – Feb. 28, 2017

PERSONAL DE CONTACTO:

Randi Gates
704.854.6604
randig@cityofgastonia.com

www.gclmpo.org



Public Comment Period Announcement (April 2017) – English

THE GASTON-CLEVELAND-LINCOLN METROPOLITAN PLANNING ORGANIZATION (GCLMPO) HAS ESTABLISHED A PUBLIC COMMENT PERIOD FOR THE DRAFT FY 2017-2018 UNIFIED PLANNING WORK PROGRAM (UPWP) AND THE 2045 METROPOLITAN TRANSPORTATION PLAN (MTP)

The documents will be available for review and public comments will be received from **April 1-30, 2017**.

Unified Planning Work Program (UPWP)

The Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) conducts transportation planning in cooperation with the state and federal governments. The GCLMPO is required to approve a work program and budget to identify tasks and expenses for the upcoming fiscal year. Please let us know if we are conducting planning that is helping to meet all of your transportation needs! More information can be found at www.gclmpo.org/upwp.

Metropolitan Transportation Plan (MTP)

The MTP for the GCLMPO is the locally-adopted, fiscally-constrained, long-range transportation plan for Cleveland, Gaston, and Lincoln counties. The MTP is a comprehensive plan that defines the transportation network that will serve both present and projected volumes of vehicular traffic, public transportation use, bicycle, pedestrian, aviation and freight travel in and around the urban area. Are current and proposed projects meeting all of your transportation needs? More information can be found at www.gclmpo.org/mtp.

Copies of all documents and maps for the projects referenced above are available for review during the dates listed above in the Gastonia Planning Department located on the 2nd floor of the Garland Center - 150 South York Street, Gastonia, NC 28052, and the following city/town halls/administration buildings: Belmont, Bessemer City, Boiling Springs, Cherryville, Cleveland County, Cramerton, Dallas, Gaston County, Gastonia, Lincoln County, Kings Mountain, Lincolnton, Lowell, Mount Holly, Ranlo, Shelby, and Stanley.

Public meetings will be held on the dates, times, and locations below:

- **April 12, 2017** from 11:00 am – 1:00 pm at the Lincoln County Citizens Center, located at 115 W. Main Street, Lincolnton, NC 28092
- **April 13, 2017** from 11:00 am – 1:00 pm at the Cleveland County Administrative Building, located at 311 E. Marion St., Shelby, NC 28150
- **April 20, 2017** from 11:00 am – 1:00 pm at the Gastonia City Hall, located at 181 South St., Gastonia, NC 28053

All meetings are drop-in format, with no formal presentation at a set time.

Written comments may be sent by mail, email, or fax to the following address:

Gaston-Cleveland-Lincoln MPO
Attn: Julio Paredes, Transportation Planner
PO Box 1748
Gastonia, NC 28053
juliop@cityofgastonia.com
FAX: 704-869-1960

Public Comment Period Announcement (April 2017) – English (Continued)

All comments must be received by April 30, 2017. Additional information can be obtained by contacting GCLMPO staff at 704-854-6663.

The Gaston-Cleveland-Lincoln MPO hereby gives public notice of its policy to uphold and assure full compliance with Title VI of the Civil Rights Act of 1964 and all related acts and statutes. Title VI and related statutes prohibiting discrimination in Federally assisted programs require that no person in the United States of America shall, on the grounds of race, color, national origin, sex, age, or disability be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving Federal assistance.

Any person who believes they have been aggrieved by an unlawful discriminatory practice regarding the **Gaston-Cleveland-Lincoln MPO** programs has a right to file a formal complaint with the NCDOT Office of Civil Rights, Title VI Section, 1511 Mail Service Center, Raleigh, NC 27699, within one hundred and eighty (180) days following the date of the alleged discrimination occurrence.

Individuals requiring special accommodations at these public meetings should call the City of Gastonia ADA coordinator at (704) 866-6861 or for hearing impaired persons 1-800-735-2962 TDD users within 48 hours of the meeting.

Public Comment Period Announcement (April 2017) – Spanish

LA ORGANIZACIÓN DE PLANIFICACIÓN METROPOLITANA DE GASTON-CLEVELAND-LINCOLN (GCLMPO) HA ESTABLECIDO UN PERIODO DE COMENTARIOS PARA EL PLAN PRELIMINAR DEL AÑO FISCAL 2017-2018 DE PROGRAMA DE TRABAJO DE PLANIFICACIÓN UNIFICADA (UPWP) Y EL PLAN DE TRANSPORTE METROPOLITANO 2045 (MTP)

Los documentos estarán disponibles para su revisión y recibirán comentarios del público del 1 al 30 de abril de 2017.

Programa de Trabajo Unificado de Planificación (UPWP)

La Organización de Planificación Metropolitana Gaston-Cleveland-Lincoln (GCLMPO) lleva a cabo la planificación de transporte a través de la cooperación con los gobiernos federales y estatales. El GCLMPO está requerido de aprobar un programa de trabajo y de presupuesto para asignar deberes y gastos para el próximo año fiscal. Por favor, háganos saber si estamos llevando a cabo con éxito la planificación que está ayudando a satisfacer todas sus necesidades. Puede encontrar más información en: www.gclmpo.org/upwp.

Plan Metropolitano de Transporte (MTP)

El MTP para el GCLMPO es el plan de transporte a largo plazo, fiscalmente restringido y adoptado localmente en los condados de Cleveland, Gaston y Lincoln. El MTP es un plan integral que muestra las redes de transporte que servirán ambos volúmenes de tráfico presentes y proyectados de vehículos privados, transporte público, bicicletas, peatones, aviación y de carga en y alrededor del área urbana ¿Están los proyectos actuales y propuestos satisfaciendo todas sus necesidades de transporte? Puede encontrar más información en: www.gclmpo.org/mtp.

Copias de todos los documentos y mapas para los proyectos mencionados anteriormente están disponibles para revisión durante las fechas listadas arriba en el Departamento de Planificación de Gastonia ubicado en el segundo piso del Centro Garland - 150 South York Street, Gastonia, NC 28052 y la siguiente ciudad / Ayuntamientos / edificios administrativos: Belmont, Bessemer City, Boiling Springs, Cherryville, Cleveland County, Cramerton, Dallas, Gaston County, Gastonia, Lincoln County, Kings Mountain, Lincolnton, Lowell, Mount Holly, Randle, Shelby, and Stanley.

Las reuniones públicas se llevarán a cabo en las fechas, horas y lugares siguientes:

- **Abril 12, 2017** desde 11:00 am – 1:00 pm en el Lincoln County Citizens Center, localizado en 115 W. Main Street, Lincolnton, NC 28092
- **Abril 13, 2017** desde 11:00 am – 1:00 pm en el Cleveland County Administrative Building, localizado en 311 E. Marion St., Shelby, NC 28150
- **Abril 20, 2017** desde 11:00 am – 1:00 pm en el Gastonia City Hall, localizado en 181 South St., Gastonia, NC 28053

Todas las reuniones son formato de presentación informal, sin un orden previsto o a una hora determinada.

Todos los comentarios por escrito se pueden enviar por correo, correo electrónico o fax a la siguiente dirección:

Gaston-Cleveland-Lincoln MPO
Attn: Julio Paredes, Transportation Planner
PO Box 1748
Gastonia, NC 28053
juliop@cityofgastonia.com
FAX: 704-869-1960

Public Comment Period Announcement (April 2017) – Spanish (Continued)

Todos los comentarios deben ser recibidos antes del 30 de abril de 2017. Información adicional se puede obtener contactando al personal de GCLMPO al 704-854-6663.

El MPO de Gaston-Cleveland-Lincoln da aviso público de su política de mantener y asegurar el cumplimiento total del Título VI de la Ley de Derechos Civiles de 1964 y todos los actos y estatutos relacionados. El Título VI y los estatutos relacionados que prohíben la discriminación en programas asistidos por el gobierno federal requieren que ninguna persona en los Estados Unidos de América, por motivos de raza, color, origen nacional, sexo, edad o discapacidad sea excluida de la participación. O ser objeto de discriminación en virtud de cualquier programa o actividad que reciba asistencia federal.

Toda persona que crea que ha sido agraviada por una práctica discriminatoria ilícita con respecto a los programas **MPO de Gaston-Cleveland-Lincoln** tiene derecho a presentar una queja formal ante la Oficina de Derechos Civiles de NCDOT, Sección Título VI, 1511 Mail Service Center, Raleigh, NC. 27699, dentro de los ciento ochenta (180) días siguientes a la fecha de la supuesta ocurrencia de discriminación.

Las personas que requieran acomodaciones especiales en estas reuniones públicas deben llamar al coordinador de la ADA de la Ciudad de Gastonia al (704) 866-6861 o para personas con discapacidades auditivas 1-800-735-2962 usuarios de TDD dentro de las 48 horas de la reunión.

Public Comment Period Announcement (August 2017) – English

**THE GASTON-CLEVELAND-LINCOLN METROPOLITAN PLANNING ORGANIZATION (GCLMPO)
HAS ESTABLISHED A PUBLIC COMMENT PERIOD FOR 2045 METROPOLITAN
TRANSPORTATION PLAN (MTP) FINANCIAL ASSUMPTIONS AND DRAFT FISCALLY-
CONSTRAINED PROJECT LISTS**

The documents will be available for review and public comments will be received from
August 1 - 30, 2017.

The Metropolitan Transportation Plan (MTP) for the GCLMPO is the locally-adopted, fiscally-constrained, long-range transportation plan for Cleveland, Gaston, and Lincoln counties. The MTP is a comprehensive plan that defines the transportation network that will serve both present and projected volumes of vehicular traffic, public transportation use, bicycle, pedestrian, aviation and freight travel in and around the urban area.

Copies of all documents and maps for the plan referenced above are available for review during the dates listed above in the Gastonia Planning Department located on the 2nd floor of the Garland Center - 150 South York Street, Gastonia, NC 28052, and the following city/town halls/administration buildings: Belmont, Bessemer City, Boiling Springs, Cherryville, Cleveland County, Cramerton, Dallas, Gaston County, Gastonia, Lincoln County, Kings Mountain, Lincolnton, Lowell, Mount Holly, Ranlo, Shelby, and Stanley.

Public meetings will be held on the dates, times, and locations below:

- **August 23, 2017** from 1:00 – 3:00 pm at the Lincoln County Citizen's Center, located at 115 W Main St, Lincolnton, NC 28092
- **August 24, 2017** from 11:00 am – 1:00 pm at the Gastonia City Hall, located at 181 S South St, Gastonia, NC 28052
- **August 24, 2017** from 6:00 – 8:00 pm at the "Shelby Alive" event, located at 126 W Marion St, Shelby, NC 28150

All meetings are drop-in format, with no formal presentation at a set time.

Written comments may be sent by mail, email, or fax to the following address:

Gaston-Cleveland-Lincoln MPO
Attn: Randi Gates, Senior Planner
PO Box 1748
Gastonia, NC 28053
randig@cityofgastonia.com
FAX: 704-869-1960

All comments must be received by August 30, 2017. Additional information can be obtained by contacting GCLMPO staff at 704-854-6604.

The Gaston-Cleveland-Lincoln MPO hereby gives public notice of its policy to uphold and assure full compliance with Title VI of the Civil Rights Act of 1964 and all related acts and statutes. Title VI and related statutes prohibiting discrimination in Federally assisted programs require that no person in the

Public Comment Period Announcement (August 2017) – English (Continued)

United States of America shall, on the grounds of race, color, national origin, sex, age, or disability be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving Federal assistance.

Any person who believes they have been aggrieved by an unlawful discriminatory practice regarding the **Gaston-Cleveland-Lincoln MPO** programs has a right to file a formal complaint with the NCDOT Office of Civil Rights, Title VI Section, 1511 Mail Service Center, Raleigh, NC 27699, within one hundred and eighty (180) days following the date of the alleged discrimination occurrence.

Individuals requiring special accommodations at these public meetings should call the City of Gastonia ADA coordinator at (704) 866-6861 or for hearing impaired persons 1-800-735-2962 TDD users within 48 hours of the meeting.

Public Comment Period Announcement (August 2017) – Spanish

LA ORGANIZACIÓN DE PLANIFICACIÓN METROPOLITANA DE GASTON-CLEVELAND-LINCOLN (GCLMPO) HA ESTABLECIDO UN PERIODO DE COMENTARIOS PARA EL 2045 PLAN METROPOLITANO DE TRANSPORTE (MTP) PRESUPUESTOS FINANCIEROS Y LA VERSIÓN PRELIMINAR DE LISTAS DE PROYECTOS FISCALMENTE OBLIGADOS

Los documentos estarán disponibles para su revisión y recibirán comentarios del público del **Agosto 1 – 30, 2017.**

El MTP para el GCLMPO es el Plan de transporte a largo plazo adoptado localmente, fiscalmente restringido para los condados de Cleveland, Gaston y Lincoln. El MTP es un plan integral que define la red de transporte que servirá tanto los volúmenes presentes como proyectados de tráfico de vehículos, transporte público, bicicletas, peatones, aviación y fletes en y alrededor del área urbana.

Copias de todos los documentos y mapas para los proyectos mencionados anteriormente están disponibles para revisión durante las fechas listadas arriba en el Departamento de Planificación de Gastonia ubicado en el segundo piso del Centro Garland - 150 South York Street, Gastonia, NC 28052 y la siguiente ciudad/Ayuntamientos/edificios administrativos: Belmont, Bessemer City, Boiling Springs, Cherryville, Cleveland County, Cramerton, Dallas, Gaston County, Gastonia, Lincoln County, Kings Mountain, Lincolnton, Lowell, Mount Holly, Ranlo, Shelby, and Stanley.

Las reuniones públicas se llevarán a cabo en las fechas, horas y lugares siguientes:

- **Agosto 23, 2017** desde 1:00 – 3:00 pm en el Lincoln County Citizen’s Center, ubicado en 115 W Main St, Lincolnton, NC 28092
- **Agosto 24, 2017** desde 11:00 am – 1:00 pm en el Gastonia City Hall, ubicado en 181 S South St, Gastonia, NC 28052
- **Agosto 24, 2017** desde 6:00 – 8:00 pm en el “Shelby Alive” event, ubicado en 126 W Marion St, Shelby, NC 28150

Todas las reuniones son formato de presentación informal, sin un orden previsto o a una hora determinada.

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Gaston-Cleveland-Lincoln MPO
Attn: Randi Gates, Senior Planner
PO Box 1748
Gastonia, NC 28053
randig@cityofgastonia.com
FAX: 704-869-1960

Todos los comentarios deben ser recibidos antes del 30 de Agosto del 2017. Información adicional se puede obtener contactando al personal de GCLMPO al 704-854-6604.

El MPO de Gaston-Cleveland-Lincoln da aviso público de su política de mantener y asegurar el cumplimiento total del Título VI de la Ley de Derechos Civiles de 1964 y todos los actos y estatutos

Public Comment Period Announcement (August 2017) – Spanish (Continued)

relacionados. El Título VI y los estatutos relacionados que prohíben la discriminación en programas asistidos por el gobierno federal requieren que ninguna persona en los Estados Unidos de América, por motivos de raza, color, origen nacional, sexo, edad o discapacidad sea excluida de la participación. O ser objeto de discriminación en virtud de cualquier programa o actividad que reciba asistencia federal.

Toda persona que crea que ha sido agraviada por una práctica discriminatoria ilícita con respecto a los programas **MPO de Gaston-Cleveland-Lincoln** tiene derecho a presentar una queja formal ante la Oficina de Derechos Civiles de NCDOT, Sección Título VI, 1511 Mail Service Center, Raleigh, NC. 27699, dentro de los ciento ochenta (180) días siguientes a la fecha de la supuesta ocurrencia de discriminación.

Las personas que requieran acomodaciones especiales en estas reuniones públicas deben llamar al coordinador de la ADA de la Ciudad de Gastonia al (704) 866-6861 o para personas con discapacidades auditivas 1-800-735-2962 usuarios de TDD dentro de las 48 horas de la reunión.

*Public Comment Period Announcement (February 2018) – English***FOR IMMEDIATE RELEASE**

THE GASTON-CLEVELAND-LINCOLN METROPOLITAN PLANNING ORGANIZATION (GCLMPO) HAS ESTABLISHED A PUBLIC COMMENT PERIOD FOR THE DRAFT FY 2018-2019 UNIFIED PLANNING WORK PROGRAM (UPWP), THE DRAFT 2045 METROPOLITAN TRANSPORTATION PLAN (MTP) AND THE DRAFT AIR QUALITY DETERMINATION REPORT.

The documents will be available for review and public comments will be received from **January 29 – February 28, 2018.**

Unified Planning Work Program (UPWP)

The Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) conducts transportation planning in cooperation with the state and federal governments. The GCLMPO is required to approve a work program and budget to identify tasks and expenses for the upcoming fiscal year. Please let us know if we are conducting planning that is helping to meet all of your transportation needs! More information can be found at www.gclmpo.org/upwp.

Metropolitan Transportation Plan (MTP)

The MTP for the GCLMPO is the locally-adopted, fiscally-constrained, long-range transportation plan for Cleveland, Gaston, and Lincoln counties. The MTP is a comprehensive plan that defines the transportation network that will serve both present and projected volumes of vehicular traffic, public transportation use, bicycle, pedestrian, aviation and freight travel in and around the urban area. Are current and proposed projects meeting all of your transportation needs? More information can be found at www.gclmpo.org/mtp.

Air Quality Conformity Determination Report

An air quality conformity determination is required due to the Clean Air Act's requirement that an MPO's plans and programs conform to the purpose of the state implementation plan (SIP) for achieving air quality standards. Conformity to the purpose of the SIP means that the transportation activities will not cause new violations of the National Ambient Air Quality Standards (NAAQS), worsen existing violations, or delay timely attainment of the NQAAS. More information can be found at www.gclmpo.org/mtp.

Copies of all documents and maps for the projects referenced above are available for review in the Gastonia Planning Department, located on the 2nd floor of the Garland Business Center - 150 South York Street, Gastonia, NC 28052.

Public meetings will be held on the dates, times, and locations below:

- **February 15, 2018** from 11:00 am – 1:00 pm at the Lincolnton City Hall, located at 114 W. Sycamore St., Lincolnton, NC 28092
- **February 22, 2018** from 11:00 am – 1:00 pm at the Cleveland County Administrative Building, located at 311 E. Marion St., Shelby, NC 28150
- **February 22, 2018** from 5:00 pm – 7:00 pm at the Gastonia Police Department, located at 200 Long Ave., Gastonia, NC 28052

All meetings are drop-in format, with no formal presentation at a set time.

PARA PUBLICACIÓN INMEDIATA

LA ORGANIZACIÓN DE PLANIFICACIÓN METROPOLITANA DE GASTON-CLEVELAND-LINCOLN (GCLMPO) HA ESTABLECIDO UN PERIODO DE COMENTARIOS PARA EL PLAN PRELIMINAR DEL AÑO FISCAL 2018-2019 DE PROGRAMA DE TRABAJO DE PLANIFICACIÓN UNIFICADA (UPWP) Y EL PLAN PRELIMINAR DE TRANSPORTE METROPOLITANO 2045 (MTP) Y EL PROYECTO DE INFORME DE DETERMINACIÓN DE LA CALIDAD DEL AIRE.

Los documentos estarán disponibles para su revisión y recibirán comentarios del público desde **Enero 29 hasta Febrero 28, 2018.**

Programa de Trabajo Unificado de Planificación (UPWP)

La Organización de Planificación Metropolitana Gaston-Cleveland-Lincoln (GCLMPO) lleva a cabo la planificación de transporte a través de la cooperación con los gobiernos federales y estatales. El GCLMPO está requerido de aprobar un programa de trabajo y de presupuesto para asignar deberes y gastos para el próximo año fiscal. Por favor, háganos saber si estamos llevando a cabo con éxito la planificación que está ayudando a satisfacer todas sus necesidades. Puede encontrar más información en: www.gclmpo.org/upwp.

Plan Metropolitano de Transporte (MTP)

El MTP para el GCLMPO es el plan de transporte a largo plazo, fiscalmente restringido y adoptado localmente en los condados de Cleveland, Gaston y Lincoln. El MTP es un plan integral que muestra las redes de transporte que servirán ambos volúmenes de tráfico presentes y proyectados de vehículos privados, transporte público, bicicletas, peatones, aviación y de carga en y alrededor del área urbana ¿Están los proyectos actuales y propuestos satisfaciendo todas sus necesidades de transporte? Puede encontrar más información en: www.gclmpo.org/mtp.

Informe de Determinación de la Conformidad de la Calidad del Aire

Se requiere una determinación de la conformidad de la calidad del aire debido al requisito de la Ley de Aire Limpio (Clean Air Act en inglés) de que los planes y programas de una MPO se ajusten al propósito del Plan de Implementación Estatal (SIP en inglés) para lograr los estándares de calidad del aire. La conformidad con el propósito del SIP significa que las actividades de transporte no causen nuevas violaciones de los Estándares Nacionales de Calidad del Aire Ambiental (NAAQS), empeorarán las violaciones existentes o retrasarán el logro oportuno del NQAAS. Se puede encontrar más información en www.gclmpo.org/mtp.

Copias de todos los documentos y mapas para los proyectos mencionados anteriormente están disponibles para revisión durante las fechas listadas arriba en el Departamento de Planificación de Gastonia ubicado en el segundo piso del Centro Garland - 150 South York Street, Gastonia, NC 28052 y la siguiente ciudad / Ayuntamientos / edificios administrativos: Belmont, Bessemer City, Boiling Springs, Cherryville, Cleveland County, Cramerton, Dallas, Gaston County, Gastonia, Lincoln County, Kings Mountain, Lincolnton, Lowell, Mount Holly, Ranlo, Shelby, and Stanley.

Las reuniones públicas se llevarán a cabo en las fechas, horas y lugares siguientes:

- **Febrero 15, 2018** 11:00 am – 1:00 pm. Lugar: Lincolnton City Hall, Dirección: 114 W. Sycamore St., Lincolnton, NC 28092
- **Febrero 22, 2018** 11:00 am – 1:00 pm. Lugar: Cleveland County Administrative Building. Dirección: 311 E. Marion St., Shelby, NC 28150

Table B-1: Public Meeting Comments and Responses (August 2017)

#	Date Received	Comment	Response
1	7/28/2017	Consider adding a widening project for NC150 from East Lincolnton to NC 16. Also consider widening NC 73 from East Lincolnton to NC 16 with a widened section of NC 27 between NC 150 and NC 73. All wiidenings should be from 2 to 4 lanes.	The current GCLMPO CTP includes this project.
2	7/28/2017	We desperately need the Catawba Crossings Bridge. Losing the Garden Parkway was a grave mistake, resulting in Gaston County missing out on tremendous opportunities for economic development and growth. Vote YES for this bridge! Fight hard to make this happen!	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
3	8/1/2017	Thank you for being willing to take citizen input. I've found out about this via the website. Here's an important matter that is needed to be heard for political and tax reasons, as voters could be organized against a status quo in our area, that is glaring: In Gaston County just South of New Hope Rd, Beaty Road is in urgent need of expanding. Beaty Road all the way to Union Road below it. The road is very dangerous (regular accidents due to the closeness of opposite traffic cars) and even 6 inches can mean the difference between a serious accident or injury. This should have a paved median of some type, or four lanes. There is no shoulder either, which would help. Local residents are talking about the roads being badly outdated in a big way, which you all need to take seriously for political voting reasons. I myself cringe every time I have to drive with my family in tow opposite of a huge Ryder moving truck or a semi or a large utility truck. Passing is too close on this narrow old road, it needs to be replaced. This is why I'm bothering to write about it to you. We have a lot of voters, we're made up of lots of neighborhoods like Eagles Walk, Kinmere, and Catawba Hills, plus others. To us neighbors it seems like our large amount of tax dollars are not helping improve anything near where we live. I wanted to give the team there a fair heads up to improve Beaty Road as well as Union Road near Patrick and Beaty Road, so that it is not a 1940's/1950's narrow roadway that is very dangerous. This needs to be an organized political petition if nothing really change except a fairly useless online map. The residents here, it is worth noting, joke around with each other about the long-term road plans on the online maps as never going to happen. This is because of decades of nothing happening, they've learned to be skeptical of any promise on this. This is not a good consensus developing in this area about how we're being held back in a critical service (good roads). I believe that a fix to Beaty & Union is a good solution for you all politically and also for safety of citizens. Both are good reasons to act, a win-win. This is also an obstacle to growth of this area, which is not good for the county/region's competitiveness if the roads are the same as they were in the 1950's. I would like to let you know there are a lot of us who are as voters happy being ignored with the bad shape and narrow nature of Beaty Road and Union Road near Beaty/Patrick. Hopefully you all take this seriously. If not, I'll help organize the petitions and newspaper articles to get it to happen.	Beaty Road is included in the GCLMPO CTP showing "needs improvement". The widening of Beaty Road is also listed in the current 2040 MTP. GCLMPO staff plans to submit Beaty Road as a modernization project to improve the roadway to current design standards by increasing the lane and/or shoulder width, as well as adding turn lanes at intersection to help improve through lane mobility.
4	8/1/2017	Add another access to the new rt. 16 by extending Campground Road straight to the highway to decrease congestion at Campground and Will Proctor. Eliminate light at Will Proctor and 16?	This comment will be presented to the GCLMPO TCC and Board for a future CTP map amendment.
5	8/2/2017	I will not be able to make the meeting but I would like to say that riding a bicycle in Lincoln county is just not safe since the roads have absolutely no shoulders. Most of the country roads have absolutely no buffer for cyclists. Often times the white road markings run right to the grass. It seems to me that the county should start adding a shoulder to give a few feet of pavement between the road marking (white paint) and the grass.	There are numerous on-street bicycle facilities proposed for Lincoln County through the GCLMPO's adopted CTP. With participation from Lincoln County and the City of Lincolnton, the MPO's Bicycle and Pedestrian Advisory Committee is committed to push for the implementation of these projects. With every highway project, bike/ped accommodations are taken into consideration as the scope of the project is being developed.
6	8/3/2017	Using an existing crossing of the Catawba River through passenger rail service would help eliminate congestion on I-85 using existing rail right-of-way. Service would start in Kings Mountain as the western most stop. Traveling through Gastonia, Belmont, Charlotte Douglas Airport, downtown Charlotte, and into the transit center. From there passengers can be bused to all points in Charlotte. This reduces CO2 emissions by reducing cars traveling on I-85. Also increasing ridership to points past Charlotte. We have more demand for projects than funds to pay for it. We have to be smarter in using existing transportation right-of-ways. I realize that it will take negotiations with Norfolk Southern, but the time to start is now. With a timetable of being ready to start within 8 to 10 years. Thank you for accepting my comments.	The GCLMPO staff completed the Gastonia Rapid Transit Alternatives Study: Corridor and Modal Options in 2005. In the upcoming 2045 MTP Update, GCLMPO staff will continue to look at and promote rapid transit including passenger rail.
7	8/3/2017	The Gaston Parkway project needs to be planned as an outerbelt road to I-485. Connecting Catawba Crossing to I-485 and going west to Exit 10 moving north to connect to Hwy 16.	The existing Gaston Parkway on the GCLMPO CTP map currently begins at I-485 in Mecklenburg County and heads west through southern Gaston County and connects to US 321 north of Dallas. GCLMPO staff will make this comment available to the TCC and MPO Board, at which time a discussion can occur regarding a CTP map amendment to extend this future road from US 321 to NC 16 within Gaston County.
8	8/3/2017	We are in extreme need for the Catawba Crossing bridge linking Belmont (South Point Rd) to Charlotte. I have lived in Belmont for 3 years and the traffic is worse every year.	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
9	8/3/2017	More ways across the Catawba River	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
10	8/3/2017	More bridges to Mecklenburg County	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
11	8/3/2017	Support Catawba Crossing! (Additional crossing Gaston Co to Mecklenburg Co)	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
12	8/3/2017	Prioritize vehicles (private owned) over bike/ped & prioritize bike/ped over mass transit (passenger trains, buses, trolley). No HOV lanes!! Limit tolls to few or none. Truck restricted lanes if cost-effective only.	The GCLMPO long-range transportation plans (CTP and MTP) are multi-modal and focus on the safe and efficient use of all transportation facilities.

Table B-1: Public Meeting Comments and Responses (August 2017) (Continued)

#	Date Received	Comment	Response
13	8/7/2017	<p>1.) I support the three phases of widening I-85 in Gaston and Cleveland Counties.</p> <p>A.) Phase 1 from NC 273 to US 321.</p> <p>B.) Phase 2 from US 321 to US 29/74.</p> <p>C.) Phase 3 from US 29/74 to the South Carolina State line.</p> <p>2.) I support the collection of projects named "Build a Better Boulevard."</p> <p>3.) I support replacing the bridge over the South Fork Catawba River on US 29/74 Wilkinson Blvd. with a 6-lane structure rather than a 4-lane.</p> <p>4.) I support replacement of the Catawba River Bridge on US 74/29 Wilkinson Blvd. connecting Gaston and Mecklenburg Counties.</p> <p>5.) I support adaptive Signal Lights and intersection improvements on Franklin Blvd. in Gastonia prior to I-85 widening.</p>	<p>1) Phase I of the I-85 Widening project from US 321 to NC 273 is programmed in the 2018-2027 STIP (I-5719). Phase II from US 74 to the South Carolina Line is included in the developmental program of the STIP (I-5985). Phase III from US 321 to US 74 will be submitted in P5.0 by NCDOT Division 12.</p> <p>2) A number of projects from the "Build A Better Boulevard" study are included in the Draft 2045 MTP project lists.</p> <p>3) The widening of US 74 including the bridge over the South Fork Catawba River will be submitted in P5.0 by NCDOT Division 12.</p> <p>4) The widening of US 74 including the bridge over the Catawba River will be submitted in P5.0 by NCDOT Division 12.</p> <p>5) The GCLMPO submitted a Resolution of Support to NCDOT for the acceleration of U-6038 (US 29/74 Adaptive Signalization) prior to the I-85 widening project (I-5719).</p>
14	8/14/2017	<p>Included in this letter are my public comments related to the 2045 Metropolitan Transportation Plan and other related issues. I am also supportive of many other projects on the State Transportation Improvement Program (STIP), but my comments in this letter are related to some of the most important projects in our area. I realize that many of my comments are about projects that are already being contemplated and/or prioritized.</p> <p>Within the boundaries of the Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO), and other planning organizations across the United States, prioritization is important. Lawsuits in state and federal court, federal permitting requirements, and financial constraints can hinder projects from moving forward; those of us who serve in state government neither control the federal procedural rules nor the federal permitting requirements. Nobody knows when lawsuits and/or the threat of lawsuits will end, if ever, and we can't force the federal officials to change the permitting process. Therefore, we need to move forward with projects that can actually start and/or be completed.</p> <p>At the federal level, there are also numerous laws, regulations, and conformity issues that can't be ignored. No major transportation project gets built without the approval of the federal government; this includes most, if not all, new-location bridges and roads.</p> <p>Lawsuits, fiscal constraints, and other hurdles related to new-location highways and bridges are driving my decision to support projects that can actually start and/or be completed.</p> <p>For example, the final phases of the Shelby bypass and other projects recently received prioritization points; I contacted many of the MPO members and the division engineer to advocate for these points. The first phases of the bypass started under a previous formula, before the Strategic Transportation Investments (STI) law. Therefore, we had to prioritize projects and advocate for the prioritization points, especially if a project did not score as well as expected. We spent years working with MPO members and the division engineer to make sure other projects, including a toll road that could not be built, did not financially constrain projects that could progress.</p>	<p>The final phases of the Shelby Bypass are designated as sibling/carryover projects to the initial project phases currently under construction. The final phases are considered funded in the 2018-2027 STIP.</p>
15	8/14/2017	<p>Widening I-85 from N.C. 273 to U.S. 321 in Gaston County is a statewide mobility project; it did not need prioritization points. It is one of the most, if not the most, extensive statewide mobility projects in Division 12. We are not sure how other phases of I-85's widening and other projects will score in the prioritization process, but they might need scarce prioritization points. I'm advocating for these and other projects that can start and/or be completed.</p> <p>By the way, I support the widening of I-85 without tolls. I use the word "toll" to refer to the common understanding of tolls and toll lanes. In fact, I spoke against the tolling of I-85 in Gaston and Cleveland counties when a former member of the GCLMPO suggested tolling.</p> <p>Other projects within the GCLMPO and the division are important. According to the division engineer, the Dallas-Cherryville Highway improvements seem to be moving forward. We advocated for these improvements for years and we appreciate the support we're receiving from the staff at Division 12.</p> <p>We requested that the appropriate personnel brief us on the possibility of replacing the bridge and adding turn lanes at the intersection of N.C. 150 in Waco, N.C. We think the bridge would be eligible for federal replacement funds. Improving the turn lanes and replacing the bridge would greatly enhance mobility and safety. This project should be prioritized.</p> <p>Improving N.C. 150 is important to Gaston, Cleveland and Lincoln counties and the whole state. We are pleased with the recent resurfacing projects on N.C. 150 and we understand the improvements at the intersection of 74/Marion Street and N.C. 150 are viewed favorably. In fact, I've mentioned to some of our GCLMPO members and others that improving/widening N.C. 150 is important, and I told them they need to prioritize this project. We do not need to waste time on projects that face extraordinary hurdles. Improving N.C. 150 and other projects might need prioritization points and we don't need to add frivolous projects to fiscally constrained lists that will unnecessarily constrain funds and waste scarce prioritization points.</p> <p>I am supportive of improvements to U.S. 29/74 and Wilkinson/Franklin Boulevard. Replacing bridges and improving Wilkinson/Franklin Boulevard, which is called Build a Better Boulevard, will be great for this division, region and state. Replacing and widening the Catawba River Bridge 91 (350091) to six lanes is important. The current bridge is dangerously narrow.</p> <p>Replacing and widening Bridge 82 (350082), where it crosses the South Fork, to six lanes is also important. It seems dangerously narrow and inhibits efficient commercial freight passage on the vital U.S. 74 corridor; replacement to meet modern standards seems in order and should help with development, access, and safety. This is important to the people of the division, region and state, and both bridge replacements to six lanes will improve access to the airport in Charlotte and the proposed River District.</p> <p>I also support digitalized traffic signals as part of this project. Build a Better Boulevard and digitalized signals could greatly enhance access to the airport in Charlotte and the proposed River District in Mecklenburg County.</p>	<p>Statewide Mobility projects are 100% data drive and therefore not eligible to receive local prioritization/input points.</p> <p>The previously proposed Dallas Cherryville Highway widening from 2 to 4 lanes did not score well for P4.0. Since that time, Division 12 has proposed a safety improvement project which will add 4 passing zones at various points along the corridor.</p> <p>The S Main Street (SR 1001) bridge over the railroad, just south of NC 150? According to the NCDOT Bridge Replacement website, the bridge is listed as a functionally obsolete, but not structurally deficient, with an overall sufficiency rating of 46.96. It also has a Posted Single Truck Weight of 14 tons and a Posted Tractor-Trailer Semi-Truck Weight of 19 tons.</p> <p>The two remaining I-85 widening project phases/segments will be scored in P5.0. STIP #I-5985 (I-85 widening from US 74 to the SC Line) from 4 to 6 lanes is in the developmental STIP and the potential exist for this project to be combined with the I-85 widening segment from US 321 to US 74 as one environmental document. A combined environmental document would link the two segments as sibling projects.</p> <p>Widening projects for U.S. 29/74 including bridge replacements across the South Fork River - Bridge 82 (350082) and the widening of Wilkinson/Franklin Boulevard including a bridge replacement project across the Catawba River - Bridge 91 (350091) will both be submitted as P5.0 Regional Tier highway projects.</p>

Table B-1: Public Meeting Comments and Responses (August 2017) (Continued)

#	Date Received	Comment	Response
16	8/14/2017	<p>Our focus on improving and resurfacing and paving rural roads is paying off and we need to continue this effort. Many people in our state comment about how they are pleased with the resurfacing of so many roads.</p> <p>We are thankful for the ongoing support. I received great responses from NCDOT personnel when we had problems with bridges near Alexis, Stanley, and High Shoals, and I received courteous and prompt responses when we had problems with the Buffalo Creek Bridge and other bridges in our area. Some bridge replacements and other projects have been delayed by federal permitting requirements; the division engineer keeps us informed about the progress. Those of us serving in state government don’t control the federal permitting process.</p> <p>NCDOT personnel promptly updated me on the progress of the project on Sparrow Springs Road in Gaston County. The widening of N.C. 180 in Cleveland County appears to be moving forward and the new weigh station near Bessemer City is an asset for the whole state. Improving the Lower Dallas Highway is another worthwhile project that is important.</p> <p>As a side note, CSX improved numerous railroad crossings in our area, and we are thankful for their responses and efforts.</p> <p>There is a complicated mix of state and federal transportation law, and it is not my goal to oppose projects for the sake of opposing projects. For example, at least one toll project fiscally constrained other key projects within the current GCLMPO boundaries. Under the new STI law, the toll road scored poorly, and it was entangled in a federal lawsuit. Due to these and other reasons, I decided to support other projects that could move forward.</p> <p>I can’t possibly mention every important project, but I am hopeful that the prioritization process will continue. My comments are focused on projects in or close to the 110th House District; however, as a House Transportation Committee chairman, I work with people to improve transportation projects that positively impact all of North Carolina.</p> <p>We are aware that N.C. Transportation Secretary Jim Trogdon, before becoming secretary, helped bring the national momentum of strategic transportation investments to our state. Others filed the bill, but he helped bring the issue to the table. Thankfully, hundreds of millions of dollars will be invested in all types of transportation infrastructure within our MPO and division, and billions will be invested statewide, in the near future. Common-sense prioritization efforts, accountability, efficiency, and support from the taxpayers make these and future investments possible.</p>	<p>Comments made here focus on the wide array of projects discussed planned and funded and now are under construction within GCLMPO geographic area.</p>
17	8/21/2017	<p>The Dallas Cherryville Highway improvements need funding as soon as possible. I have already provided data to Senator Kathy Harrington in relation to the danger this road exposes to the people who travel it daily. The City of Cherryville Fire Department, the Crouse Volunteer Fire Department, the Tryonota Volunteer Fire Department, the Agriculture Center Volunteer Fire Department, the Dallas Fire Department, Gaston Emergency Medical Services and various law enforcement agencies can attest to the fact that this section of road is extremely hazardous. We respond to vehicle accidents with injuries on a regular basis and, on some occasions, death occurs. We perform extraction at these accidents on a frequent basis. The road needs immediate attention in an effort to prevent death and injury to our citizens.</p>	<p>NCDOT Division 12 has authorized the construction of four passing zones between White Jenkins Road and downtown Cherryville along NC 279 as a safety improvement project.</p>
18	8/21/2017	<p>The, second project is the improving of North Carolina Highway 150. This corridor is the critical link for economic development for our area and the entire state of North Carolina. Our area has been devastated with job loss over the past 25 years. The Highway 150 improvement will help ensure the long-term viability of our economic future. It will help provide and secure much needed jobs for our area. The Highway 150 project from Highway 321 to Shelby will open up interstate traffic travel to make our area more transportation accessible. It will help spur commercial, industrial and retail growth which produces jobs!</p>	<p>The widening of NC 150 from NC 279 at Cherryville to relocated US 321 (R-0617) is included in the 2018-2027 STIP. Two segments have been completed, and two additional segments are included in the developmental program (second five years) of the 2018-2027 STIP.</p>
19	8/23/2017	<p>Gaston County has several important transportation issues that must be addressed in order for us to move forward locally and regionally. First and foremost is the widening and upgrading of the I-85 corridor through our county. It will mean much more than simply adding one lane. Many over/under passes will be expanded; more room will be added for entrance and exit ramps. Other improvements will greatly relieve congestion and improve safety. Most of you realize this of course and the I-85 project is already in the planning stages.</p>	<p>The two remaining I-85 widening project phases/segments will be scored in P5.0. STIP #I-5985 (I -85 widening from US 74 to the SC Line) from 4 to 6 lanes is in the developmental STIP and the potential exist for this project to be combined with the I-85 widening segment from US 321 to US 74 as one environmental document. A combined environmental document would link the two segments as sibling projects.</p>
20	8/23/2017	<p>The second issue is the replacement of the bridge over the Catawba River on US 29/74. This bridge was constructed in 1933 and is already functionally obsolete and borders on being structurally deficient today; right now. The NCDOT is well aware of these issues and is working on a solution. Our MPO should ask the Charlotte region MPO (CRTPo) to add the Catawba River/Hwy 74 bridge to their project list since half of the bridge is theirs! The entire corridor from Gastonia to Charlotte and to Douglas Airport would benefit from these much needed upgrades. Growth along the river would probably explode on both sides. We have many other local issues and no doubt our friends in Cleveland and Lincoln Counties have quite a few issues they would like to see addressed as well. Our MPO includes three counties. What happens in one affects the other two. If one highly speculative very costly potential project is allowed to fiscally constrain every other local project, it hurts everyone in the entire Gaston, Cleveland, and Lincoln Metropolitan Planning Organization region!</p>	<p>The S Main Street (SR 1001) bridge over the railroad, just south of NC 150? According to the NCDOT Bridge Replacement website, the bridge is listed as a functionally obsolete, but not structurally deficient, with an overall sufficiency rating of 46.96. It also has a Posted Single Truck Weight of 14 tons and a Posted Tractor-Trailer Semi-Truck Weight of 19 tons.</p> <p>The two remaining I-85 widening project phases/segments will be scored in P5.0. STIP #I-5985 (I -85 widening from US 74 to the SC Line) from 4 to 6 lanes is in the developmental STIP and the potential exist for this project to be combined with the I-85 widening segment from US 321 to US 74 as one environmental document. A combined environmental document would link the two segments as sibling projects.</p> <p>Widening projects for U.S. 29/74 including bridge replacements across the South Fork River - Bridge 82 (350082) and the widening of Wilkinson/Franklin Boulevard including a bridge replacement project across the Catawba River - Bridge 91 (350091) will both be submitted as P5.0 Regional Tier highway projects.</p>
21	8/23/2017	<p>As a member of several committees of the NC House that deal with transportation issues I can tell you that we do not have unlimited funds. Many other regions of the state have pressing transportation needs and competition for funding is intense. For that reason we should be very careful what we ask for. We all want what is best for our area and these are a few of my thoughts on these issues. Thank you for all your hard work.</p>	<p>This comment addresses the importance of being prudent with our Transportation project requests as projects costs exceed project construction funds.</p>
22	8/23/2017	<p>Rate NC 16 BUS north of Hwy 16 needs to be much higher priority.</p>	<p>Projects listed in the draft 2045 MTP were ranked utilizing adopted ranking methodology. If this project is funded earlier, an amendment to the 2045 MTP will be made.</p>

Table B-1: Public Meeting Comments and Responses (August 2017) (Continued)

#	Date Received	Comment	Response
23	8/23/2017	Correcting intersection at 16 BUS and Triangle/Unity independently of the other needs to be reconsidered and done together.	STIP project #R-5712 is funded and scheduled to begin ROW acquisition in FY 2018. This project is an independent intersection improvement project which will add turn lanes and have a total cost of \$1,163,000.00.
24	8/23/2017	Priority of intersection of N Generals & Main needs to be elevated.	NCDOT Division 12 plans to submit a project in P5.0 to make improvements to this intersection. If funded in the next STIP, an amendment will be made to the 2045 MTP.
25	8/23/2017	No Bike/Ped projects in Shelby?	The City of Shelby did not submit any bike/ped projects to be ranked for the 2045 MTP.
26	8/23/2017	Need a 2-lane east-west connector from 150/18 intersection to 180/226 (W-5721A)	This proposed corridor/connector is on the GCLMPO CTP labeled as the "Southern Connector." Using the GCLMPO ranking methodology, this project does not score high enough in relationship to other GCLMPO highway projects to be considered for SPOT prioritization submittal.
27	8/23/2017	Need a new road south of Shelby High to take pressure off of US 74, connecting Dekalb NC-150 with Eaves Rd	The current GCLMPO CTP is void of any proposed roadway network improvements south of Shelby High. This geographic area is limited in roadway connectivity. This comment will be provided to the TCC and MPO Board at a future date for CTP amendment considerations.
28	8/23/2017	Eliminate cross overs along US 74 Bypass through Shelby, only at controlled intersections	This comment will be provided to NCDOT Division 12 office for consideration of future implementation. Crossovers can present some safety concerns if intersections are not adequately spaced, marked and signed.
29	8/24/2017	<p>It is wonderful to see the repaving of Franklin Blvd.</p> <p>Please add bike lanes in each direction now that the lanes are wider.</p> <p>This will add safety and recognition to your community, as a community that cares for its residents.</p> <p>The area around the retail stores in the Cox Rd. area also requires sidewalks on both sides.</p> <p>We come from a large community in Ohio that has sidewalks everywhere. The mayor and city planners with the council worked to incorporate bike lanes and sidewalks in all of Westlake, Ohio. Sidewalks are paid for by the owners of each property even if the land is not developed.</p>	A road diet is currently underway along Franklin Boulevard in Gastonia in order to widen travel lanes and create a middle left turn lane. With the widened travel lanes, there isn't adequate width for striped bike lanes. The City of Gastonia is working to create an east-west corridor safe for bicyclists along Second Avenue. Sidewalks along Cox Road and Franklin Boulevard are a priority for the City of Gastonia and appropriate bike/ped projects have been included in the draft 2045 MTP.
30	8/24/2017	Per Segment - Ironton (Alternative B) for Hwy 73 Realignment - Should not be done because of areas of flood zone.	All proposed new highway segments are conceptual/ideas that will be taken through a feasibility analysis. If the conceptual roadway improvement it is deemed necessary and feasible for future construction an environmental study will be conducted to address the flood zone.
31	8/24/2017	Need traffic light at Main St and Broad St	Traffic signals are installed based on feasibility/warrant analysis. This comment will be forwarded to NCDOT Division 12 offices as a signal warrant request.
32	8/24/2017	Need to move the electric box at Main and Broad - sight distance issue	Signal box placement is under the responsibility of NCDOT. This comment will be forwarded to NCDOT Division 12 offices as a site distance review request.
33	8/24/2017	Opposed to the proposed connection from York St (US 321) to MLK Jr Blvd along Rankin Ave	The proposed correction of offset intersections of Rankin Avenue/N. York Street and N. York Street/W. Walnut Avenue is a proposed alignment on the current GCLMPO CTP. This addition to the CTP is due to the recent closure of N. York Street to Long Avenue due to the Water Treatment Facility expansion and the need to correct the offset intersections. The area is a designated redevelopment area that would benefit from the proposed roadway realignment.
34	8/24/2017	In favor of extending Walnut to connect to US 321	The proposed correction of offset intersections of Rankin Avenue/N. York Street and N. York Street/W. Walnut Avenue is a proposed alignment on the current GCLMPO CTP. This addition to the CTP is due to the recent closure of N. York Street to Long Avenue due to the Water Treatment Facility expansion and the need to correct the offset intersections. The area is a designated redevelopment area that would benefit from the proposed roadway realignment.
35	8/24/2017	My attendance is to express my support for all projects within the GCLMPO with special support and concern for the project connecting Hwy 150 in Crouse to Hwy 321 in Lincolnton. This would give Cherryville a quicker access to not only Hwy 321 but I-77 and I-85 as well. Even though this is a carry over project, I would like to see a higher priority given to this project. My support would also be to the 4-laning of 279 from Dallas to Bess Town Road. Another project of great concern for the city and citizens of Cherryville. We need a better connection from our city to our county seat of Gastonia!	The NC 150 Bypass is a current new alignment location on the GCLMPO CTP. The new bypass alignment is an extension of STIP project #R-0617 to begin at NC 279 in Cherryville to relocated US 321 widening to multi-lanes part on new location.
36	8/24/2017	Finish Hudson Blvd and connect to Hwy 74 then I-85	The current GCLMPO CTP includes a proposed Hudson Boulevard extension segment to Linwood Road. This comment will be provided to the GCLMPO TCC and Board for consideration of a CTP amendment. The Gaston Parkway alignment could be utilized to accomplished the connection to US 74 and I-85.
37	8/24/2017	Lowell - maybe make Grove Street in front of Sundrop Hwy 7 and realign to Hwy 74	Lowell recently completed a Downtown traffic study along with a Cox Road/ Main Street Study with the City of Gastonia. The recommended comment is addressed in both studies.
38	8/24/2017	New Hwy 74 2 lane sections - move back left turn lane white lines 6 feet to help semi-trucks with 53 ft. trailers turn	Lane configurations on State maintained roads are the responsibility of NCDOT. This comment will be forwarded to the NCDOT Division 12 office for review and consideration.

Table B-1: Public Meeting Comments and Responses (August 2017) (Continued)

#	Date Received	Comment	Response
39	8/24/2017	Realign Hwy 7 Lowell/McAdenville and add I-85 interchange exit 24. Use 74 and Peach Orchard and upgrade and connect to I-85.	The realignment of Lowell/McAdenville Road will be address with the I-85 widening project as a replacement and improved interchange will be constructed. The placement of a new interchange on I-85 can only be considered east of Hickory Grove Road crossing and west of Exit 22 in Belmont. No new I-85 interchange is being proposed with the I-85 widening project.
40	8/24/2017	Shelby Bypass (74) needs to be finished sooner!	All phased segments of the Shelby Bypass are considered funded. This comment will be forwarded to NCDOT for consideration of expedited construction.
41	8/24/2017	U-2567 - Dixon/Dekalb - please consider feeding appropriate traffic to Uptown Shelby up Dekalb St - it is an easier access point for visitors to find that Lafayette St, which is an awful exit ramp. (Would LOVE to see the Laf/Dixon interchanged improved too!!)	There are numerous highway improvement projects, including U-2567, in the current 2018-2027 STIP that address these comments.
42	8/24/2017	U-5755 - 150/Marion - this is so needed! Terrible intersection - dangerous and crowded.	Project #U-5755 - NC150/Marion intersection improvement is funded in the current STIP with the environment work almost complete.
43	8/24/2017	Would it be possible to shift the rest of Hwy 18 traffic off of Lafayette onto Dekalb? It's already truck route 18.	Truck routes are the responsibility of NCDOT. This comment will be forwarded to NCDOT Division 12 for review and consideration.
44	8/24/2017	Bike/Ped in Uptown Shelby - would love to see more bike facilities around Uptown and Shelby in general. Sidewalks are needed to connect some neighborhoods to our central business district and the services within.	Bicycle and pedestrian improvements and connections as provided by the City of Shelby are included on the GCLMPO CTP Bike/Ped Map. The City of Shelby has provided many proposed project needs to the CTP.
45	8/24/2017	We are excited about the possible rail trail and would love to connect that to other bike/ped facilities around town (Shelby).	Bicycle and pedestrian improvements and connections as provided by the City of Shelby are included on the GCLMPO CTP Bike/Ped Map. The City of Shelby has provided many proposed project needs to the CTP.
46	8/24/2017	Cleveland County needs some bike paths. There's no safe place for people to ride bikes.	There are numerous on-street bicycle facilities proposed for Cleveland County through the GCLMPO's adopted CTP. With participation from Cleveland County and the local municipalities, the MPO's Bicycle and Pedestrian Advisory Committee is committed to push for the implementation of these projects.
47	8/24/2017	Shelby needs more public transportation. We don't need the bypass to take away from the proprietors on 74!	This comment will be forwarded to the City of Shelby for consideration and possible implementation.
48	8/24/2017	I do strongly say Shelby needs this [public transportation] cause we need help with elderly well as adults to stores, mall, or just to Walmart, library, it will be needed strongly.	Cleveland County and the City of Shelby have a demand response transit service provided by Transportation Cleveland County. At the present time, Shelby does not have a fixed route Transit System. This comment will be forwarded to the City of Shelby for future consideration and possible implementation.
49	8/24/2017	Accelerate the bypass.	All phased segments of the Shelby Bypass are considered funded. This comment will be forwarded to NCDOT for consideration of expedited construction.
50	8/24/2017	Accelerate the Shelby Bypass project.	All phased segments of the Shelby Bypass are considered funded. This comment will be forwarded to NCDOT for consideration of expedited construction.
51	8/24/2017	Dirt roads need to be paved.	NCDOT conducted an assessment of all dirt/unpaved roads statewide. The results of unpaved road miles along with resurfacing costs were staggering. At the present time, NCDOT does not have a funding source for the pavement and improvement of dirt roads statewide. This comment will be forwarded to NCDOT for review and consideration.
52	8/24/2017	The bridge that crosses the CSX Railroad tracks at the intersection of NC Highway 150 and South Main St. in Waco was constructed in 1955. When that bridge was constructed the traffic on S. Main St / Stony Point Rd. was much lighter than it is today. Not only has the Town of Waco grown in those 62 years, so have the surrounding communities. The daily volume of cars, trucks and busses that cross the bridge would have had to more than triple in the past 6 decades. The bridge is showing wear and needs to be strongly considered for replacement. Another area of concern with the current bridge would be its weight capacity. In 1955 the traffic crossing the bridge would have been mainly passenger cars and light trucks. Daily traffic today includes multiple tractor-trailer 18 wheelers; Case Farm feed trucks, and other dual and triple axel trucks hauling commerce into, out of and through the Waco Community. We are concerned for the continued safety of all persons crossing the bridge and would be interested in opening communications to address its replacement. The Town of Waco asked that this project be considered in the 2045 MTP.	Bridge analysis and replacement when warranted is the responsibility of NCDOT. Every bridge in the State is assessed annually. When bridges yield a score that warrants replacement, it is added to the STIP for replacement.
53	8/24/2017	Secondly we are interested in exploring the widening of the NC Highway 150 intersection of N. Main St / S. Main St. and the possibility of adding turning lanes. NC 150 is a busy highway and a conduit between the Lincolnton – Cherryville area and the City of Shelby. Traffic along NC Hwy 150 has ballooned over the years as the towns and communities neighboring Waco have experienced increasing growth. As the number of vehicles increases, so do traffic problems. Widening NC Hwy 150 and adding turning lanes would go a long way in lessening daily traffic congestion at the intersection. The Town of Waco asked that this project be considered in the 2045 MTP.	Project #U-5755 - NC150/Marion intersection improvement is funded in the current STIP with the environmental work almost complete.
54	8/24/2017	What needs to be addressed is short range and long range planning with these suggestions.: 1. More exits off of I-85 between Charlotte and Gaston County. 2. More service roads between each exits off I-85. 3. Service roads will help with traffic accidents and also help with local traffic getting to and from their homes in Gaston County. 4. Franklin Blvd. & Wilkinson Blvd. & Garrison Blvd. & long Ave. & E. Ozark Ave. will help with traffic if maximum use of these roads for future traveling. They can be improved using them as service roads in addition with NEW ONES. We need more service roads between exits on I-85.	The addition of exits along the interstate highway system is regulated by the US Federal Highway Department and the responsibility of NCDOT. The current distance requirement for interstate highway interchanges is one mile. In addition to the distance requirement, the interchange must be warranted. There are additional proposed interchanges on the GCLMPO CTP, but warrants have not been met.
55	8/24/2017	I would like to express how important the NC 150 projects connecting Shelby-Cherryville-Lincolnton 4 lanes is to our end of Gaston County from Highway from US 74 to US 321. I understand these are several different project numbers and timelines, but these are vital to future needs of the Cherryville area. Hopefully future scoring will be more favorable to these much desired lifelines to our community.	The NC 150 Bypass is a current new alignment location on the GCLMPO CTP. The new bypass alignment is an extension of STIP project #R-0617 to begin at NC 279 in Cherryville to relocated US 321 widening to multi-lanes part on new location.

Table B-1: Public Meeting Comments and Responses (August 2017) (Continued)

#	Date Received	Comment	Response
56	8/25/2017	<p>I am writing to you in regards to the Catawba Crossings project. We view this project of critical importance in supporting future growth for Mecklenburg, Gaston, Lincoln, and Cleveland counties. At the least, this project will offer the following:</p> <ul style="list-style-type: none">• Relieve congestion across the regions road network, including but not limited to I-85, I-485, US-74, and multiple regional roadways.• Improve access to between Gaston and Mecklenburg counties, the city of Charlotte, Charlotte Douglas Airport and the intermodal complex at CLT.• Access to the River District development which will include multiple new business, civic and residential developments.• Provide safety access benefits related to potential natural disaster or other crisis by adding capacity for residents to cross the river.• The Catawba Crossings project was ranked number one of thirty-two initiatives identified by the Gaston-wide business community’s Alliance for Growth plan adopted in 2014. <p>The Catawba Crossings project is vital to the continued economic health, congestion relief, and safety of the entire region. I support the funding and development of this project.</p>	<p>The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.</p>
57	8/25/2017	<p>I am the Market President for Gaston/Cleveland/Lincoln County markets for Wells Fargo and I wanted to reach out to you regarding the Catawba Crossings plan. It is a critical transportation project for Gaston County, Mecklenburg County and the Charlotte region. It will positively and directly impact citizens across the region and traveling through the region. Additionally, the increased access is vitally important to the economic health and continued growth of Gaston County, its many cities and towns and to Mecklenburg County and its municipalities. Existing congestion on our transportation arteries will constrain that growth and limit the economic potential for our citizens. I can’t express how important the Catawba Crossing project is to our community. It is singularly important to the continued economic health, congestion relief and safety of the entire region, and I support the funding and development of the project.</p>	<p>The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.</p>
58	8/25/2017	<p>I am responding as a concerned citizen of Gaston County pertaining to the proposed Catawba Crossing, which is critical to our future transportation for Gaston County and the Greater Charlotte Region. The density of southeastern Gaston County over the next several years is going to be immeasurable, and the congestion that already is, and will get worse, which includes I-85, Hwy 49 to 485 into Mecklenburg County, would get tremendous relief with access through the addition of the Catawba Crossing. From Gaston County, access would be enhanced to reach the Airport, along with the River District development too all of its new business, retail and residential locations throughout the region. The economic benefit is vitally important for Gaston County to grow its many cities and towns as well as Mecklenburg County and its municipalities. Congestion to our transportation arteries will constrain that growth and limit that economic potential for our citizens. There are a number of safety benefits to the region in times of natural disaster and also by reducing the mass numbers of cars that are having to travel the over populated I-85 from east and west. This project ranks as the highest ranked initiative to our business community. As a native of Gaston County, this is why I fully support the funding and development of the project!</p> <p>I am responding as a concerned citizen of Gaston County pertaining to the proposed Catawba Crossing, which is critical to our future transportation for Gaston County and the Greater Charlotte Region. The density of southeastern Gaston County over the next several years is going to be immeasurable, and the congestion that already is, and will get worse, which includes I-85, Hwy 49 to 485 into Mecklenburg County, would get tremendous relief with access through the addition of the Catawba Crossing. From Gaston County, access would be enhanced to reach the Airport, along with the River District development too all of its new business, retail and residential locations throughout the region. The economic benefit is vitally important for Gaston County to grow its many cities and towns as well as Mecklenburg County and its municipalities. Congestion to our transportation arteries will constrain that growth and limit that economic potential for our citizens. There are a number of safety benefits to the region in times of natural disaster and also by reducing the mass numbers of cars that are having to travel the over populated I-85 from east and west. This project ranks as the highest ranked initiative to our business community. As a native of Gaston County, this is why I fully support the funding and development of the project!</p>	<p>The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.</p>
59	8/26/2017	<p>The Catawba Crossings are very strategic to the region. They will provide critical transportation paths to relief the current congested corridors of I-85, 485 and Wilkerson Blvd. They will have a positive impact on economic development and sustainability of current businesses. Catawba Crossings was the highest-ranked initiative (out of 32) of the Gaston-wide business community’s Alliance for Growth plan adopted in 2014. This is badly needed infrastructure for our citizens in the region.</p> <p>Please support moving this project forward.</p>	<p>The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.</p>
60	8/29/2017	<p>I fully support the Catawba Crossings project, because it is essential to have another route into Mecklenburg County. How often have we all found ourselves sitting in traffic due to an accident, only to get onto Hwy 74 and find the same traffic situation? The growth that the county has seen over the last 10 years will continue. It is critical to look at the current situation, as well as the future and to fund the Catawba Crossings project.</p>	<p>The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.</p>
61	8/29/2017	<p>The purpose of this email is to express support from the Gaston Regional Chamber of Commerce for the Catawba Crossings project. Our Chamber has endorsed this effort and sees it as a critical transportation project for the Gaston-Cleveland-Lincoln area and the entire region. It will directly impact citizens from across the region in a positive way as well as individuals traveling through the area.</p> <p>The Catawba Crossings project opens up greater access between Gaston County and Mecklenburg County including the Charlotte-Douglas International Airport. This increased access is vitally important to the economic health and continued growth within our area.</p> <p>As we watch the events unfolding in Texas as that state recovers from the impact of Hurricane Harvey, we must note that the Catawba Crossings project would provide important safety benefits to the region in times of natural disaster or other crisis situations by adding to the region's transportation capacity across the Catawba River.</p>	<p>The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.</p>

Table B-1: Public Meeting Comments and Responses (August 2017) (Continued)

#	Date Received	Comment	Response
62	8/29/2017	As most, I believe that lack of an additional connection to Charlotte has stunted potential economic growth and development in this direction of Gaston County. As a local business leader I want to give my input to help get this necessary bridge approved. I also want to make sure Catawba Crossings also has pedestrian and bike lanes and not built for vehicles only. We MUST have additional connections to Charlotte for the future and growth of Gaston County.	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
63	8/29/2017	<p>The Gaston Regional Chamber of Commerce wholeheartedly endorses the Catawba Crossings project. As the Chair Elect of the Chamber's Board of Directors, I look forward during the coming year to working with the Gaston-Cleveland-Lincoln Metropolitan Planning Organization to move this initiative forward.</p> <p>Catawba Crossings is a critical transportation project for Gaston County, Mecklenburg County, and our entire region. Without question, this effort will have a lasting and positive impact on many of our citizens. It will relieve congestion, promote economic growth, improve safety, and provide jobs.</p>	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
64	8/29/2017	<p>The Greater Gaston Development Corporation (GGDC) is a business-driven nonprofit organization whose members include many of the leading corporations in Gaston County as well as educational and municipal units of Government. We are pleased to provide these comments which focus on the Catawba Crossing project as part of the 2045 MTP development process. As you may know, the Catawba Crossings project was the highest economic priority for Gaston County in the GGDC's Alliance for Growth plan developed by community leaders in 2014. We believe this highly-important regional project is critical to address today's needs and prepare for our region's future.</p> <p>Catawba Crossings will positively impact citizens across the region and traveling through the region on all major arteries. It would serve to relieve congestion across the region's road network, especially I85, I485, Hwy 49, and US74 among other regional interstates, highways and roadways. This clearly makes Catawba Crossings a critical transportation project for Gaston County, Mecklenburg County and the entire Charlotte region.</p> <p>Catawba Crossings would provide new and improved access from Gaston County to the new River District regional development project in Mecklenburg County with its very significant business, retail, civic and residential uses; while providing access from the River District to residential, business, recreational, cultural and other uses in Gaston County and northern York County. Catawba Crossings also would provide new and improved access to and from I485 both north and south and to I77 both north and south. In addition to the project's impact throughout the larger region, it would provide new and improved access to and from Charlotte Douglas Airport and its intermodal Center for southern Gaston County, Belmont, Gastonia, Cramerton, McAdenville, Mount Holly and northern York County. It is clear that the economic impact of expanded access across the South Fork and Catawba Rivers would be great, supporting residential, office, commercial, retail and industrial development with the resulting jobs, increase in the tax base and improvement to our region's economy. It will also relieve congestion that is growing worse steadily and provide alternative travel routes in times of emergency. We strongly support this project which will have a highly-positive impact at the regional and state levels.</p>	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
65	8/29/2017	<p>As a small business owner and past Chairman of the Greater Gaston Development Corporation – Alliance for Growth, I strongly endorse the resolution passed by our GCLMPO regarding the Catawba Crossings Development.</p> <p>From an Economic Development perspective there is nothing more crucial than to provide access into southern Gaston County from Charlotte International Airport and Mecklenburg County. As it relates to Safety, an additional route is desperately needed in the event of natural disaster or terrorist activities.</p>	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
66	8/29/2017	<p>I am writing to express my support for the Catawba Crossings Project. I really believe this is a project that can no longer wait or be put aside. Gaston County residents are in desperate need of an additional route to enter Mecklenburg County. I strongly feel that our current and limited options will stunt the growth of the economic development of Gaston County and discourage people working in Mecklenburg County and surrounding areas from seeking residency or employment in Gaston County.</p> <p>I am also concerned about the age and stability of the current bridge located on 74 in Belmont. I often wonder how much longer can the bridge withstand the increasing amount of traffic it endures each and every day. The bridge needs the relief and help the Catawba Crossings Project could offer.</p>	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
67	8/30/2017	<p>I am a Gaston County native and current resident writing to express my support of the vital Catawba Crossing project. As Gaston County continues growing, our infrastructure must grow with the population. It is imperative that this project succeed to provide our residents the quality of life that all humans deserve. Catawba Crossing will alleviate traffic constraints for commuters, allow an artery for economic growth in Southern Gaston and will provide more of a perceived connection to the Charlotte area that is currently lacking. It's my belief that our great community will continue our unique identity as we become more accessible to Mecklenburg County, and that we need to embrace the geographic proximity and foster positive relations with Charlotte and Mecklenburg. Stronger access will foster those relationships.</p> <p>I personally drive in to Charlotte for graduate school classes and other meetings at least twice a week. Last week, I was stuck in traffic on I-85S for about 45 minutes in a 2 mile stretch (where 485 merges into 85). Forty-five minutes for 2 miles! That made the over all travel time from my destination (normally 30 minutes) over an hour. This takes away from time that our residents could spend working, being with their families or serving our community. If there were another option for commuters to utilize, a lot of these quality of life traffic issues could be alleviated.</p> <p>Please consider my comments as strong support of the Catawba Crossing project.</p>	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
68	8/30/2017	I favor the idea to build the bridge across the lower South Point peninsula to Mecklenburg County because of the impact it will have on economic growth as well as facilitating transportation to the intermodal hub at the airport.	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
69	8/30/2017	GCLMPO SPOT 5.0 Top Priority needs to be the Catawba River Crossing from I-485 in the east to NC 279, South New Hope Road in the west. I-85 with 140,000 daily traffic and Hwy 74 with 22,000 daily traffic counts, that was original designed as a 2-lane bridge cannot handle the current traffic levels. With population and traffic projections in the metro area rising faster than the national average the existing roads will not be able to move people from home to work in an efficient manner. Gaston County is the third highest in the region in the number of people commuting to Charlotte on three existing bridges at 32,937 per day.	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.

Table B-1: Public Meeting Comments and Responses (August 2017) (Continued)

#	Date Received	Comment	Response
70	8/30/2017	The Catawba Crossing is currently projected to cost \$200 million. Developers on the both sides of the river will be kicking in new roads that will reduce that number drastically. The River District will be putting in the road infrastructure from I-485 to the Catawba River thereby reducing the CRTPO contributions to one-half of a bridge to cross the Catawba. Two developments under consideration in Gaston County will also reduce the overall cost of the project.	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
71	8/30/2017	<p>Charlotte-Mecklenburg and the surrounding counties have seen tremendous growth over the past three decades and now the post-recession growth is coming to Gaston County. We would like for the growth to be manageable and a good mixture of commercial-industrial and residential properties. Currently in Belmont and Cramerton have 1,350 neighborhood homes approved and additional neighborhoods under consideration will contribute another 5,300 homes. The roads in this area are the same as they have been for more than 30 years, two lane road with soft shoulders.</p> <p>South Carolina is sending more and more people North through Belmont and Cramerton as they head to work in downtown Charlotte or North Mecklenburg. Traffic is increasing and our road are the same.</p>	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
72	8/30/2017	<p>Growth is here and we need to plan. Fifty percent of the resident of Gaston County live in in the East and Southeast of the county and they are closer to the \$16 Billion Economic engine that is Charlotte Douglas International Airport. They just finished a \$1.2 B expansion and have begun work on a \$2 B expansion that will include a 12,000-foot runway for non-stop flights to Asia.</p> <p>As a community, we must also address the 19 million tons of coal ash at the Allen plant, Belmont. This coal ash can be used in many processes to provide concrete for retention wall blocks, sound barrier along the Phase I of the I-85 widening project, and bridge material for 13 new bridges and 6 new interchanges along this project. The concrete can be used to build the Catawba Crossing and the new airport runway that will need more than 7.2 million cubic feet of concrete just for the runway.</p> <p>Let’s work together in the Charlotte Metro Region to keep industry, residents and their tax dollars in North Carolina instead of sending them south.</p>	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
73	8/30/2017	<p>As the Chairman of the Board of Directors of the Gaston Regional Chamber of Commerce, I want to express my support and that of our Chamber for the Catawba Crossings project that is currently being reviewed by the Gaston-Cleveland-Lincoln Metropolitan Planning Organization.</p> <p>Catawba Crossings will provide a much needed additional connection to I-485, the Charlotte-Douglas International Airport, the emerging River District, and Mecklenburg County in general. Gaston County currently has only four crossing over the river with none of them located in the southern part of our county.</p> <p>Catawba Crossings will be an important vehicle to aid in the continued economic health of our region as well as relieve congestion in our transportation corridors. On behalf of the Gaston Regional Chamber of Commerce, I want to thank you for the opportunity to express my support for this effort. Please let me know if you have any questions.</p>	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
74	8/30/2017	<p>On behalf of CaroMont Health, I wish to commend the Gaston-Cleveland-Lincoln Municipal Planning Organization on the thoroughness of this review and the efforts made to engage with citizens and businesses in this important endeavor. I am pleased to submit these comments pertaining to the Gaston-Cleveland-Lincoln Metropolitan Transportation Plan in support of the Catawba Crossings Project and urge managing parties to make the implementation of this project a top priority for citizens in our county and across the region.</p> <p>CaroMont Health is an independent healthcare system headquartered in Gastonia. Anchored by CaroMont Regional Medical Center, a 435-bed acute care hospital, the system has facilities and physician offices in five counties and two states. The expansive scope of our healthcare system, both in service offerings and geography, requires that our patients, medical teams and employees rely on our county to provide the needed infrastructure and services. At CaroMont Health, three key groups are at the center of every decision we make - our patients and their families, our employees and our community. We have considered them in the comments to follow.</p> <p>There is a well-known saying in healthcare that states, "Time is tissue." For major health crises like heart attacks, stroke and trauma, time is of the essence. Every second counts when a major organ is deprived of adequate oxygen, and in these moments, quick access to health care facilities is critical. The shutdown of a roadway or major traffic delay could, in some cases, mean the difference between recovery and permanent damage to a person's health. The Catawba Crossings Project would serve to relieve congestion across the region's road networks, make our roadways safer and alleviate delays not only for general transit, but for emergency response as well.</p> <p>Every day, families are moving in and businesses are considering our region for relocation. We are mere miles from the 5th busiest airport in the country and the 6th in the world - things are happening here, and we must be sure our infrastructure can support an influx of commerce and industry. The approval and expedited implementation of this plan is critical to support the population and economic growth coming to our region. In a state that grows by nearly 100,000 people each year, with nearly half of that growth happening in Wake and Mecklenburg Counties, being poised to accommodate this growth and use it to strengthen our local economy is critical. Additionally, we must make useable land accessible to major roadways - a key component of economic growth and development - and we must have bypasses and connectors that allow for the transport of goods and services without detour or delay.</p> <p>In closing, our vision at CaroMont Health is to promote individual health and vibrant communities. We firmly believe the forward movement of this project will help our community achieve both. CaroMont Health appreciates the opportunity to provide these comments in support of this project and the benefit it provides our community.</p>	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.
75	8/30/2017	This access [Catawba Crossings] is essential to the future of Gaston County. The reasons have been eloquently stated. The bottom line, is that without this access, Gaston County will continue to be a second class citizen of the Region.	The Catawba Crossings project is included in the GCLMPO CTP, as well as a project listed in the 2040 MTP. Moving forward, the GCLMPO will be submitting the Catawba Crossings project for ranking and prioritization in P5.0 for funding in the future 2020-2029 STIP.

Table B-2: Public Meeting Comments and Responses (February 2018)

#	Date Received	Comment	Response
1	2/8/2018	Other comment: Traffic Flow and Truck Lane Restriction. Note: 1-85 SC mile 102 down to mile 79? Active widening, short ramps, concrete barriers, 2 lane section each direction. In SC: Trucks thru that area are restricted to the left lane. I suggest realign truck restriction of I-85 northbound mile 18 thru 26 to the left lanes, not the current right. That allows smaller vehicles more room to enter or exit I-85 safer and easier. I believe early morning merge delays at Lowell east would lighten. Costs would be signage.	This comment has been shared with NCDOT, as well as the GCLMPO Technical Coordinating Committee (TCC) and MPO Board.
2	2/8/2018	Photos on flyer: I do not think our MPO could get economy of scale in either air or rail given proximity to Charlotte facilities.	This comment has been shared with NCDOT, as well as the GCLMPO Technical Coordinating Committee (TCC) and MPO Board.
3	2/13/2018	We live on Lake Norman near Denver. New home Construction here is out of control with no end in sight. It's no longer possible to get to Mooresville in less than an hour unless you're very lucky. It used to be 15 minutes five years ago. The situation on 16 is also busy and treacherous when trying to get from 150 to 73. School traffic and work traffic of course is the worst. Help is desperately needed.	This comment has been shared with NCDOT, as well as the GCLMPO Technical Coordinating Committee (TCC) and MPO Board. The widening of NC 16 BUS from NC 73 to Fairfield Forest Road is a funded project, with construction scheduled to begin in 2026. In addition, the widening of NC 16 BUS from Fairfield Forest Rd to Webbs Road has been submitted for funding in the state's current round of prioritization.
4	2/13/2018	I cannot believe how little the simple cloverleaf is used in North Carolina. Every intersection has 50 thousand traffic lights, which use electricity, fuel in cars, road rage from sitting in traffic, and I could go on and on. A simple cloverleaf has been around for years, and even in Chicago 50 years ago. Southbound traffic on 321 where it runs into I85 backs up for miles. A simple cloverleaf at the intersection would stop all of it.	This comment has been shared with NCDOT, as well as the GCLMPO Technical Coordinating Committee (TCC) and MPO Board. Interchange improvements are currently under construction at I-85/321 (NCDOT Project # I-5000), focused on improving safety and reducing congestion at the interchange. More information can be found at http://gclmpo.org/transportation-projects/road-bridge-project-funded/ .
5	2/14/2018	Our region must prioritize widening I-85 through Gaston County or provide another crossing into or from Mecklenburg County across the Catawba River. This has to be one of the worst stretches of highway in state (I-85 through Gaston County). Review crash data for stretch near Belmont and Belmont Abbey College. I see it everyday. Accidents, injuries, and death daily because of poor local planning, inattention by NCDOT, and poor representation by our local leaders who let population growth far exceed capacity of this vital corridor. Widening this stretch of highway must be top priority. The time for excuses is over. A drop everything else fix is needed. Please place widening I-85 number 1 on the list.	This comment has been shared with NCDOT, as well as the GCLMPO Technical Coordinating Committee (TCC) and MPO Board. The widening of I-85 from NC 273 (Belmont-Mt. Holly) to US 321 in Gastonia is a funded project, with construction scheduled to begin in 2021. More information can be found at https://www.ncdot.gov/projects/i85-widening-gaston-county/ . In addition, the GCLMPO is working closely with NCDOT to ensure the funding will be allocated to widen I-85 from US 321 to the South Carolina State Line in future years. The Catawba Crossings project, a new bridge crossing of the Catawba River, continues to be a priority as well.
6	2/14/2018	The 2040 Metropolitan Transportation Plan seems to be wishful thinking. If all goes as planned according to the 2040 plan, what will Gastonia have in the way of public transportation by the year 2040 that they don't currently have? What case can be made for light rail? Our Transit bus system, even with the extended service hours approved, barely has enough ridership to continue operation. In essence, what will Gastonia look like in 2040? Why do city officials discourage and dismiss the private sector in needed public transportation? Why should the state and federal pour money into our city's public transportation needs when there're isn't anywhere near a substantial demand? Do the city officials intend to outlaw personal vehicles in the future? Most people don't desire Gastonia to become another Charlotte, Atlanta, Chicago or New York. Of course, we want to see some growth, but not at the expense of seeing our city disintegrate into the horrors of big cities. Thus far, the case hasn't been made as to why the citizens should support any of the transportation changes slated to be made in the near future.	These comments have been shared with Gastonia Transit, as well as the GCLMPO Technical Coordinating Committee (TCC) and MPO Board. The GCLMPO MTP is multi-modal and focuses on the safe and efficient use of all transportation facilities.
7	2/17/2018	Could Exit 10 Southbound I-85 to Westbound 74 be expanded to two lanes. Many time there seem to be as many vehicles exiting as there are continuing South on 85. Also it would help if the lane restriction for trucks would end at Exit 13 instead of right before exit 10. Many time truckers will remain in the right lane until they see the Right Lane Ends notice for exit 10.	This comment has been shared with NCDOT, as well as the GCLMPO Technical Coordinating Committee (TCC) and MPO Board. GCLMPO staff will look further into the potential need for an additional lane at exit 10.
8	2/15/2018	Increased E-W access from Business 16 to Bypass 16 will be very useful, as will several projects in the works to widen Hwy 73 and to ease up bottlenecks at various intersections on 16. Traffic lights at jug handle access to Bypass 16, or real interstate like access design implementation improves on what we have now. I think that on and off ramps are preferable to traffic lights. Why slow down a 60 or 65 mph road?	This comment has been shared with NCDOT, as well as the GCLMPO Technical Coordinating Committee (TCC) and MPO Board. The GCLMPO's Comprehensive Transportation Plan (CTP) includes a proposed connection from NC 16 BUS to NC 16 BYP at Wallace Lane. This is currently an unfunded project and not included in the 2045 Metropolitan Transportation Plan (MTP). The widening of NC 73 from NC 16 BUS to Northcross Drive in Mecklenburg County is a funded project in the 2018-2027 State Transportation Improvement Program (STIP), with the design underway.
9	2/15/2018	Business 16 is our Main Street. Designs with medians that can be planted is huge for appearance sake, as opposed to a concrete strip, or God forbid, jersey barriers. Storm water drains and sidewalks are a must. Lincoln County may not fund its share of sidewalk expense; I'd be shocked if it did. There is move to incorporate Denver. We'll know one way or the other after a referendum that is targeted for November, 2020. One of the purposes of incorporating is to create a road matching fund that would be far larger than that which the County envisions to assist NC DOT with East Lincoln County needs.	This comment has been shared with Lincoln County and NCDOT, and will be presented to the GCLMPO Technical Coordinating Committee (TCC) and MPO Board.

Table B-2: Public Meeting Comments and Responses (February 2018) (Continued)

#	Date Received	Comment	Response
10	2/26/2018	<p>I am writing today because I have read repeated articles in the Gazette lately about road improvement projects on the OTHER side of town. Well I am tired of the west side being IGNORED yet again by you SERVANTS and the SERVANTS on the state level.This is the epitome of TAXATION WITHOUT REPRESENTATION and maybe us folks in the Chapel Grove and Crowders Mountain areas should dump tea on your doorsteps or in this case asphalt.Chapel Grove and Linwood Roads are heavily traveled, obsolete and DANGEROUS. Not to mention the section of Chapel Grove Road between Linwood and Old Providence is a gauntlet of dead and dying trees just waiting to fall on hapless commuters!!If it happens to me or mine,you damn skippy I will come after your personal assets. I have made repeated calls to Kenny Bowman who is supposedly the NCDOT "supervisor" in this area over the past few months,not only has this asshole not returned my calls, I have yet to see any effort made on the part of the county or state to rectify this dangerous situation.The county told me the state "maintains" this road,that would imply the state has actually done work on it which I have seen NO evidence of in decades.The people of Chapel Grove ALSO PAY TAXES. And if Crowders Mountain is as an important tourist draw as you SERVANTS claim it is, then why the hell have NO infrastructure improvements been made in this area for easier access for the tourists and the people living here? It seems the ONLY time we ever see any of you SERVANTS out here is when your goons squads are setting up UNCONSTITUTIONAL road blocks for "safety". \$\$\$\$...These roads are meandering 2 lane paved over trails that were built when? The 40's,50's,60's? Yet here we are in 2018 with more subdivisions being built and NO infrastructure projects to support the increased populations and God help you when,NOT if, you get behind some asshole doing 30 in a 45, you will NOT be able to pass them.The "state" of NC ranks 8th in the nation in the extortion you SERVANTS call road usage "fees" (taxes,registration,gas taxes..etc...) yet the roads are 30 years behind the times and in Chapel Grove they are 50 years behind the times.Where the hell did all that money go? And why are we NOT being served?!! DEMAND REAL answers!!! And will not stop, even if I have to bring the media to offices all the way to the top of the SERVANT food chain in Raleigh.</p>	<p>Your comments have been shared with NCDOT Division 12 staff and were presented to the MPO Board at their meeting on March 22, 2018 with a recommendation to pay particular attention to proposed projects in your area during the next TIP Development Process. All potential projects are scored through an adopted ranking methodology prior to being submitted to the state for prioritization.The extension of Hudson Boulevard from Davis Park Road to Chapel Grove Road was submitted for the state’s current round of prioritization. The data-driven process to update the State Transportation Improvement Program for 2020-2029 – called strategic prioritization – began in summer 2016 when NCDOT and local planning organizations gathered public feedback on projects and later submitted projects to be evaluated – or scored – for the plan. From July to September 2017, NCDOT’s 14 transportation divisions – as well as local planning organizations across North Carolina – tested and submitted projects to be evaluated. In August 2017 NCDOT divisions held public meetings to gather public feedback on projects to submit for evaluation. NCDOT will review and score projects that were submitted for evaluation. More information regarding this process, including a development timeline, can be found at https://www.ncdot.gov/strategictransportationinvestments/2020-2029.html. In addition, improvements to Linwood Road are included in the MPO's 2045 Metropolitan Transportation Plan (MTP), and could be considered for the next round of prioritization.</p>
11	2/28/2018	<p>I have been asked by the Town of Waco Board of Alderman to contact you concerning the 2045 Metropolitan Transportation Plan. The Board and I support many of the projects related to the State Transportation Improvement Program (STIP) but we want to address two specific transportation concerns that directly affect the Town of Waco. The Board and I strongly support the plan that is in place to widen Hwy 150 (Cherryville Rd.) from Delview Rd. in Cherryville to Marion St. in Shelby. NC Hwy 150 is a busy highway and a conduit between the Cherryville area and the City of Shelby. Traffic along NC Hwy 150 has ballooned over the years as the towns and communities neighboring Waco have experienced increasing growth. As the number of vehicles increases, so do traffic problems. Widening NC Hwy 150 and adding turning lanes would go a long way in lessening daily traffic congestion at the intersection. The second project that we would like the GCLMPO to consider is related to the bridge that crosses the CSX Railroad tracks at the intersection of NC Highway 150 and South Main St. in Waco. The currenty bridge was constructed in 1955. When that bridge was constructed the traffic on S. Main St / Stony Point Rd. was much lighter than it is today. Not only has the Town of Waco grown in those 62 years, so have the surrounding communities. The daily volume of cars, trucks and busses that cross the bridge would have had to more than triple in the past 6 decades. The bridge is showing wear and needs to be strongly considered for replacement. One serious area of concern with the current bridge would be its weight capacity. In 1955 the traffic crossing the bridge would have been mainly passenger cars and light trucks. Daily traffic today includes multiple tractor-trailer 18 wheelers; Case Farm feed trucks, and other dual and triple axel trucks hauling commerce into, out of and through Waco Community. We are concerned for the continued safety of all persons crossing the bridge and would be interested in opening communications to address replacement. The Town of Waco supports these two projects as they relate to the 2045 Metropolitan Transportation Plan by the Gaston-Cleveland-Lincon MPO. We look forward to your comments.</p>	<p>These comments have been shared with NCDOT, as well as the GCLMPO Technical Coordinating Committee (TCC) and MPO Board. The widening of NC 150 from NC 180 (N Post Road) in Shelby to Delview Road in Cherryville is included in the 2045 MTP as a horizon year 2045 project. GCLMPO staff will make sure that the concerns regarding the bridge crossing of the railroad near the intersection of S Main Street and NC 160 is brought to the attention of NCDOT Division 12.</p>

Appendix C:

Title VI Complaint Procedures

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Title VI Complaint Procedures



GASTON CLEVELAND LINCOLN MPO: TITLE VI COMPLAINT PROCEDURES

INTRODUCTION

The complaint procedures outlined herein apply to the Gaston Cleveland Lincoln MPO (hereinafter referred to as the “MPO”) and other primary recipients and sub-recipients of State and Federal financial assistance. These procedures cover discrimination complaints filed under Title VI of the Civil Rights Act of 1964, Civil Rights Restoration Act of 1987, Section 504 of the Rehabilitation Act of 1973, and other nondiscrimination authorities relating to any program, services, or activities administered by the Federal and State government and its sub-recipients (e.g., transit systems, MPOs, universities, and counties), consultants, and contractors. **NOTE:** The MPO will investigate transit related complaints only on the non-discrimination basis of race, color, and national origin.

The MPO will make every effort to obtain early resolution of complaints at the lowest level possible. Complaints of alleged discrimination will be investigated by the appropriate authority. The option of informal mediation meeting(s) between the affected parties and the Office of Civil Rights (OCR) staff may be utilized for resolution. Upon completion of each investigation, the OCR staff will inform every complainant of all avenues of appeal.

PURPOSE

The purpose of the discrimination complaint procedures is to describe the process used by the NCDOT for processing complaints under Title VI of the Civil Rights Act of 1964, related statutes and authorities.

FILING OF COMPLAINTS

1. **Applicability** – The complaint procedures apply to the beneficiaries of the MPO’s programs, activities, and services, including but not limited to the public, contractors, subcontractors, consultants, and other sub-recipients of federal and state funds.
2. **Eligibility** – Any person or class of persons who believes that he/she has been subjected to discrimination or retaliation prohibited by any of the Civil Rights authorities, based upon race, color, sex, age, national origin, or disability may file a written complaint with the City of Gastonia’s Human Resources Department, and NCDOT’s Civil Rights Office. The law prohibits intimidation or retaliation of any sort. The complaint may be filed by the affected individual or a representative and must be in writing.
3. **Time Limits and Filing Options** – A complaint must be filed no later than 180 calendar days after the following:
 - The date of the alleged act of discrimination; or
 - The date when the person(s) became aware of the alleged discrimination; or
 - Where there has been a continuing course of conduct, the date on which that conduct was discontinued or the latest instance of the conduct.

Title VI complaints may be submitted to the following entities:

- **The City of Gastonia**, ATTN: Glen Altman, Human Resources Department, P.O. Box 1748, Gastonia, NC 28053; 704-866-6861

Title VI Complaint Procedures (Continued)

- **North Carolina Department of Transportation**, Office of Civil Rights, Title VI/EO Contract Compliance Section, 1511 Mail Service Center, Raleigh, NC 27699-1511; 919-508-1830 or toll free 800-522-0453
 - **US Department of Transportation**, Departmental Office of Civil Rights, External Civil Rights Programs Division, 1200 New Jersey Avenue, SE, Washington, DC 20590; 202-366-4070
 - **Federal Highway Administration**, Office of Civil Rights, 1200 New Jersey Avenue, SE, 8th Floor, E81-314, Washington, DC 20590, 202-366-0693 / 366-0752
 - **Federal Highway Administration**, North Carolina Division Office, 310 New Bern Avenue, Suite 410, Raleigh, NC 27601, 919-747-7010
 - **Federal Transit Administration**, Office of Civil Rights, ATTN: Title VI Program Coordinator, East Bldg. 5th Floor – TCR, 1200 New Jersey Avenue, SE, Washington, DC 20590
 - **Federal Aviation Administration**, Office of Civil Rights, 800 Independence Avenue, SW, Washington, DC 20591, 202-267-3258
 - **US Department of Justice**, Special Litigation Section, Civil Rights Division, 950 Pennsylvania Avenue, NW, Washington, DC 20530, 202-514-6255 or toll free 877-218-5228
4. **Format for Complaints** – Complaints shall be in **writing** and **signed** by the complainant(s) or a representative and include the complainant’s name, address, and telephone number. Complaints received by fax or e-mail will be acknowledged and processed. Allegations received by telephone will be reduced to writing and provided to the complainant for confirmation or revision before processing. Complaints will be accepted in other languages including Braille.
5. **Complaint Basis** – Allegations must be based on issues involving race, color, national origin, sex, age, or disability. The term “basis” refers to the complainant’s membership in a protected group category. Allegations against **transit** entities must be based on issues involving **only** race, color, or national origin.

Protected Categories	Definition	Examples
Race	An individual belonging to one of the accepted racial groups; or the perception, based usually on physical characteristics that a person is a member of a racial group	Black/African American, Hispanic/Latino, Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, White
Color	Color of skin, including shade of skin within a racial group	Black, White, light brown, dark brown, etc.
National Origin	Place of birth. Citizenship is not a factor. Discrimination based on language or a person’s accent is also covered by national origin.	Mexican, Cuban, Japanese, Vietnamese, Chinese
Sex	Gender	Women and Men
Age	Persons of any age	21 year old person
Disability	Physical or mental impairment, permanent or temporary, or perceived.	Blind, alcoholic, para-amputee, epileptic, diabetic, arthritic

COMPLAINT NOTIFICATION

1. When a complaint is received, the Title VI Section will provide written acknowledgment to the Complainant, within ten (10) business days by registered mail.

Title VI Complaint Procedures (Continued)

2. If the complaint is complete and no additional information is needed, the complainant will be sent a letter of acceptance along with the Complainant Consent/Release form.
3. If a complaint is deemed incomplete, additional information will be requested, and the Complainant will be provided 30 business days to submit the required information. Failure to do so may be considered good cause for a determination of no investigative merit.
4. Within 15 business days from receipt of a complete complaint, the Title VI Section will determine its jurisdiction in pursuing the matter and whether the complaint has sufficient merit to warrant investigation. Within five (5) days of this decision, the Title VI Section will notify the Complainant and Respondent, by registered mail, informing them of the disposition.
 - a) If the decision is not to investigate the complaint, the notification shall specifically state the reason for the decision.
 - b) If the complaint is to be investigated, the notification shall state the grounds of the MPO's jurisdiction, while informing the parties that their full cooperation will be required in gathering additional information and assisting the investigator.
5. If the complaint is incomplete, the Complainant will be contacted in writing or by telephone to obtain the additional information. The complainant will be given 15 calendars days to respond to the request for additional information.
6. The Complainant will be notified that the MPO will attempt to resolve complaints within 180 days after the MPO has accepted the complaint for investigation.

TITLE VI COMPLAINT LOG

CASE NO.	COMPLAINANT	RACE GENDER	RESPONDENT	BASIS	DATE COMPLAINT FILED	DATE COMPLAINT RECEIVED	ACTION TAKEN	DATE INVESTIGATION COMPLETED	DISPOSITION

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Appendix D: MTP Project Solicitation and Ranking Process

GCLMPO 2045 MTP Project Solicitation and Ranking Process.....	D2
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GCLMPO 2045 MTP Project Solicitation and Ranking Process

Gaston-Cleveland-Lincoln MPO
2045 Metropolitan Transportation Plan (MTP)
Project Solicitation and Ranking Process

Adoption Date: May 25, 2017

The **Metropolitan Transportation Plan (MTP)** for the GCLMPO is the locally-adopted, fiscally-constrained, long-range transportation plan for Cleveland, Gaston, and Lincoln counties. The MTP is also a comprehensive plan that defines the multi-modal transportation network that will serve both present and projected volumes of vehicular traffic, public transportation use, bicycle, pedestrian, aviation and freight travel in and around the urban area. The MTP is based on the most accurate and complete information available including, but not limited to, population and economic development growth and land development patterns in and around the urban area.

Schedule

Call for Projects: The MPO solicited candidate projects for 30 days in April 2017. The results of this call for projects will be presented to the MPO Board at its July 2017 meeting.

Project Ranking Timeline: Upon approval of the ranking methodology set forth in this document, MPO staff will evaluate candidate projects for the three counties in June 2017 and will present a draft fiscally constrained project list to the TCC and MPO Board at their July 2017 meetings.

Public Comment Period: Upon the MPO Board's approval of the fiscally constrained project list at their July 2017 meeting, a public comment period will be held for 30 days in August 2017.

Public Input Process

Project Solicitation: The MPO announced a 30-day project solicitation period to all member governments and interested persons. The MPO issued press releases in newspapers of general circulation in Cleveland, Gaston, and Lincoln counties soliciting candidate projects. The MPO also held a public input session in each of the three counties in April 2017. Information regarding the public input sessions and this solicitation period was also advertised through the MPO website.

Ranking Process

Regional Level Highway Projects: All NC routes, US 29, and US 74 east of I-85 in Gaston County are found on the Regional Level. These highway projects will be evaluated by the criteria and scoring as detailed in the following table:

GCLMPO 2045 MTP Project Solicitation and Ranking Process (Continued)

Regional Level Highway Projects (Max Total Score: 110 points)					
Criteria	0 points	5 points	10 points	15 points	20 points
Existing Congestion (20 max)	Volume to capacity less than 0.6	Volume to capacity btw 0.6 and 0.85	Volume to capacity btw 0.86 and 1.0	Volume to capacity btw 1.01 and 1.1	Volume to capacity over 1.1
Existing Safety (20 max)	SPOT safety points less than 30	SPOT safety points btw 31-50	SPOT safety points btw 51-65	SPOT safety points btw 66-80	SPOT safety points over 80
Cost-Effectiveness (15 max)	Cost per vehicle/equivalent greater than \$1,500 per mile	Cost per vehicle/equivalent btw \$1,000-\$1,500 per mile	Cost per vehicle/equivalent btw \$500-\$999 per mile	Cost per vehicle/equivalent less than \$499 per mile	-----
Freight Volume (10 max)	Less than 500 trucks/equivalent per day	Btw 500-1,000 trucks/equivalent per day	More than 1,000 trucks/equivalent per day	-----	-----
Transportation Plan Consistency (10 max)	Project is not in the CTP	Project type, such as intersections, not considered in plans	Project is in the CTP	-----	-----
Cost (10 max)	Cost over \$50 million	Cost \$25-49 million	Cost less than \$25 million	-----	-----
Multimodal Accommodation (5 max)	Project does not include bike/ped/transit/rail facilities	Project includes bike/ped/transit/rail facilities	-----	-----	-----
Supports Environmental Justice (EJ) (5 max)	Project adds capacity or accessibility where growth is not encouraged	Project adds new capacity or accessibility in support of EJ	-----	-----	-----
Supports Land Use (5 max)	Project could negatively impact the land use of the area and does not support an adopted Land Use Plan	Project will have no impact or make positive improvements to the area's land use and supports an adopted Land Use Plan	-----	-----	-----
Supports Economic Development (5 max)	Project does not support economic development	Project supports economic development	-----	-----	-----
Local Funding Contribution (5 max)	No local funding	At least 5% local funding of total project cost (or 25% for locally-administered projects)	-----	-----	-----

GCLMPO 2045 MTP Project Solicitation and Ranking Process (Continued)

Division Level Highway Projects: All highway projects on SR roads and local roads will be evaluated by the criteria and scoring as detailed in the following table:

Division Level Highway Projects (Max Total Score: 105 points)					
Criteria	0 points	5 points	10 points	15 points	20 points
Existing Lack of Capacity (20 max)	Volume to capacity less than 0.5 (roads and rail), existing facilities available (other modes)	X	Volume to capacity btw 0.51 and 0.75 (roads and rail), intermittent or incomplete facilities/transit available (other modes)	X	Volume to capacity over 0.75 (roads and rail), no facilities/transit available (other modes)
Cost-Effectiveness (20 max)	Cost per daily user greater than \$4,000 per user per mile	Cost per daily user btw \$2,000-\$4,000 per user per mile	Cost per daily user btw \$1,500-\$1,999 per user per mile	Cost per daily user btw \$1,000-\$1,499 per user per mile	Cost per daily user less than \$999 per user per mile
Total Cost (10 max)	Cost over \$10 million	Cost \$5-10 million	Cost less than \$5 million	-----	-----
Plan Consistency (10 max)	Project is not in an adopted land use, transportation, transit or other plan	Intersections not improving recommended corridors	Project supports an adopted land use, transportation, transit or other plan	-----	-----
Project Readiness (10 max)	Significant ROW, EJ or environmental impacts	Moderate ROW, EJ or environmental impacts	No ROW, EJ or environmental impacts	-----	-----
Multimodal Accommodation (10 max)	Project does not include bike/ped/transit/ rail facilities	X	Project includes bike/ped/transit/ rail facilities	-----	-----
Supports Environmental Justice (EJ) (5 max)	Project adds capacity or accessibility where growth is not encouraged	Project adds new capacity or accessibility in support of EJ	-----	-----	-----
Supports Land Use (5 max)	Project could negatively impact the land use of the area and does not support an adopted Land Use Plan	Project will have no impact or will make positive improvements to the area's land use and supports an adopted Land Use Plan	-----	-----	-----
Supports Economic Development (5 max)	Project does not support economic development	Project supports economic development	-----	-----	-----
Local Funding Contribution (10 max)	No local funding	At least 5% local funding of total project cost (or 25% for locally-administered projects)	At least 10% local funding of total project cost (or 30% for locally-administered projects)	-----	-----

GCLMPO 2045 MTP Project Solicitation and Ranking Process (Continued)

Division Level Bicycle/Pedestrian Projects: The ranking criteria for bicycle/pedestrian projects for the 2045 MTP are illustrated in the table below. It is important to note that all future bicycle and pedestrian projects submitted to the MPO for State funding must be specifically identified in a locally-adopted bicycle plan, pedestrian plan, greenway/multi-use plan, or Safe Routes to School Action Plan.

MTP Bicycle/Pedestrian Project Ranking Criteria

Measure	Points Possible
Safety	20
Connectivity	20
Residential and Employment Density	20
Benefit/Cost	20
Social Equity	10
Constructability	10
Total	100

Safety Measure (20 points possible)

- Bike/Pedestrian Crashes (Up to 10 points)
 - o Bicycle or pedestrian crashes within last 5 years along the corridor. For multi-use projects, both bike and pedestrian crash data will be used. For new, off-road facilities, crash data for parallel routes will be used.
 - 5 or more crashes – 10 points
 - 4 crashes – 8 points
 - 3 crashes – 6 points
 - 2 crashes – 4 points
 - 1 crash – 2 points
- Posted Speed Limits (Up to 10 points)
 - 55 and over – 10 points
 - 40 to 50 – 5 points
 - 30 to 40 – 2.5 points
 - 25 – 1 point

Connectivity Measure (20 points possible)

- Destination Type (up to 10 points)
 - o Primary centers: municipal/transit center, employment center, schools, universities, mixed-use commercial, parks, national/state tourist destinations, high-density residential/multi-family (1 point each, maximum of 7 points)
 - o Secondary centers: lower-density residential developments, fixed-guideway facilities, minor employment centers, municipal building, sports venue (0.5 points each, maximum of 3 points)
- Distance to Prime Destination (Up to 10 points)
 - o Pedestrian
 - Points calculated on a scale for distances up to 0.5 miles. Pedestrian facilities further

GCLMPO 2045 MTP Project Solicitation and Ranking Process (Continued)

than 0.5 miles to destination receive 0 points. Formula = $10 - [(Distance \text{ in miles}/0.5 \text{ miles}) * 10]$

- Bicycle
 - Points calculated on a scale for distances up to 1.5 miles. Bicycle facilities further than 1.5 miles to destination receive 0 points. Formula = $10 - [(Distance \text{ in miles}/1.5 \text{ miles}) * 10]$

Residential and Employment Density Measure (20 points possible)

- Residents per Square Mile (Up to 10 points)
 - Points calculated on a scale using a radial 0.5 mile buffer for pedestrian facilities and 1.5 miles for bicycle facilities. Formula = $[(buffered \text{ population}/buffered \text{ area})/1000] * 3$. Population data is from 2010 Census block data.
- Employees per Square Mile (Up to 10 points)
 - Points calculated on a scale using a radial 0.5 mile buffer for pedestrian facilities and 1.5 miles for bicycle facilities. Formula = $[(buffered \text{ population}/buffered \text{ area})/1000] * 3$. Population data is from 2010 Local Employment Dynamics block data.

Benefit/Cost Measure (20 points possible)

- Formula = $(Accessibility \text{ Points} + Residential \text{ and Employment Density Points}) / (Estimated \text{ Project Cost}/\$100,000)$
 - Value of 8 or higher – 20 points
 - Value between 6 and 8 – 15 points
 - Value between 4 and 6 – 10 points
 - Value between 2 and 4 – 5 points
 - Value between 1 and 2 – 2.5 points
 - Value under 1 – no point

Social Equity Measure (10 points possible)

- Points calculated in this measure are calculated on a scale using a radial 0.5 mile buffer for pedestrian facilities and a radial 1.5 mile buffer for bicycle projects. Block group data from the American Community Survey is the source.
 - Households below Poverty Rate per Square Mile (Up to 4 points)
 - Formula = $(buffered \text{ number of households}/buffered \text{ area})/250$.
 - Households without Access to a Vehicle per Square Mile (Up to 3 points)
 - Formula = $(buffered \text{ number of households}/buffered \text{ area})/50$.
 - Density of Residents aged 5 to 14 and 65 and older (Up to 3 points)
 - Formula = $(buffered \text{ population}/buffered \text{ area})/250$.

Constructability Measure (10 points possible)

- Estimated Right-of-Way Acquired (Up to 5 points)
 - 100% - 5 points
 - At least 75% - 2.5 points
- Preliminary Engineering/Project Design (Up to 2.5 points)

GCLMPO 2045 MTP Project Solicitation and Ranking Process (Continued)

- Completed PE/Design receives 2.5 points
- Estimated Environmental Documentation Required (Up to 2.5 points)
 - Categorical Exclusion I/II – 2.5 points
 - Environmental Assessment – 1 point
 - EIS – 0 points

Destination Definitions for Bicycle/Pedestrian Projects**Major Centers**

municipal center- local, state or federal government building or site including a council or judicial chamber, such as a town hall or courthouse

transit station- hub or main terminal for fixed-route or passenger rail service

major employment center – contiguous property(s) which have businesses employing 50 or more part- time or full-time employees; or property(s) within a designated Central Business District or town center

mixed use commercial – contiguous property(s) developed with a vertical or horizontal mix of land uses

university or college – building or campus associated with a public or private secondary school institution

schools – any public or private school for primary education or pre-school education

parks – any locally owned and managed public park or recreation center

tourist destinations- any designated historic property or district (local, state or national) with a publicly accessible visitor's center; any publicly-accessible park or property managed by the NC Department of Environment and Natural Resources or NC Department of Cultural Resources; any publicly accessible park or property managed by the US Department of the Interior or US Department of Agriculture

multi-family residential (high-density) – contiguous property(s) that have a collective gross density of 8 multi-family units/acre or more, approved building permits may be included within the total (Note: threshold figure is an averaged measure developed through review of typical land use/development policies/ordinances.)

high-density residential (high-density) – contiguous property(s) that have a collective gross density of 4 single-family housing units/acre or more, approved building permits may be included within the total (Note: threshold figure is an averaged measure developed through review of typical land use/development policies/ordinances.)

Secondary Centers

minor employment center - contiguous property(s) which have businesses employing fewer than 50 part-time or full-time employees

municipal site – local, county, state or federal government office or property not including council or judicial chambers, such as a police station, fairgrounds, or state agency regional office

fixed-guideway and fixed-route systems – any part of a route providing for fixed-route services (buses, light-rail or commuter rail), including bus stops and park-n-ride lots

multi-family residential community (low-density) – contiguous property(s) that have a collective gross density of less than 8 multi-family units/acre, approved building permits may be included within the total (Note: threshold figure is an averaged measure developed through review of typical land use/development policies/ordinances.)

GCLMPO 2045 MTP Project Solicitation and Ranking Process (Continued)

residential neighborhood (low-density) – contiguous property(s) that have a collective gross density of fewer than 4 single-family housing units/acre, approved building permits may be included within the total (Note: threshold figure is an averaged measure developed through review of typical land use/development policies/ordinances.)

arts, entertainment or sports venue- any property(s) developed as a major sporting (professional, semi-professional or post-secondary team facility) or entertainment venue. (Note: for post-secondary facilities, project may select this destination type category or university/college destination type category, but not both.)

other local destination – churches or medical offices

Division Level Aviation Projects: All aviation projects will be evaluated by the criteria and scoring as detailed in the following table:

Aviation Projects (Max Total Score: 100 points)					
Criteria	0 points	5 points	10 points	15 points	20 points
Economic Development (20 max)	Does not improve aircraft size capacity or space availability for based aircraft	X	X	Increases capacity for heavier aircraft and/or increases space available for new based aircraft	Creates capacity for larger aircraft and/or creates employment
Safety (20 max)	No safety improvements	X	Improves safety requirements outside of the runway and taxiway areas	Improves taxiway/taxilane safety area grades and obstacle free zones	Improves required runway safety area grades and runway approach obstruction clearing
Cost of Project (20 max)	Total Project Cost is greater than \$500,000	X	Total Project Cost is between \$250,000 and \$499,999	X	Total Project Cost is less than \$250,000
Local Funding Contribution (10 max)	No local match above the required 10%	Local match exceeds the minimum requirement of 10% and is between 11-19%	Local match exceeds the minimum requirement by at least 20% of project cost	-----	-----
Plan Consistency (20 max)	Project is not in an adopted plan	X	Project is included in the adopted MTP OR local aviation plan	X	Project is included in the adopted MTP AND local aviation plan
Project Readiness (10 max)	Significant ROW, EJ and/or environmental impacts	Moderate ROW, EJ and/or environmental impacts	No ROW, EJ or environmental impacts	-----	-----

GCLMPO 2045 MTP Project Solicitation and Ranking Process (Continued)

Division Level Public Transportation Projects: Public transportation projects will be evaluated by the criteria and scoring as detailed in the following table. The following public transportation projects will be scored:

- **Operations** – includes funding for administration of a system, as well as maintenance and operation of a transit system.
- **Expansion Vehicles** – project types are focused on increasing efficiency. Example projects include:
 - New bus routes and/or services (demand response, headway reductions)
 - Purchase of new buses or vans
- **Facilities** – project types are focused on replacing, improving, or constructing new transit-related facilities. Examples of projects include:
 - Transit-related facilities
 - Park and Ride Lots
 - Bus Shelters

Public Transportation Projects (Max Total Score: 100 points)					
Criteria	0 points	5 points	10 points	15 points	20 points
Interagency Coordination (10 max)	Project does not involve more than one transit/municipal agency	X	Project involves two or more transit/municipal agencies	-----	-----
Ridership Impact (15 max)	Project does not increase or has no impact on ridership	Project increases ridership by 0-5%	Project increases ridership by 5.1-10%	Project increases ridership by more than 10%	-----
Capacity Impact (15 max)	Project does not decrease headway or increase frequency on an existing transit route that is near or at capacity	X	X	Project decreases headway or increases frequency on an existing transit route that is near or at capacity	-----
Serves Activity Center(s) (10 max)	Project does not serve an activity center	X	Project does serve activity center(s)	-----	-----
Multimodal Accommodation (10 max)	Project does not include bike/ped facilities	X	Project includes bike/ped facilities	-----	-----
Plan Consistency (20 max)	Project is not in an adopted plan	X	Project is included in the adopted MTP OR local transit plan	X	Project is included in the adopted MTP AND local transit plan
Local Support (5 max)	Project does not have local support as evidenced by public input or elected Board support	Project does have local support as evidenced by public input or elected Board support	-----	-----	-----
Local Funding Contribution (15 max)	No local match above the required 10%	Local match exceeds the minimum requirement of 10% and is between 11-19%	X	Local match exceeds the minimum requirement by at least 20% of project cost	X

Appendix E: Freight Profile

GCLMPO Freight Profile E2

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GREATER CHARLOTTE
REGIONAL FREIGHT MOBILITY PLAN

GASTON-CLEVELAND-LINCOLN
METROPOLITAN PLANNING
ORGANIZATION
REGIONAL FREIGHT PROFILE

Prepared for:



Prepared by:



January 2017

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GCLMPO Freight Profile (Continued)

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1 GREATER CHARLOTTE REGIONAL FREIGHT PLAN

The Greater Charlotte Regional Freight Mobility Plan (Freight Plan) is a regional planning effort focused on freight transportation infrastructure coordinated by the Centralina Council of Governments (CCOG) in cooperation with regional partners of the 14-county Greater Charlotte Bi-State Region including the Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) which covers Gaston, Cleveland, and Lincoln Counties. As the movement of goods transcends jurisdictional boundaries, freight-related decisions can have wide-ranging impacts within and outside of the region. With this in mind, the Freight Plan has been developed to:

- Identify ways to effectively and consistently address freight congestion and key bottlenecks,
- Identify links that connect mobility of freight to regional economic development goals,
- Prioritize improvements to reduce barriers to efficiency,
- Promote effective land use in both urban and rural areas of the Region to support freight mobility, business development and job growth, and
- Mitigate environmental impacts related to mobility barriers across the Region.



The Freight Plan is consistent with North Carolina and South Carolina statewide transportation planning studies as well as regional and local transportation planning initiatives. The Freight Plan was developed with the *Moving Ahead for Progress in the 21st Century* (MAP-21) legislation in 2012 and more recent *Fixing America's Surface Transportation Act* (FAST Act) legislation in 2015 in mind, to ensure the analysis and recommendations are consistent with federal legislative guidance.

This document serves as a regionally specific subset of the data and recommendations of the Freight Plan for the Gaston-Cleveland-Lincoln MPO.

1.1 OVERVIEW OF PUBLIC AND STAKEHOLDER ENGAGEMENT

To understand the freight transportation concerns of local governments and freight transportation needs of private sector freight users and operators in the region, several methods were utilized to solicit stakeholder input including Coordinating and Steering Committee meetings, Freight Advisory Committee meetings, stakeholder interviews, an online survey for freight operators, and the CCOG website. Representatives from the GCLMPO participated on the Coordinating Committee and the Steering Committee. A complete overview of the public engagement and committee participation

process is included in the ***Final Plan, Appendix A – Summary of Public Information and Stakeholder Feedback.***

1.2 REGIONAL FREIGHT GOALS

The Greater Charlotte Regional Freight Mobility Plan goals were established after reviewing the National Multimodal Freight Policy goals, NCDOT Long Range Transportation Plan goals, SCDOT Statewide Multimodal Plan goals, regional MPO plan goals, and county transportation plans. The seven goals are listed below. Additional detail on the goals and objectives are included in the ***Final Plan, Appendix C – Goals, Objectives and Prioritization of Freight Project and Policies.***

Goal 1: Economic Competitiveness and Efficiency

- Support economic competitiveness by making investment decisions for freight transportation modes that make the most efficient use of resources, and pursue sustainable funding possibilities.
- Develop, integrate, and support a freight transportation system that supports the region's position as a major freight hub via a network of highways, railroads and airports
- Encourage regional efforts to maximize the region's competitiveness in freight and logistics
- Formulate a relationship between the private and public sectors to leverage available public and private revenue resources

Goal 2: Safety and Security

- Improve the safety and security of the freight transportation system.
- Assist regional emergency management agencies to be better prepared in the event of crashes on the freight system, and in response to hazardous material incidents
- Expand the use of technology to increase regional freight safety and security
- Reduce the number of high crash locations that involve trucks or at-grade rail crossings

Goal 3: Infrastructure Preservation and Maintenance

- Improve the state of good repair of the freight transportation system.
- Maintain regionally significant streets, highways and bridges to a state of good repair to minimize truck travel times and cargo damage

Goal 4: Environmental Stewardship

- Reduce adverse environmental and community impacts of the freight transportation system.
- Encourage land use planning that supports and promotes the efficient movement of freight
- Reduce the emissions resulting from freight congestion and excessive vehicle/train idling



Goal 5: Congestion and Reliability

- Reduce travel times and increase the reliability of the freight transportation system.

Goal 6: Performance and Accountability

- Develop methods to track and improve performance and accountability of the operations and maintenance of the freight transportation system.
- Decrease the costs of freight movement by reducing empty backhaul movements
- Improve freight system operations and information sharing to benefit regional planning and decision making through improvements in technology
- Increase freight knowledge and expertise by planners and elected officials throughout the region
- Implement a performance-based tracking process to determine how well the freight system is functioning relative to freight investments

Goal 7: Regional Coordination

- Establish/Improve the coordination of regional public and private sector organizations to improve freight planning and policy and project implementation.
- Engage private sector freight stakeholders to inform freight transportation planning and decision making

1.3 PERFORMANCE MEASURES

The Freight Plan's performance measures were developed consistent with the Plan's overall goals and objectives, the region's long range transportation plans, as well as the South Carolina Statewide Freight Plan. Under the MAP-21 Act and the FAST Act, State DOTs and MPOs are required to set performance targets consistent with the established national performance measures for freight, integrate those targets within their planning processes, and report to the USDOT on their progress.

Beyond federal requirements, freight performance measures will provide the project partners and MPOs and RPOs with the ability to monitor how well the transportation system is accommodating safe and effective freight movements. These measures will allow for the identification of trends or challenges before they become problems, and the project partners can be better prepared and responsive to private sector needs. **Table 1.1** illustrates the performance measures recommended to evaluate the established goals and objectives.

This list should provide guidance in data coordination and goal setting as performance measures are developed for inclusion in the long range transportation plan for the GCLMPO region. These will provide benchmarks at the local and regional levels, tracking how well policies and projects are working to achieve the stated goals. This also provides an opportunity for alignment with data sources that are to be maintained at the regional and state level, streamlining the data collection and maintenance efforts of planning staff.



GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Greater Charlotte Regional Freight Plan

Table 1.1: Freight Mobility Plan Goals and Performance Measures

Freight Plan Goals	Performance Measures (suggested source of data)
1. Economic Competitiveness and Efficiency	<ul style="list-style-type: none"> Reduce congestion on intermodal connectors and roads leading to major energy/manufacturing centers (INRIX travel time data or AADT-based level of service)
2. Safety and Security	<ul style="list-style-type: none"> Hours of delay from incidents (NCDOT) Number of crashes and fatal crashes involving trucks (and rate) (NCDOT) Grade Crossing Crash/Incident Rate (NCDOT)
3. Infrastructure Preservation and Maintenance	<ul style="list-style-type: none"> Percent of structurally deficient bridges on freight network (NCDOT, NBIS) Percent of freight network meeting pavement condition targets (NCDOT) Number of weight-restricted bridges on the freight network (NCDOT, NBIS) Number of vertical restrictions on the freight network (NCDOT, NBIS)
4. Environmental Stewardship	<ul style="list-style-type: none"> MPO and RPO Air Quality Design Values (MPO/RPO Data) Annual Hours of Excessive Delay Per Capita* 2- and 4-year Total Emission Reductions for each applicable criteria pollutant and precursor*
5. Congestion and Reliability	<ul style="list-style-type: none"> Annual hours of truck delay (INRIX, NCDOT) Travel Time Index (Texas Transportation Institute Annual Mobility Report) Number of chokepoints reduced (INRIX, NCDOT)
6. Performance and Accountability	<ul style="list-style-type: none"> Annual hours of truck delay (INRIX, NCDOT) Number of empty backhaul movements (Source TBD)
7. Regional Coordination	<ul style="list-style-type: none"> Establishment of coordination policies to promote communications between regional agencies and private entities Number of multi-jurisdictional freight planning efforts and freight infrastructure improvements Number of participants in regional freight stakeholder meetings (Freight Advisory Committee, CCOG)

* Proposed performance measures in the Federal Notice of Proposed Rulemaking (NPRM) to propose national performance management measure regulations to assess the performance of the National Highway System, Freight Movement on the Interstate System, and the Congestion Mitigation and Air Quality Improvement Program, as required by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation Act ("FAST Act").



1.4 APPLICATION OF PLAN RECOMMENDATIONS AND POLICY GUIDANCE

Implementation of the Freight Plan and its recommendations requires coordination from local, regional, state, and national partners, involving both public and private sectors. With this in mind, the Freight Plan is designed to assist local municipalities and governmental agencies to facilitate their efforts on comprehensive plan updates, mapping updates of land use and zoning layers, as well as development service planning. This Freight Plan serves four principal purposes:

1. **Data resource:** a great deal of data has been compiled with the development of this plan. Infrastructure, parking, land use and other relevant data are available for reference and / or implementation, as well as ongoing planning efforts. CCOG can assist with this information.
2. **Provide freight related recommendations for inclusion in state and local land use and transportation plans:** throughout the Freight Plan, recommendations for performance measures, project prioritization recommended policies, as well as programs and projects are presented. These should be considered for inclusion in GCLMPO transportation plans and should provide useful guidance in land use planning.
3. **Serve as an example of effective regional coordination and transportation system planning:** This work effort has initiated a valuable dialogue across the public and private sectors, raising awareness of freight mobility and its role in the regional economy. This plan should serve as the foundation for continued engagement of freight stakeholders and an ongoing focus on freight mobility within the greater Charlotte region. With this in mind, GCLMPO is encouraged to have continued staff participation and board representation in regional freight planning efforts.
4. **It is requested that the Greater Charlotte Regional Freight Mobility Plan be reviewed and accepted by the GCLMPO Policy Committee:** with a principal goal of this regional planning effort being to raise awareness of the importance of regional freight mobility and incorporate appropriate freight elements into transportation planning practices on a consistent basis. This action will codify the months of effort and participation of members of the Coordinating Committee, and will sustain the ongoing dialogue of supporting freight mobility in the region. By design, the recommendations of this Freight Plan are not given numeric scoring but rather relative prioritization on a regional level. Those recommendations should be considered for further analysis and inclusion in local prioritization processes.



2 EXISTING CONDITIONS

The existing conditions of the Freight Plan analysis was the starting point for understanding what actions and investments will help meet the Greater Charlotte Region's freight-related economic competitiveness goals and objectives. The existing conditions analysis identified, inventoried, and assessed the current condition and performance of trucking, rail, and air cargo within the freight transportation system. The condition and performance is a product of economic conditions, system demand, quality and timing of operations, maintenance, and investments. Portions of the existing conditions analysis specific to the GCLMPO region are summarized below. The full existing conditions technical memorandum can be found in the *Final Plan, Appendix B*.

2.1 ASSETS AND CRITICAL INFRASTRUCTURE WITHIN THE GASTON-CLEVELAND-LINCOLN MPO

2.1.1 Regional Strategic Freight Network

A key element of Freight Planning is the identification of the regional Strategic Freight Network (SFN). By definition, a SFN is a system of infrastructure critical to the successful movement of freight. For the Freight Plan, this SFN serves as the network around which the region currently moves freight and plans to continue to support safe, efficient movement of freight into the forecast plan years.

Many recommendations related to infrastructure improvements are limited to the SFN. With consideration of limited resources for infrastructure projects, the Freight Plan focuses on this network identified as critical to the Greater Charlotte Region.

Illustrated in **Figure 2.1** and **Figure 2.2**, the GCLMPO SFN encompasses all modes of freight moving transportation. In partnership with the Coordinating Committee, the following criteria were used to finalize the roadway and other modal components of the SFN:

- **Highways**
 - Those on the National Multimodal Freight System (NMFS) and/or all Interstates
 - Those designated as truck routes by NCDOT
 - Approved Intermodal Connectors on the National Highway System
 - Those identified by planning agencies as critical to local freight movement
- **Railroads**
 - All active freight railroads
 - All active intermodal rail terminals
- **Aviation**
 - All commercial service airports



GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Existing Conditions

Figure 2.1: Strategic Freight Network in the GCLMPO Area

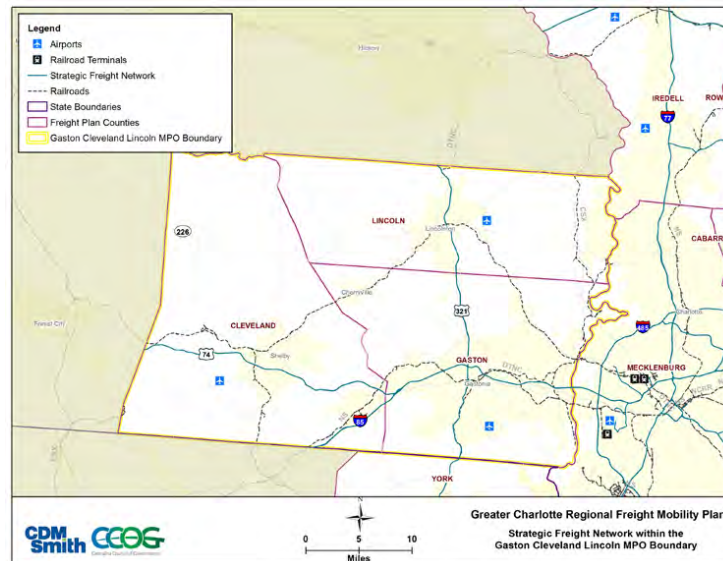
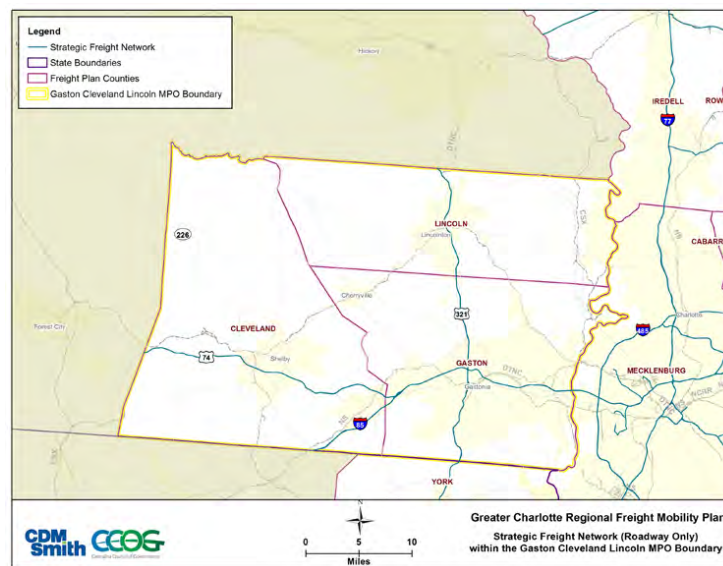


Figure 2.2: Strategic Freight Network (Roadways Only)



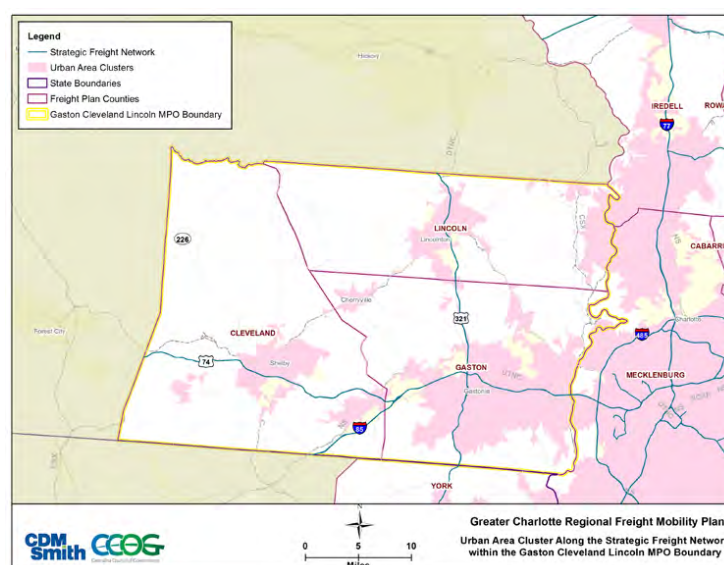
GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Existing Conditions

2.1.2 Critical Rural and Urban Freight Corridors

According to the latest available guidance from USDOT, Fast Act Section 1116 [Critical Urban Freight Corridor (CUFC) and Critical Rural Freight Corridor (CRFC) Guidance] and based on coordination with the State DOTs, the Freight Plan presents the following data on suggested facilities for inclusion in the state level CUFC/CRFC designations. **Figure 2.3** illustrates the SFN within the GCLMPO region (roadways only) broken out by urban and rural land use designation, based on 2010 Census Urban and Rural classification data. These roadway segments are provided for consideration in the state designated multimodal critical rural and urban freight corridors yet to be determined. Further detail on the CUFCs and CRFCs are included in the **Final Plan, Table 2.4**.

Figure 2.3: Strategic Freight Network (Roadways Only) and Urban Area Clusters in Gaston-Cleveland-Lincoln MPO Region



Source: 2010 Census Urban and Rural classification data, NCDOT, and SCDOT

2.2 EXISTING CONDITIONS WITHIN THE GASTON-CLEVELAND-LINCOLN MPO

The existing conditions analysis provided a compilation of data on the transportation infrastructure system for the Greater Charlotte Bi-State region. Highlights, by mode, are provided a regional level with additional detail for the GCLMPO region.

2.2.1 Trucking

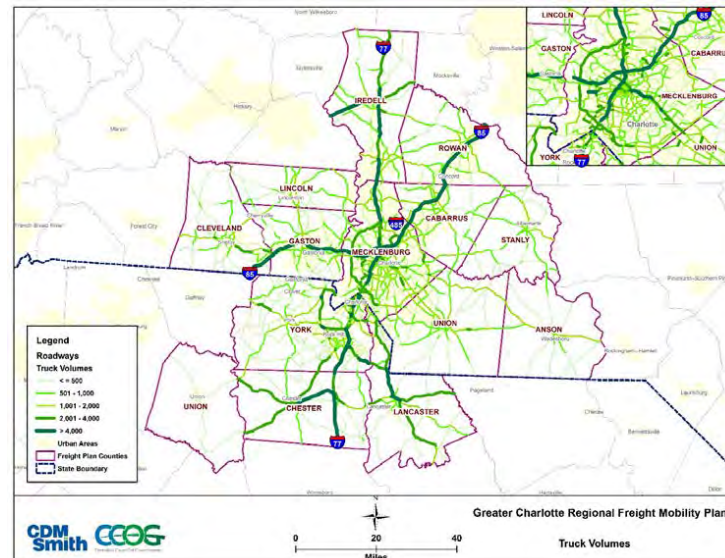
The interstates carry the bulk of the region's daily truck traffic as shown in **Figure 2.4**. I-85 and I-77 constitute the most critical freight corridors throughout the region. Other roadways that play a

GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Existing Conditions

critical role in the movement of truck freight are I-485, US 74, US 321, NC 160 (near the Charlotte-Douglas airport), and SC 9 through Chester and Lancaster, SC.

Figure 2.4: Regional Truck Average Daily Truck Volumes (2012)



Source: NCDOT and SCDOT

Delay, safety, and access issues raise costs for shippers, carriers, manufacturers and consumers alike. **Figure 2.5** shows that no truck related bottlenecks were identified within the freight transportation system in the GCLMPO region. While no segments of the SFN within the GCLMPO region are currently defined as bottlenecks, some segments do present some challenges for the trucking of goods in terms of bridge conditions and safety.

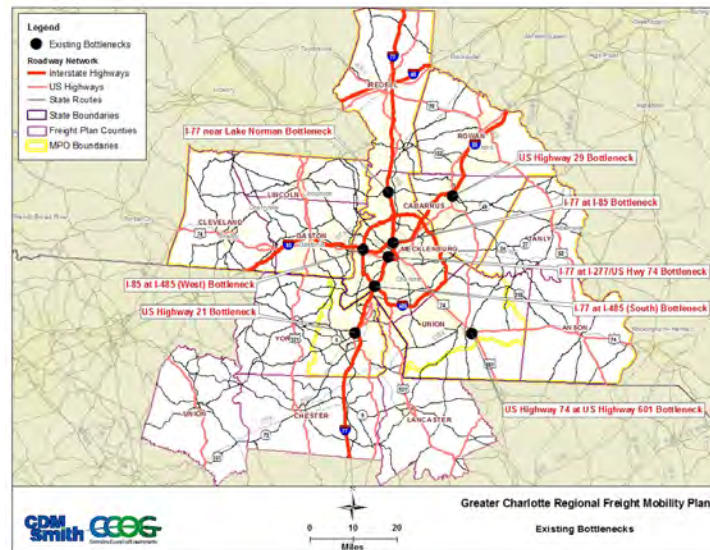
Functionally obsolete bridges are bridges that no longer meet the current standards, such as narrow lanes or low load-carrying capacity. These bridges have not been designed for the loads/trucks that currently traverse the freight highway system. Structurally deficient bridges require significant maintenance, rehabilitation or replacement and are unable to carry certain freight loads. For these reasons, they can serve as constraints to the freight highway network and are therefore important to include in freight network analyses. **Figure 2.6** illustrates the 31 functionally obsolete and two structurally deficient bridges in the GCLMPO Region. These existing conditions of highway performance, safety and bridge conditions are important as they can limit the mobility of freight-carrying vehicles, particularly if they are attempting to carry oversize or overweight cargo.

Figure 2.7 illustrates commercial vehicle crash hotspots from 2009 to 2013. Corridors with slightly higher than medium densities of crashes involving commercial vehicles include I-85, as well near the interchange of I-85 and US 321.

GCLMPO Freight Profile (Continued)

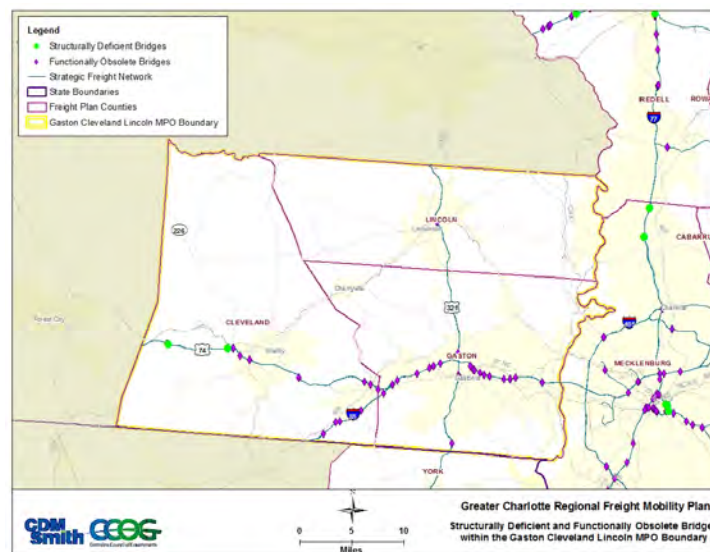
Gaston-Cleveland-Lincoln MPO Freight Profile • Existing Conditions

Figure 2.5: Charlotte Region Truck Bottlenecks in Relation to Gaston-Cleveland-Lincoln MPO



Source: American Transportation Research Institute (ATRI), October 2015

Figure 2.6: Structurally Deficient and Functionally Obsolete Bridges in the GCLMPO Region

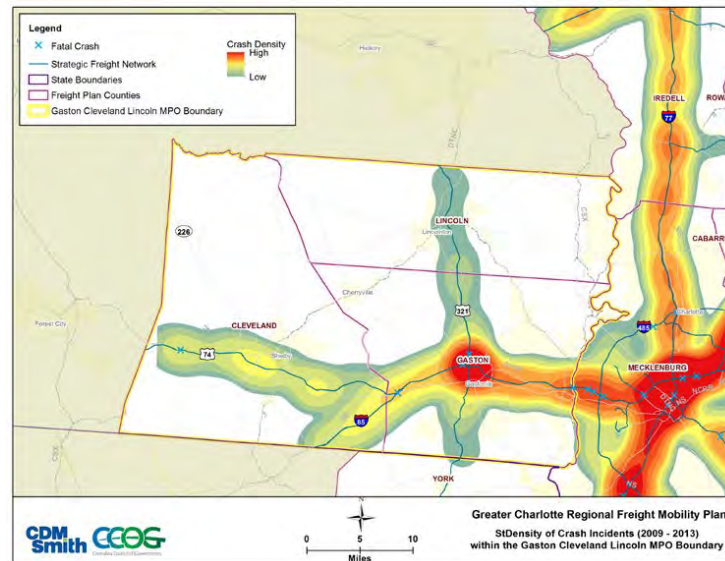


Source: NCDOT and SCDOT

GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Existing Conditions

Figure 2.7: Commercial Vehicle Crash Hotspots (2009-2013)

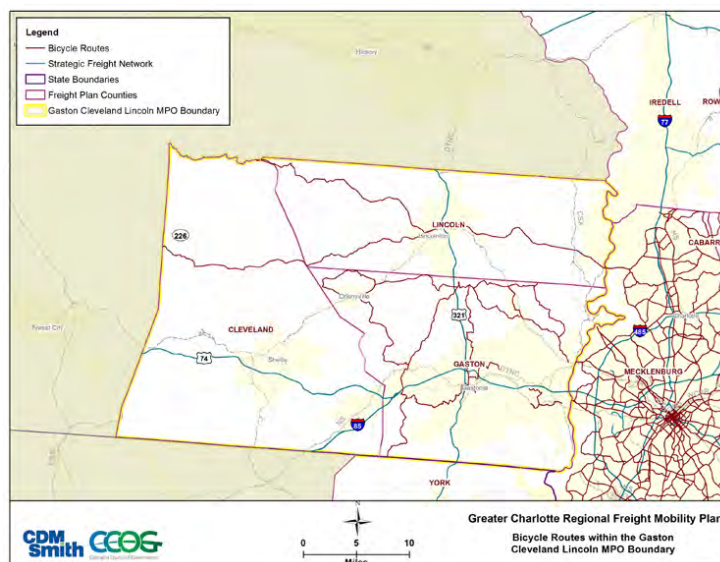


In addition to highway safety for autos and trucks, the safety of bicycles and pedestrians should also be considered when evaluating the condition and future infrastructure improvements for freight mobility. In **Figure 2.8**, identified bicycle facilities are mapped along with the SFN. This map illustrates areas that are designated bicycle routes along with locations where trucks are likely to operate. Planners should use this information to guide appropriate design features to support the safe shared use of the right of way and support efforts to minimize conflicts between modes of transportation.

GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Existing Conditions

Figure 2.8: Bicycle Routes within the GCLMPO Region



2.2.2 Rail

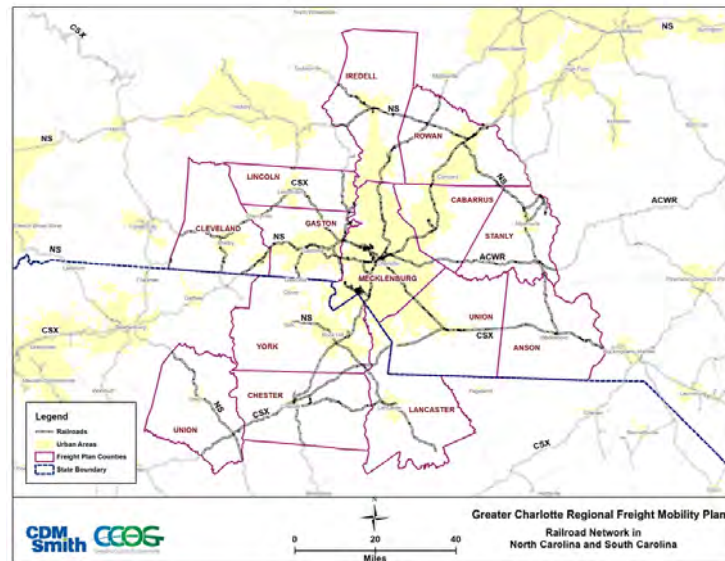
Within the Greater Charlotte Region, there is a combined 1,042 miles of track as listed in **Table 2.1** and shown on **Figure 2.9**. A majority of the track is owned and operated by two Class I railroads, Norfolk Southern (NS) and CSX Transportation (CSXT). The remainder of the rail line mileage is owned and operated by seven short line railroads.

Table 2.1: Regional Railroad Ownership

Railroad Owner	Miles
Aberdeen Carolina & Western Railway	50.8
Alexander Railroad Company	13.6
Carolina Coastal Railway	13.5
CSXT	335.0
NCDOT	1.0
Norfolk Southern	593.7
Piedmont & Northern Railway	15.5
Winston-Salem Southbound Railway	42.10
Lancaster & Chester	66.8
Others/Unknown	10.0

Source: National Transportation Atlas Database, 2015

Figure 2.9: Greater Charlotte Regional Rail Network



Source: National Transportation Atlas Database, 2015

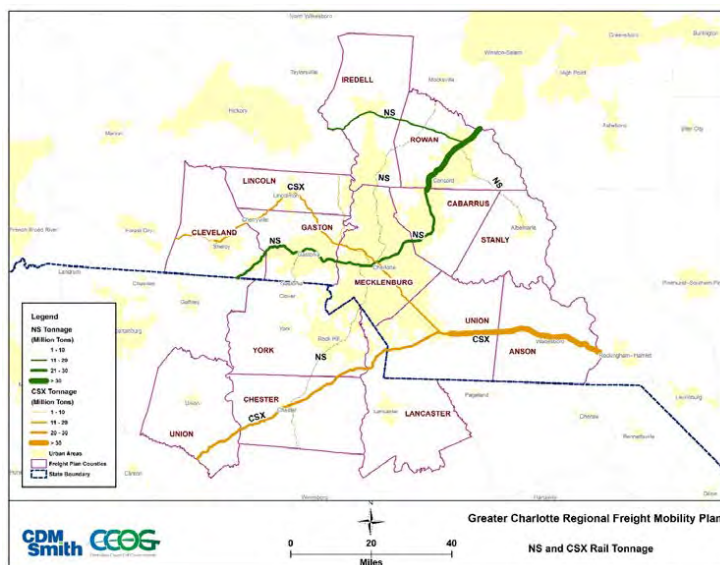
Both NS and CSXT have key rail corridors and intermodal yards. For NS, the Main Line operating through Kannapolis, Charlotte and Gastonia serving the Charlotte-Douglas International Airport's Intermodal Yard is one of the busier corridors along the east coast. The CSXT SE Line connects to the Port of Wilmington and Hamlet Yard. **Figure 2.10** shows the regional Class I rail annual volumes. Grains, Coal and chemicals make up the bulk of the regional rail tonnage (**Figure 2.11**). Over 5 percent of all freight moves by rail in the region.

Freight rail bottlenecks have the potential to constrain the freight and passenger rail operations for not only Class I railroads, but Amtrak and short line railroads. While no rail bottlenecks are identified in the GCLMPO area, both CSX and NS carry sizeable amounts of cargo, serving the region. Local planners need to consider this for land use planning around the alignment, and transportation planners must consider the access limitations and safety concerns near this critical freight corridor.

GCLMPO Freight Profile (Continued)

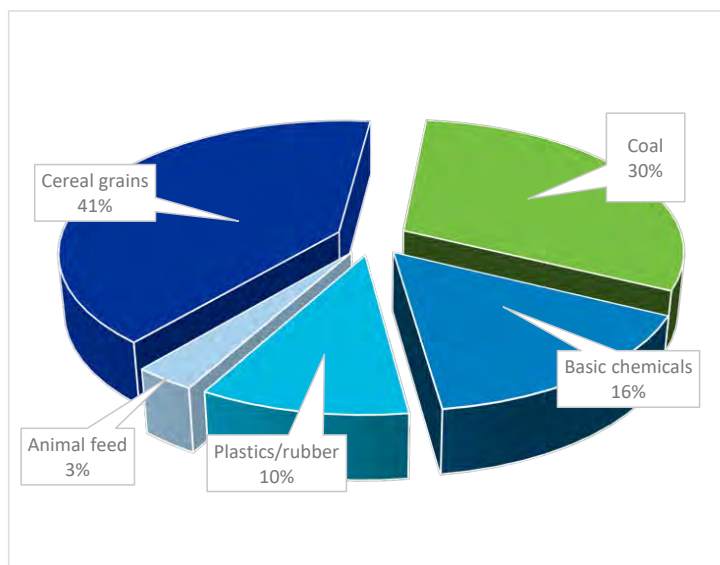
Gaston-Cleveland-Lincoln MPO Freight Profile • Existing Conditions

Figure 2.10: Regional Class I Annual Rail Freight Volumes (2014)



Source: NCDOT

Figure 2.11: Regional Rail Freight Top Commodities (By Weight)



Source: FAF4

GCLMPO Freight Profile (Continued)

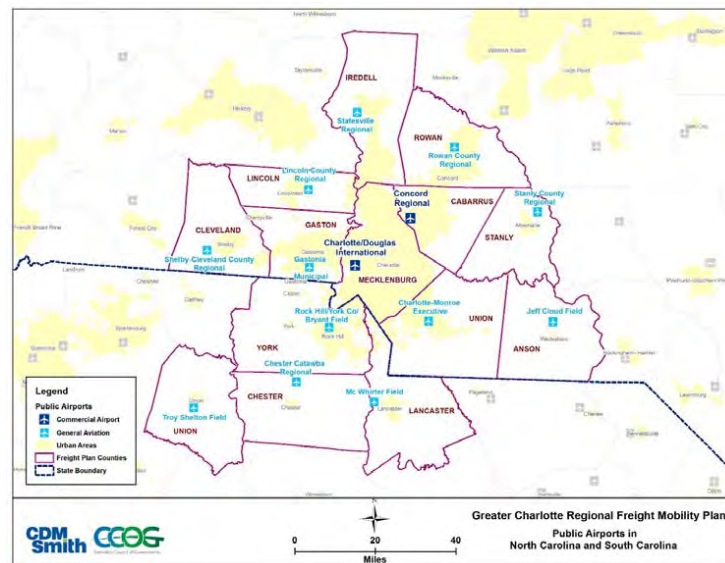
2.2.3 Air Cargo

There are 2 commercial service airports and 12 general aviation airports located in the Greater Charlotte Region. The two commercial service airports are Charlotte-Douglas International Airport (CLT) and Concord Regional. CLT handles virtually all air cargo in the Greater Charlotte Region. **Figure 2.12** illustrates the airports in the Greater Charlotte Region.

Though small in volume, airborne freight has by far the highest value per ton of any mode. Typical commodities include goods from the pharmaceutical, automotive, and high-tech manufacturing sectors as well as the consumer parcel delivery services, as illustrated in **Figure 2.13**. Moving goods by air is expensive and the industry responds to the forces of supply and demand. This is not unique to the region but an industry wide trend.

Shelby-Cleveland County Regional, Lincoln County Regional, and Gastonia Municipal are the three general aviation airports in the GCLMPO. Similar to railroads, intermodal connectivity should be maintained and supported, consistent with the recommendations of the Freight Plan

Figure 2.12: Greater Charlotte Regional Public Airports

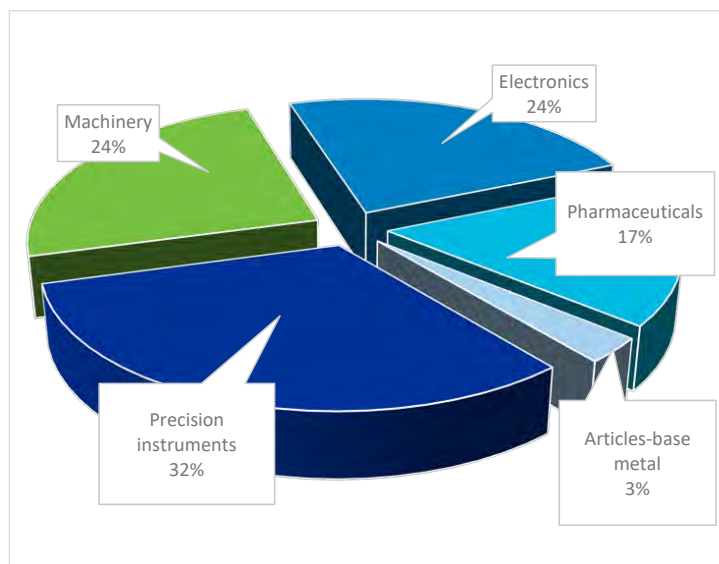


Source: Federal Aviation Administration

GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Existing Conditions

Figure 2.13: Regional Air Cargo Top Commodities (By Value)



Source: FAF4

3 FUTURE FREIGHT DEMAND AND LAND USES

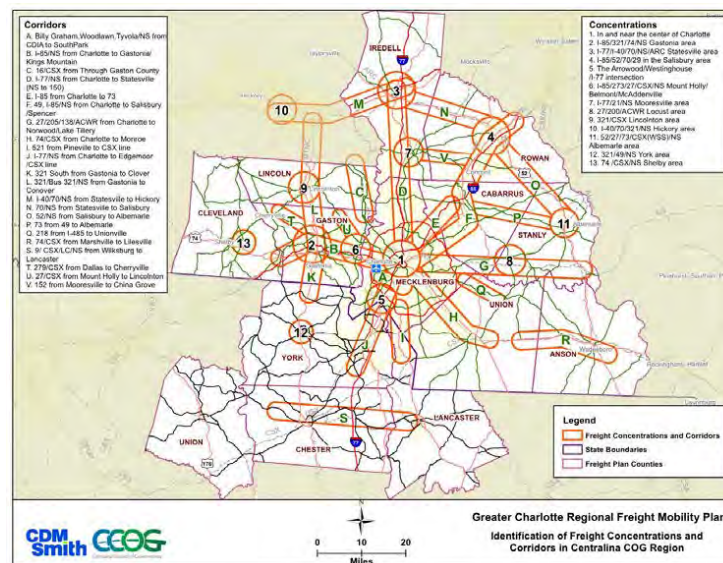
For both land use and transportation planners, it is important to understand and quantify travel demand, or trips generated by different types of land use. The CCOG identified land use classifications as a part of the CONNECT Our Future planning effort, and those data were utilized in this analysis on the regional level.

3.1 FREIGHT LAND USE

The freight planning team evaluated land use trends and the relative transportation system. A series of linear “Corridors” and nodal “Concentrations” were identified for further analysis.

In **Figure 3.1**, freight corridors and concentrations for the Greater Charlotte Region are illustrated. Examining the existing opportunities within these identified areas with the selected corridors and concentrated areas provides for infill and/or new development to locate near existing developments, keeping the development of the region compact and limiting additional development sprawl. Located within the GCLMPO area, at least in part, are corridors B, C, K, L, T and U as well as concentrations 2, 6, 9, and 13 as illustrated in **Figure 3.2**.

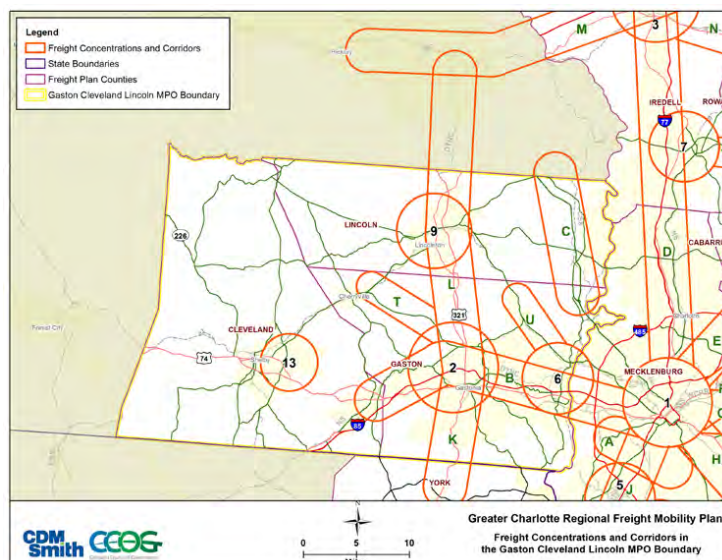
Figure 3.1: Identification of Freight Corridors and Concentrations



GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Future Freight Demand

Figure 3.2: Identification of Freight Corridors and Concentrations within the GCLMPO Region



Utilizing land use data from the CCOG Connect Our Future Plan, land use types were identified as “freight acres” – or acres of land uses expected to generate freight vehicle traffic. The total freight acres for Gaston, Cleveland and Lincoln counties are identified and compared to the overall total acres for each county in **Table 3.1**.

Table 3.1: Existing Freight Acreage in the Gaston Cleveland Lincoln MPO Counties

County	Total Acres	Total Freight Acres
Gaston	214,096	21,835
Cleveland	287,950	21,186
Lincoln	180,979	10,915

The existing freight acreage, underutilized freight land acreage, and vacant freight land acreage for each of the GCLMPO Corridors and Concentrations are identified in **Table 3.2** and **Table 3.3**, respectively. The underutilized land, or under-developed land, are parcels that contain permanent buildings or structures that occupy a small fraction of the parcel and provide a significant amount of the remaining parcel available for future development. Vacant acreage, or undeveloped, is defined as lots or parcels that do not contain any permanent buildings or structures on the property.

Additional information, for consideration, is the presence of wetlands within these areas. While this is a cursory review of developability, wetlands typically provide planners with a general framework for where features of the natural, physical environment may present development challenges. This is presented in **Figure 3.3**.

GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Future Freight Demand

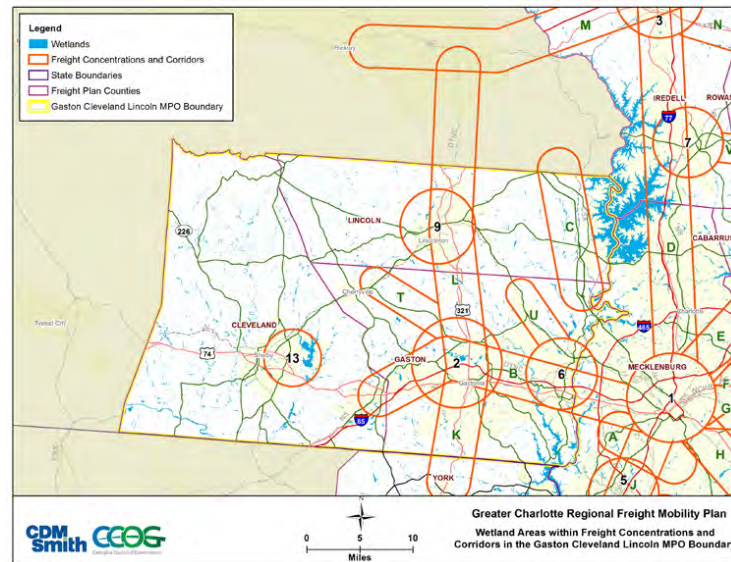
Table 3.2: Gaston Cleveland Lincoln MPO Corridors (Acres)

Corridors	Existing Freight	Underutilized Freight Lands	Vacant Freight Lands
B. I-85/NS from Charlotte to Gastonia/Kings Mountain	3,641	283	2,001
C. NC 16/CSX from Through Gaston County	367	127	1,755
K. US 321 South from Gastonia to Clover	868	82	404
L. US 321/Bus US 321/NS from Gastonia to Conover	481	81	570
T. NC 279/CSX from Dallas to Cherryville	213	12	222
U. NC 27/CSX from Mount Holly to Lincolnton	382	385	383

Table 3.3: Gaston Cleveland Lincoln MPO Concentrations (Acres)

Concentrations	Existing Freight	Underutilized Freight Lands	Vacant Freight Lands
2. I-85/US 321/US 74/NS Gastonia area	2,996	585	8,308
6. I-85/NC 273/NC 27/CSX/NS Mount Holly/Belmont/McAdenville	2,201	181	5,145
9. US 321/CSX Lincolnton area	575	1,331	4,522
13. US 74 /CSX/NS Shelby area	660	466	3,287

Figure 3.3: Wetlands Within the Corridors and Concentrations of the GCLMPO Region



3.2 FUTURE REGIONAL COMMODITY FLOWS

This section provides a summary of the freight flow forecasts for goods moving to, from, and within the Greater Charlotte Bi-State region by domestic mode and commodity type.

- Total freight tonnage from, to and within the Charlotte region is projected to increase 35 percent from 2015 to 2045, or at a compound annual growth rate of 1.1 percent per year. In 2015 about 95 percent of total freight tons were domestic and these volumes are projected to grow by 30 percent.
- While they represent a small share of total volumes in 2015 foreign freight flows are expected to grow faster than domestic freight with imports more than doubling and exports tripling from 2015 to 2045.
- Total freight value growth of 79 percent is expected to be more than double growth in tons, reflecting higher volume growth for high-value products compared to that of low-valued products.
- Freight flows moving within the Charlotte region are predominantly transported by truck; are much less than inbound or outbound flows in terms of tonnage or value; and are expected to grow more slowly, at 17 percent for tons and 48 percent for value over the forecast period.
- Inbound freight tonnage in 2015 through 2045 is larger than outbound freight due to natural gas transported into the region by pipeline. However, trucking is the largest mode of transportation for both inbound and outbound flows for both tons and value, and for this large segment of freight, outbound volumes exceed inbound from 2015 through 2045.
- Freight transported by air represents a small portion of tons moved inbound or outbound from the Charlotte region, but it is expected to be the largest mode in terms of growth in value, 176 percent growth in inbound value from 2015 to 2045 and 350 percent growth in outbound value over that period. Top product groups transported by air include electronics, machinery, pharmaceuticals, precision instruments and chemical products.
- The strongest directional growth is outbound shipping by value, which doubles over the forecast period. Driven by increases in such commodities as machinery, electronics, and pharmaceuticals, this is a very positive indicator for the regional economy.
- Origins of inbound freight and destinations of outbound freight are concentrated in North Carolina, South Carolina, Virginia and Georgia. The concentrations in these four states are especially high for tonnage since heavier and lower-valued commodities tend to be transported shorter distances.



4 RECOMMENDATIONS OF THE FREIGHT PLAN

A series of recommendations were produced for the Freight Plan. One of the key results of the Greater Charlotte Regional Freight Mobility Plan was the identification of recommended policies, programs, and projects that could be implemented in the region to facilitate the movement of freight. These recommendations were identified throughout the planning process and originate from three primary sources; 1) the needs analysis, 2) stakeholder engagement, and 3) a review of best practices in freight planning.

4.1 PRIORITIZED PROJECTS

The recommendations most relevant to the GCLMPO portion of the regional network have been identified and are provided in the following sections. The recommendations of the Freight Plan in their entirety can be found in the **Final Plan, Appendix G – Recommendations**. The projects and policies in the Freight Plan are defined based on the three freight relevance categories and then prioritized. The prioritization framework is intended to guide future investments. Funding availability, environmental restrictions, political considerations, and other relevant factors influenced the rankings. Reinforcing the intention of this serving as a guiding document, not a funded programmatic transportation plan, prioritization is represented by graphical pie charts, not numeric scoring or ranking. As such, these recommendations are provided for consideration within the GCLMPO region.

4.1.1 Trucking Related Recommendations

Trucking related recommendations are focused on the mobility and safety of truck activity in the GCLMPO area. These recommendations, listed in **Table 4.1** and illustrated in **Figure 4.1**, have the potential to benefit other modes of transport but are primarily truck-focused. For those recommendations that are location-specific, a mapping identifier is included in the table. Those that are not site specific are listed as “Not Mapped.” The “Source” of the recommendations provides insight as to how the recommendations were identified in the Freight Plan development.

Infrastructure improvements are recommended in several locations within GCLMPO. These are primarily sections of highways on the SFN that have been identified at commercial vehicle safety hotspots. While safety, alone, is not typically a reason for a major infrastructure investment, these recommendations are for further evaluation of the causes of accidents, review of pavement conditions and evaluation of operational of capacity improvements that may improve the overall performance of the freight network.

Listed as “Not Mapped” because they are not individually labeled are the 31 functionally obsolete and two structurally deficient bridges on the SFN within the GCLMPO. The recommendation is to address and prioritize functionally obsolete and structurally deficient bridges on the region's SFN to preserve the infrastructure of the freight network.



GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Recommendations of the Freight Plan

Table 4.1: Truck Related Recommendations

Truck Related Recommendations			
Map Identifier	Source	Recommendation	Notes
Not Mapped	Stakeholder Feedback	Provide training for truck drivers (CDL Programs-CPCC).	Partner with local training centers to raise awareness and promote training opportunities in the region.
Not Mapped	Stakeholder Feedback	Reduce risk to non-motorized transportation users. Clearly sign and mark bicycle and pedestrian facilities where the Strategic Freight Network and state/local bike routes overlap.	GIS operation to overlay bicycle and pedestrian networks with Strategic Freight Network.
Not Mapped	Truck Parking Analysis	Identify areas of needed truck parking and rest areas along the region's Strategic Freight Network.	GIS operation illustrating areas where truck parking utilization has exceeded available capacity; site selection study within Corridors and Concentration areas and Strategic Freight Network.
Not Mapped	Bridge Inventory, Stakeholder Feedback	Address and prioritize functionally obsolete and structurally deficient bridges on the region's Strategic Freight Network.	31 functionally obsolete and two structurally deficient bridges on SFN within GCLMPO
Not Mapped	Stakeholder Feedback	Conduct educational efforts to counter public perception that increases in truck size and weight limits will impact roadway quality and compromise safety.	
Not Mapped	Prioritize Stakeholder Feedback	Prioritize incident management for responding to increased congestion, safety issues during highway construction, and impacts of vehicular accidents.	Promote enforcement of North Carolina's "Quick Clearance Law" and South Carolina's "Steer it and Clear it" Law.
Not Mapped	Stakeholder Feedback	Program additional transportation funding mechanisms, particularly for highway maintenance and construction.	Focus on identified deficient bridges, "Corridors and Concentrations," and Strategic Freight Network for preservation and expansion of roadway access to major facilities.
Not Mapped	Stakeholder Feedback	Program improvements to infrastructure to handle heavy and wide shipments.	Focus on identified deficient bridges, "Corridors and Concentrations," and Strategic Freight Network for preservation and expansion of roadway access to major facilities.
Not Mapped	Stakeholder Feedback	Identify and address concerns related to perceived/actual high costs and inability to ship products to the ports.	Partner with NCDOT and SCDOT on statewide and multistate planning efforts to identify pathways connecting the Charlotte region to international marine port terminals
Not Mapped	Stakeholder Feedback	Encourage alternative options CNG/LNG for trucks-including fueling stations	Focus on identified "Corridors and Concentrations" for preservation and expansion of roadway access to major facilities. Partner with NCDOT and SCDOT for regionally identified corridors.
Not Mapped	Stakeholder Feedback	Participate in the FAST Act Alternative Fuel Corridors program	Partner with Centralina Clean Fuels Coalition, NCDOT and SCDOT on statewide and multistate planning efforts to identify long distance corridors qualifying for federal designation.



GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Recommendations of the Freight Plan

Truck Related Recommendations			
Map Identifier	Source	Recommendation	Notes
Not Mapped	Stakeholder Feedback	Continue to Identify and close any first/last mile gaps near major intermodal centers and manufacturing hubs	Focus on identified "Corridors and Concentrations" for preservation and expansion of roadway access to major facilities.
T15(a-e)	Safety data	Evaluate Crash hotspots identified in densely populated areas such as Gastonia (T15a), Statesville (T15b), Mooresville (T15c), Salisbury (T15d) and Monroe (T15e)	Evaluation of safety improvements possible in operations, capacity, lighting, etc.
T15a	Safety data	Evaluate improvements on I85 near Gastonia	Evaluation of safety improvements possible in operations, capacity, lighting, etc.
T16	GCLMPO 2040 MTP, Safety	US74 Corridor through Cleveland County (improvements to capacity, operations and geometric design)	Evaluation needed to address safety, capacity and operational improvements.
T17	GCLMPO 2040 MTP, Safety	I85 Corridor through Gaston County (improvements to capacity, operations and geometric design).	Evaluation needed to address safety, capacity and operational improvements.
T18	GCLMPO 2040 MTP, Safety	US 321 at I85 Interchange Improvement.	Evaluation needed to address safety, capacity and operational improvements.
Not Mapped	Stakeholder Feedback	Identify corridors where non-traditional improvements may significantly reduce congestion (e.g. Intelligent Transportation Systems, Managed Lanes, Value Pricing, etc.).	Incorporate this scope of work into corridor improvement planning and concept design.

Figure 4.1: Trucking Related Recommendations for GCLMPO



GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Recommendations of the Freight Plan

4.1.2 Rail Related Recommendations

Rail related recommendations are focused on the mobility and safety of rail based activity in the study area. These recommendations, presented in **Table 4.2**, have the potential to benefit other modes of transport but are primarily railroad-focused.

Table 4.2: Rail Related Recommendations

Rail Related Recommendations			
Map Identifier	Source	Recommendation	Notes
Not Mapped	Stakeholder Feedback	Greater Charlotte Region Traffic Separation Studies (TSS).	At-grade rail crossing studies (TSS): A TSS will evaluate the need for improving the rail at-grade crossings' warning systems or reducing and eliminating at-grade crossing to address potential safety conflicts; thus allowing partnerships with the railroads to prioritize grade crossing improvements.
Not Mapped	Stakeholder Feedback	Partner with the development community to identify and find solutions for existing or forecast terminal capacity constraints. Support efficient transfer of bulk commodities such as grain, coal, oil, etc. requires adequate intermodal operations capacity to move goods from production to consumption markets.	Working with the Class I railroads and local stakeholders in ensuring programs and policies are developed to ensure improved operation efficiencies.
Not Mapped	Stakeholder Feedback	Support an effort to improve the ability of short line railroads to accommodate 286,000 lb. standard rail cars.	Work with Class I and shortline railroads in changing the weight limits and identifying funding sources to assist in shortline railroads to upgrade rails.
Not Mapped	Stakeholder Feedback	Support opportunities for Intermodal terminal development and multimodal diversity.	This includes working with the Class I railroads and local stakeholders to ensure programs and policies are developed to ensure improved operation efficiencies.
Not Mapped	Stakeholder Feedback	Retain existing rail corridors and halt track removal.	By ensuring rail corridors stay intact and that adding, not reducing, track improves the efficiency of freight movements on rail, reducing the dependency on long-haul trucking movements.
Not Mapped	Stakeholder Feedback	Continue direct support for short-line railroad infrastructure improvements.	Short-line railroads provide local transportation options to industries, thus improves local economic benefits.
Not Mapped	Stakeholder Feedback	Explore routing options for hazardous materials shipments to avoid highly populated areas.	By utilizing rail to transport hazardous materials reduces the dependency on long-haul trucking movements and reduces safety hazards along heavily congested urban areas and networks.
Not Mapped	Stakeholder Feedback	Expand capacity in high-use rail corridors, including the expansion into double/triple track configurations.	
Not Mapped	Stakeholder Feedback	Raise awareness of environmental justice concerns in rail expansions	Implement policies that require NEPA evaluations for mitigating the impacts to EJ communities on new rail corridors, as well as rail corridor improvements.
Not Mapped	Stakeholder Feedback	Create rail-focused business parks.	By creating rail-focused business parks, truck and freight movements can be centralized and increase the opportunity for intermodal movements.



4.2 FUNDING STRATEGIES

4.2.1 FAST Act

Signed into law on December 4, 2015, the FAST Act provides updated federal guidance for transportation funding, including freight planning and investment. The FAST Act requires the development of a National Freight Strategic Plan, which includes mechanisms to monitor the conditions and performance of the national freight system.

The new bill increases overall transportation funding by 11 percent over five years, while providing a dedicated source of Federal funding for freight projects, including multimodal projects by establishing both formula and discretionary grant programs to fund projects that would benefit freight movements. Discretionary funding totaling \$4.5 billion over the next five years is included in the bill, and is eligible to States, MPOs, local governments, special purpose districts, and public authorities – including port authorities. An estimated 90 percent of the \$6.3 billion in formula funds in the new freight program will be used for highway projects, leaving up to 10 percent for other modes (ports, railroads, intelligent transportation systems, or better demand management).

Examples of Federal Grant and Loan Programs which are included in the FAST Act:

- TIGER Discretionary Grants
- Congestion Mitigation and Air Quality (CMAQ) program
- Federal Rail Safety Improvement Act of 2008
- Rail Line Relocation and Improvement Capital Grant Program
- Transportation Infrastructure Finance and Innovation Act (TIFIA)
- The Railroad Rehabilitation and Improvement Financing Program
- Section 45G Track Rehabilitation Tax Credit
- Airport Improvement Program (AIP)

4.2.2 State Funding Sources

North Carolina utilizes a variety of revenue sources to build their 10-year State Transportation Improvement Program (STIP). These sources include the state gas tax, the federal fuel tax share, the Highway Use Tax and DMV fees. These sources do not provide enough revenue to meet North Carolina's high levels of growth and demand for infrastructure. All of these revenue sources combined (including the new Strategic Transportation Investments) are only adequate to fund 1 in 5 of the 3,100 projects submitted for the last STIP update. To help meet these needs the state is pursuing alternative funding solutions, such as public private partnerships and bond programs. Governor McCrory has proposed two bonds of approximately \$1.4 billion. One would be used for roads and the other for other types of public infrastructure.

4.2.2.1 NCDOT – Strategic Transportation Investments law (STI)

In 2013, the Strategic Transportation Investments law (STI) was passed by the North Carolina legislature which provides more funding flexibility to the NCDOT. In addition, the STI also establishes the Strategic Mobility Formula, which is on data-driven scoring and local input. It was used for the



GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Recommendations of the Freight Plan

first time to develop NCDOT's current construction schedule, the 2016-2025 STIP.

<https://www.ncdot.gov/strategictransportationinvestments/>

4.3 POLICY RECOMMENDATIONS

In conjunction with the freight infrastructure improvement recommendations, the freight policy recommendations will provide guidance in the maintenance and investment of the freight infrastructure and movement of freight and goods in the GCLMPO. A list of freight policy recommendations area provided in **Table 4.3**.

Table 4.3: General Freight Policy Recommendations

General Freight Policy Recommendations			
Category	Source	Recommendation	Notes
Program	Stakeholder Input, Best Practices	CCOG and planning partners should continue to work with multi-state partners to make corridor-wide system decisions.	
Program	Stakeholder Input, Best Practices	Establish "logistics villages" within the greater Charlotte region.	The goal of logistics villages is to help increase economic activity and transportation efficiency at these sites, such as access between intermodal and private distribution centers, rest and parking areas for drivers, and fixing choke points and bottlenecks. This is an opportunity for Public Private Partnership.
Program	Stakeholder Input	Increase and/or raise awareness of training opportunities for careers in logistics and transportation.	Partner with local technical training programs and colleges to promote training opportunities.
Program	Stakeholder Input	Develop local transportation plans for areas adjacent to freight intermodal facilities.	Incorporate freight related transportation needs into planning efforts for freight related land use development plans. This includes traffic impact analyses and necessary modal access.
Program	Stakeholder Input	Prioritize intermodal connection projects, as these projects are often the most conducive to reducing overall supply chain costs.	This should be used to inform MPO/TPO planning partners of the prioritization of intermodal connectivity in transportation planning.
Program	Stakeholder Input	Develop a freight network resiliency plan. This plan would help bring freight dependent industries back online after an emergency event and would assist with hurricane relief efforts. This plan should be developed with local or state homeland security partners.	
Program	Stakeholder Input	Create a commercial vehicle crash database. Extract commercial vehicle crash data from the statewide database to identify patterns or particular situations to address.	Data compiled in development of the Freight Plan; identify staff resources to maintain and provide data for interested parties
Program	Best Practices	Ensure freight representation and participation by private sector in the MPO planning processes.	
Program	Stakeholder Input, Best Practices	Prioritize projects designed to improve freight mobility and eliminate freight bottlenecks.	



GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Recommendations of the Freight Plan

General Freight Policy Recommendations			
Category	Source	Recommendation	Notes
Program	Best Practices	Understand funding available for freight including traditional and non-traditional funding sources.	Incorporate freight funding education into overall freight awareness campaign. Include freight funding programs in the regional coordination efforts.
Program	Best Practices	Leverage public-private partnerships for funding non-highway improvements.	
Program	Best Practices	Partner with local, state and federal agencies to expand programs that support fuel efficiency in the transportation industry.	Partner with Centralina Clean Fuels Coalition to engage freight industry in efforts.
Program	Best Practices	Support the accelerated retirement of older model year heavy duty vehicles and rail equipment focusing on idle reduction and low emissions technology.	Partner with Centralina Clean Fuels Coalition to identify grant programs for upfitting outdated equipment with more efficient engines/technologies.
Program	Best Practices	Support improved inspection and maintenance of vehicles to minimize emission.	Partner with Centralina Clean Fuels Coalition to identify programs to support maintenance programs for equipment in the freight industry.
Program	Best Practices	Identify anti-idling policies to enact in freight districts around the region (railyards, queuing areas).	Partner with Centralina Clean Fuels Coalition to engage freight industry in efforts.
Program	Best Practices	Expand the use of Intelligent Transportation Systems, technology, and innovation to improve the flow of freight such as:	Surveillance systems to identify congestion or traffic disruptions, Variable Message Signing, Electronic tolling, Ramp control/metering during peak traffic hours.
Program	Best Practices	Use technological solutions to address truck parking such as real time parking availability, reservation systems, cashless payment, and navigation using smart phone technology.	
Program	Best Practices	Expand the use of automated enforcement such as weigh stations.	
Program	Best Practices	Expand the use of automated truck permitting especially for county and state roads.	
Program	Best Practices	Reduce the number of at-grade highway rail crossings where feasible.	
Program	Best Practices	Facilitate the sharing of information, best practices and training among local Emergency Response agencies to improve Traffic Incident Management. Support the creation of local incident management teams and regional Incident Management Task Forces (IMTF) with specific area assignments.	Identify opportunities to coordinate with NCDOT, SCDOT and local agencies on Traffic Incident Management and Emergency Response Management.

4.4 PUBLIC-PRIVATE PARTNERSHIP OPPORTUNITIES

With the expectations of additional freight expected for the Charlotte Region, increases in freight trucks is anticipated to move the freight and goods through the region. The competition for limited funded resources increases, finding alternative funding solutions will be important to stretch funding for freight needs for public and private entities.



GCLMPO Freight Profile (Continued)

Gaston-Cleveland-Lincoln MPO Freight Profile • Recommendations of the Freight Plan

4.4.1 Truck Parking

As more freight trucks travel on the freight network, constructing safe rest areas to accommodate freight truck parking. Public agency partners should work with private fleet owners identifying vehicle parking trends of drivers. Offering a safe environment for truck parking, while reducing the negative impact from truck parking on private property and roadway shoulders. Communication of available parking at public and private truck parking sites should be provided via ITS technology or other connected technologies to communicate with truck drivers about parking availability.

4.4.2 Truck Data

Target opportunities to share freight data between public agencies and private industries which benefit both entities by providing public agencies with travel movement and volumes, while providing the public infrastructure most utilized by private fleets priority for public investments. Detecting freight related movements between private and public to prioritize investments on the freight transportation network. Public agencies should continue to investigate data technologies and coordinate with private data providers for data sharing opportunities.

Benefits to sharing data include:

- Data to enhance and validate regional and state travel demand models;
- Data to calibrate freight trip lengths in travel demand models; and,
- Potential for enhancing performance measures.



GCLMPO Freight Profile (Continued)





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