3. Planning Factors

Moving Ahead for Progress in the 21st Century (MAP-21), the federal transportation legislation enacted in 2012, carries on the eight (8) planning factors that were established under the former Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), originally enacted in 2005. Accordingly, the Charlotte Regional Transportation Planning Organization (CRTPO) considers projects and strategies that will address the following planning factors:

- Support the economic vitality of the metropolitan area;
- 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;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, and improve the quality of life;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.
The Charlotte Regional Alliance for Transportation (CRAFT) is made up of the four MPOs and one RPO in the Charlotte region, and was created in 1999 to facilitate regional transportation planning in the greater Charlotte area. Members of CRAFT meet on an adopted quarterly schedule.

**Economic Vitality**

The CRTPO has worked extensively over the years with the North Carolina Department of Transportation (NCDOT) and other state and federal agencies on transportation projects that enhance the economic prosperity of the area.

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

The alliance marks a coordinated effort to guide the Charlotte region in broader planning to serve the rapidly merging urban areas. The four MPOs in the Charlotte region—Cabarrus-Rowan MPO, Gaston-Cleveland-Lincoln MPO, Rock Hill-Fort Mill MPO and CRTPO—have signed a Memorandum of Agreement to work cooperatively on regional transportation issues and have begun meeting on an adopted quarterly schedule. The RPO – Rocky River – also participates in CRAFT activities. Together, these five organizations formally represent the vast majority of the region.

Also important is the completion of the I-485 loop and widening of I-77 and I-85. These freeways will continue to provide important access to other parts of the country and benefit the CRTPO area economy through improved transportation for people and goods, and increased tourism. In addition, a study was recently completed to evaluate potential improvements to the I-277 loop which provides access to center city Charlotte.

Another significant improvement to the economic vitality of the region is the construction of a large intermodal facility at the Charlotte-Douglas International Airport. The new facility will be able to accommodate air, train, and truck freight movement all in one strategic location. Construction began on the intermodal facility in spring of 2012, and is anticipated to be completed in 2014. The CRTPO area is also served by two regional airports in the cities of Statesville and Monroe, both of which are seeking to improve access roads to the respective airports. One other notable airport improvement that will benefit the region’s economy is the beginning of scheduled commercial service to the Concord Regional Airport, located in the adjacent Cabarrus-Rowan MPO planning area.
The implementation of an efficient transportation system that includes mass transit and bicycle and pedestrian facilities, such as greenways, will preserve the area’s reputation as a desirable place to locate businesses. Examples of capital and planning improvements to the transit, bicycle and pedestrian, and greenway networks include:

- The Blue Line Extension;
- CityLYNX Gold Line;
- Mooresville-Charlotte Trail;
- Carolina Thread Trail; and
- Lake Norman Bicycle Route.

**Safety**

The CRTPO takes a number of measures to increase the safety of the transportation system for all users. Specifically, the CRTPO considers safety as a criterion in both its roadway ranking methodology and its bicycle and pedestrian ranking methodology. In addition, the Charlotte Department of Transportation (CDOT) produces an annual inventory of high accident locations to identify where there may be a need for safety improvements. Projects are then developed to improve the conditions. NCDOT also conducts similar studies and has a safety program to address these needs.

One of the primary goals of the CRTPO is to “Provide, manage, and maintain a safe, efficient and sustainable transportation system for all modes, intended to serve all segments of the population.”
The CRTPO also supports the implementation of other projects to ensure the safety and security of its users. These include:

- The construction of median guard rails on freeways;
- The replacement of deficient bridges and structures;
- Traffic calming strategies and the implementation of road diets;
- Creation of safety standards (updated annually) for implementing safety and security throughout the transit system;
- Installation of crosswalks and signal timing improvements;
- 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.

These measures and project implementation strategies are in place to help accomplish one of the primary goals of the CRTPO, to “Provide, manage, and maintain a safe, efficient and sustainable transportation system for all modes, intended to serve all segments of the population.”

**Security**

When MAP-21 became law in 2012, it carried over the planning factors from the former SAFETEA-LU, in which security became a separate planning factor required in the state and metropolitan planning process. The Charlotte region is a large urban area with important infrastructure, facilities, utilities, and population and employment centers essential for security planning.

Securing and managing incidents at these sites is addressed by a range of organizations throughout the region, including transportation and law enforcement agencies. Various safety and security plans address interagency coordination and areas of responsibility, such as:

- The Charlotte Center City Evacuation Plan;
- Union County Multi-Jurisdictional Hazard Mitigation Plan; and
- Iredell County Emergency Operations Plan.

Additionally, transportation plans include strategies to reduce crashes and the transportation impacts of such incidents, while law enforcement and emergency management plans generally focus on managing incidents after they occur, including evacuations and the security of property and people.
Accessibility and Mobility Options

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

- Integrating land use and transportation planning;
- Providing the necessary resources to enhance the existing transportation system;
- Expanding the existing transit system;
- Implementing fixed route mass transit options;
- Expanding shipping facilities at Charlotte-Douglas International Airport; and
- Improving access to the multiple airports throughout the region.

Land use and transportation policies such as the Complete Streets policy adopted by the NCDOT in 2009 and the Urban Street Design Guidelines adopted by the City of Charlotte in 2007, are being instituted to support transit ridership, walking, and bicycling—and reduce dependency on the automobile. More compact development patterns at activity centers and along transit corridors will make the transit system more economically self-sustaining. In neighborhoods in Charlotte and in some parts of north Mecklenburg County, transit-oriented development that emphasizes a mix of uses and easy pedestrian access to shopping and services could reduce the need to drive.

The Centralina Council of Governments (CCOG) completed the development of a mobility management program in September 2013 through a grant from the NCDOT. The project study area was the nine-county Centralina region, with the City of Charlotte and Mecklenburg County at its core. The area has a combined population of approximately two million residents that are served by nine separate community transportation systems and four fixed-route systems. Combined, these systems carry in excess of 1.3 million para-transit and demand response trips per year. The overall goal of the mobility management project was to develop a range of strategies to improve mobility services for older adults, persons with disabilities, and veterans. These strategies became the basis of a Mobility Management Agency (MMA) for the nine-county region.

The Charlotte urban area is also a major shipping hub for the Southeast. Continued support of this hub is provided through widening and maintaining the interstate system and improved access to the intermodal facility at Charlotte-Douglas International Airport and other intermodal facilities in the area. Improved access to the other regional airports in Monroe and Statesville remains a priority as well.
Environmental Protection, Energy Conservation, and Sustainable Development

The CRTPO is committed to protecting and enhancing the environment, promoting energy conservation, and prioritizing investments that encourage more sustainable growth patterns. This idea is specifically spelled out in the MTP’s goals and objectives, to “Provide a sustainable transportation system that improves the quality of life for residents, promotes healthy living and is sensitive to significant features of the natural and human environments.”

The member governments within the urban area look to protect their important resources by enacting environmentally sensitive land use policies, developing transportation choices, and promoting air quality education programs. Land use policies include buffers around the rivers and streams, impact fees for runoff caused by impervious surfaces, and roadway designs that mitigate runoff impacts in critical watershed areas. Land use decisions are being made to direct growth to reduce travel demand, which in turn leads to energy conservation and reduced pollutants.
System Integration and Connectivity

The CRTPO has developed and supports programs and projects that enhance the integration and connectivity of a multi-modal transportation system. It is also a goal of the CRTPO to “Encourage regional collaboration and linkages between transportation and land use planning.” The following examples describe how these ideals are carried out within the metropolitan planning area.

- The intermodal facility being constructed at the Charlotte-Douglas International Airport provides a critical link for movement of goods between rail, highway, and air;

- Ambitious transit plans provide opportunities for people to enjoy a more mobile system that allows them to conveniently access many parts of the urban area – specifically, expansion of the platforms of the existing Lynx Blue Line, and expansion of the Blue Line from Center City to the campus of UNC Charlotte;

- Park-and-Ride Lots enable auto commuters to access the current bus and rail system and will be available for the expanding rapid transit system;

- Bicycle racks on buses allow people the flexibility to access bus stops by bike, improving the attractiveness of the system;

- CRTPO’s policy to add sidewalks to non-freeway roadways enables citizens to leave their vehicle at home for short trips;

- Mecklenburg County’s growing greenway system provides connectivity for pedestrians and bicyclists between neighborhoods, schools, shopping areas, and employment centers, and plans are underway to expand the system further north to Mooresville, in Iredell County;

- The Carolina Thread Trail is a regional network of greenways, trails, and blueways that currently accounts for approximately 135 miles across 15 counties, linking people, places, cities, towns, and attractions. Continued efforts to conserve land and expand the Thread Trail are ongoing within CRTPO’s planning area and the surrounding counties; and

- The Lake Norman Bicycle Route will improve roadways around Lake Norman in Catawba, Iredell, Lincoln, and Mecklenburg counties to include safe accommodations for bicyclists.

The City of Charlotte and other CRTPO members also emphasize connectivity between neighborhoods, whether vehicular, bicycle, pedestrian—or a combination of the three—by maintaining collector street plans and land use development policies that require multi-modal connectivity between existing and new land uses. Providing and expanding connectivity creates a linked network that can minimize congestion and reduce unnecessary trips on thoroughfares and freeways.
Efficient System Management and Operations

Federal regulations require that operational and management strategies be implemented that will help improve the performance of existing transportation facilities. It is intended that these strategies will aid in the relief of vehicular congestion and maximize the safety and mobility of people and goods. Along with the CRTPO’s goal to “Maximize travel and transportation opportunities for the movement of people and goods,” the following strategies have been identified within the CRTPO planning area to account for the efficient management and operations of the transportation system:

Traffic Monitoring System
The City of Charlotte assists NCDOT by collecting site-specific information on Highway Performance Management System sample locations. Both the City and the State complete counts at these locations. In addition, the City of Charlotte collects speed and classification automatic traffic counts and performs studies on these data. The City annually updates Uptown’s off-street parking inventory and peak-hour demand for parking. This includes verifying the existing inventory of parking supply, identifying new parking supply and collecting information on parking rates. The City is also implementing a vehicular way-finding system in the Uptown area.

Safety Management System
The Traffic Safety Unit of NCDOT’s Traffic Engineering Branch works to implement safety improvements on the State highway system. In addition, CDOT compiles accident data on all streets within Charlotte, except the urban freeways and interstates. These data are used to identify hazardous locations. Safety improvements as a result of these efforts might include supplemental signing, pavement marking revisions, signal timing changes, turn prohibitions, and pedestrian and traffic safety educational campaigns.

Traffic Operations Plan
The non-capital measures above are complemented by capital improvements to address safety at hazardous intersections, improve high-accident locations and high-congestion locations, and select intersection and safety improvement projects for inclusion in the North Carolina Statewide Transportation Improvement Program (STIP).
Preservation of the Existing System

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

- Maximizing utilization of the existing facilities;
- Increasing operational efficiency and altering travel demands when appropriate; and
- Minimizing adverse impacts to the natural, social and economic environments.

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

Examples of collaboration of State and local agencies, as described, can be found in the following activities undertaken by the CRTPO and its member jurisdictions:

- NC 73 Transportation/Land Use Plan (and subsequent NC 73 Council of Planning);
- US 74 Corridor Study in Union County;
- Mooresville to Charlotte Trail; and
- Fast Lanes Study.

Asset management strategies for pavements and bridges have also become an increasingly important funding consideration, especially as many of the interstate highways and arterial roadways near the end of their useful lives. NCDOT maintains the second largest highway system in the nation in terms of centerline lane mileage, coupled with a growing population within North Carolina, the identification of a sustainable funding source to maintain the existing system and add capacity will be a challenge in the coming decades. The NCDOT 2040 Plan has inferred that maintaining the existing funding levels for infrastructure health will drop the percent of pavement miles in good condition from 68 percent to 50 percent by 2017, and bridge performance will drop from 61 percent to 54 percent during this time. Based on what is reported in its 2040 Plan, the NCDOT needs to identify alternative funding sources to continue to maintain its system.
Federal legislation (MAP-21) has required each state to complete a Transportation Asset Management Plan that includes inventory, condition, life cycle cost, and a financial plan to maintain its system. The NCDOT will begin the development of its Transportation Asset Management Plan in 2014. In addition, the ongoing maintenance of other non-roadway (bicycle, pedestrian, transit, aviation) assets needs to be a consideration at the long range planning and project programming levels. The CRTPO will continue to partner with NCDOT to ensure that infrastructure health is a primary factor in all planning activities.

Sources: