12

Transportation

GASTONIA 2025
our place in the future

12 TRANSPORTATION

Transportation Goal

An efficient transportation system that is environmentally sensitive and fiscally responsible, while being responsive to the community's needs, remaining consistent with land use plans, and fostering economic vitality.

Introduction

An effective transportation system is critical to the economic and social well being of the community. The City of Gastonia recognizes the importance of developing an efficient transportation system that is environmentally sensitive and fiscally responsible, while being responsive to the community's needs, remaining consistent with land use plans, and fostering economic vitality.

Transportation refers to the movement of people, goods, services, and information. It is a term that includes driving, bicycling, flying, transit, and walking. However, rapid growth, decentralized land use patterns coupled with new technologies, and other demographic and lifestyle changes has lead to increased reliance on cars as the sole means of transportation. This reliance has placed considerable demands upon the City's transportation system and has been responsible for an increase in transportation-related air pollution, increased congestion, longer driving distances and the loss of agricultural and open space areas to urban development.

Unlike past transportation planning strategies that responded to growth by identifying new road and other capital facility requirements, this element of the Comprehensive Plan proposes goals and policies which that prescribe a new direction for Gastonia that integrates land use and transportation system planning to allow the City to accommodate population growth and new development while maintaining community mobility and quality of life. Priority should be given to using the present road structure more efficiently, promoting alternative modes of transportation, and using traffic–calming techniques. This new direction recognizes the need to develop sustainable development patterns and, therefore, offers goals and polices that shift from narrowly tailored strategies focused on moving vehicles, to strategies that will result in an efficient, multi-modal transportation network that minimizes impacts to the environment and reinforces livability of neighborhoods.

If we successfully embrace and implement these strategies, then the City of Gastonia will be ready to take advantage of alternative transportation options that will contribute to an excellent quality of life. Strategic investment in new lanes, new corridors and new capacity for all modes will better connect the City with the rest of the region. Failure to reduce auto dependence will find us, in 20 years, with a degraded quality of life and much more difficult and costly transportation, land use and environmental problems to solve. The goal is to achieve a balanced system that meets the needs of people of all ages and abilities, while also meeting the needs of businesses, industry, and area employers.

Background

Access to transportation was pivotal to Gastonia's origin and growth, first as a settlement and later as a City. Gastonia began with the establishment of Gastonia Station on the newly built Charlotte & Atlanta Airline railroad, which is now the Norfolk Southern railroad running east-west through the county. The station was located at the junction of that railroad and a north-south railroad, now also part of the Norfolk Southern system. This junction, and the excellent access to rail service, spurred Gastonia's growth. Textile mills, freed from the necessity of locating near a river, began to locate along the two rail lines, which allowed them to bring in raw materials and ship finished products to distant markets. Gastonia eventually overtook Dallas, first as the business and population center of Gaston County, and later as the county seat.

Although rail transportation has declined in importance since that time, the overall transportation system has never been more crucial to Gastonia than it is today, and that significance is expected to grow over the next twenty years. Our physical transportation system consists of roads, sidewalks, bikeways, rails and airports. The operational transportation system includes cars, trucks, buses, airplanes, trains, bicycles, shuttle vans and pedestrians. Specialized transportation for products, such as water and natural gas, is provided by pipelines that run though Gastonia, giving customers access to these products.

Figure 12-1: Charlotte MSA, Employment 2000, 2005, 2008

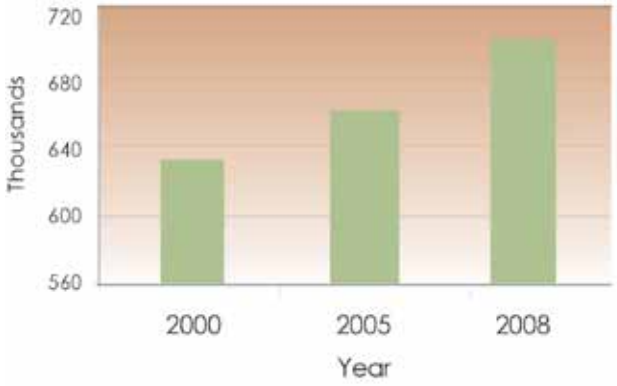
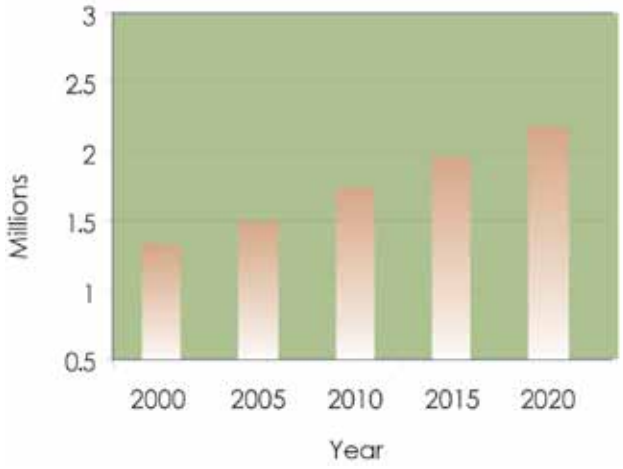


Figure 12-2: Charlotte MSA, Projected Population

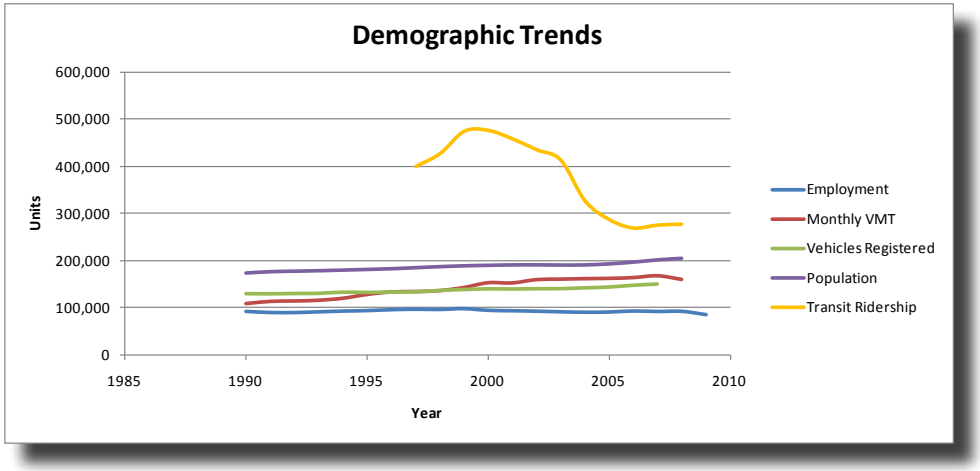


Challenges to a Growing Region

The Charlotte MSA population grew very rapidly over the course of the last four decades. The Charlotte MSA ranks seventh on the top ten list of the fastest growing MSAs in the country. Figures 12-1 and 12-2 display current and projected population and employment for the Charlotte region. This growth was largely attributed to newcomers moving to the region attracted by employment, affordable housing, and mild winters. However, with growth, came new realities which have strained counties and cities across the region as they struggle to keep up with the demand for housing, amenities, transportation and schools. Land development, which occurred over the past decade, has resulted in an acceleration of sprawl into the region's undeveloped outlying areas– specifically in counties immediately adjacent to Charlotte. The current regional rate of population increase, if continued, will result in a population of 3,228,000 by 2025.

Gastonia is the second largest city within the Greater Charlotte region. State estimates show Gastonia ranked as the 14th largest city by population in North Carolina. As shown in Figure 12-3, Gaston County experienced increases in population, the number of automobiles registered, and the number of vehicle miles traveled (VMT) from 1990 to 2010, despite employment remaining relatively flat. More recently, however, there has

Figure 12-3: Demographic Trends in Transportation, Gaston County



Sources:
LINC -NC Census Lookup (Population, Vehicles Registered)
NCDOT (VMT)
Employment Security Commission (Employment)
City of Gastonia Transit Division (Gastonia Transit Ridership)

been a slight shift in travel patterns for Gaston County. The number of automobiles in the region increased slightly and the number of vehicle miles traveled (VMT) decreased, despite a population increase of only seven percent. As the region continued to spread out, commuting patterns changed, trip lengths became longer and required the use of an automobile to complete. A large number of daily commuters are traveling out of the county for work. In fact, 2008 figures from the Employment Security Commission of North Carolina indicate that 48% of employed Gaston County citizens commute out of the county for work. Many of these workers drive alone. This is impacting both air quality and the demand for infrastructure as more vehicles are added and the labor force grows. Surprisingly, between 2005 and 2010, due first to rising gas prices and then the global recession, the number of daily vehicle miles traveled remained relatively flat, and transit ridership, which decreased steadily from 1998 through 2006, increased over the past two years. These patterns mirror regional, state, and national trends, where transit ridership is at the highest level since the early 1950s. The consequences of rapid growth have been both positive and negative. To continue to accommodate this growth and maintain a high quality of life, we must elect creative and innovative transportation approaches.

Many planning agencies across the region have been working in collaboration to develop a strategy to address the regional transportation related issues. However, proposals are limited to surface transportation and regional transit which focus exclusively on planning, prioritizing and building singular facilities. A reality that many have been forced to face now, more so than in the past, is that it is impossible to build our way out of existing problems. Rather, the proposed strategies should focus on developing a sustainable multi-modal system that provides access to users of all modes and abilities. The following is an assessment of the major transportation challenges within the Charlotte region.

Choice

The private automobile is the transportation mode of choice for citizens within the City, as is true for most within the region, state, and nation. The personal automobile with its instant availability, point-to-point travel, and high speed has made it an integral part of daily life for a multitude of people. Automobile dependency has deeply influenced people's lifestyles and subsequently, the physical landscape of the City. What makes people use, or prefer, the car more than public transport or some other mode of transportation? What will facilitate the use of public transport? An understanding of the factors that affect mode choice is essential to the promotion of more sustainable behavior and the achievement of developing and maintaining a multi-modal system.

As illustrated in Figure 12-4, conventional planning assumes that transport progress is linear, consisting of new faster modes of transport. While this perspective recognizes that there are various modes of transport, the model will

Figure 12-4: Transportation Progression Models

Conventional
Walk → Bicycle → Train → Bus → Automobile → Improved automobiles
Sustainable Model
Walk → Improved walking conditions
Bicycle → Improved cycling conditions
Train/Bus → Improved innovative public transit service
Automobile → Improved automobile travel conditions

always result in a single dominant mode and therefore, transportation strategies will almost never place biking, transit or walking as a priority over automobile travel. The result of this model is a system with limited choices for travel. Sustainability, on the other hand, reflects a parallel model, which assumes that each mode is useful, and strives to create a balanced multi-modal system where each mode is integrated into the transportation network for what it does best. This model, as illustrated in Figure 12-4, provides the community choices for transport and does not assume that improved transport necessarily means faster travel or more mileage. Improvements may increase comfort and safety, provide cost savings, or even reduce the total need for travel.

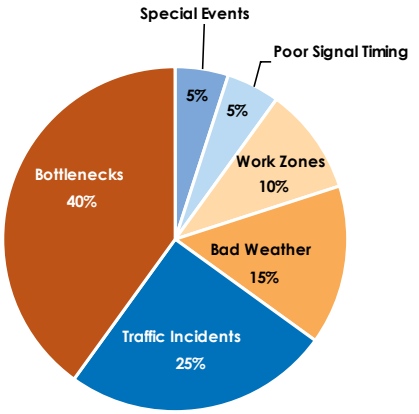
A multi-modal system recognizes that there are various modes used for transporting people and goods throughout the community. It also recognizes the importance of places and connecting people to these places. This system is the most effective solution to provide a sustainable network for all users at any scale. However, creating this system will require education on all levels from elected officials to citizens and business owners. This will involve the development of innovative ways to better inform and/or educate of the impacts of the current model and the benefits of a model centered on providing users of all levels more options for choice and connectivity. Therefore, the City must continue to conduct more comprehensive analysis of the issues and expand public involvement during transportation planning processes. Creating a transportation network with alternative modes of travel will not only enable the City to better manage cost, but it will allow the City's leadership to strengthen its role as environmental stewards in North Carolina. As needs and travel behaviors change over time, a multi-modal, multi-user system is essential for developing a sustainable economically viable City for future generations to enjoy.

Congestion

Congestion is an everyday occurrence within the City, county, and Charlotte region. Congestion results when the number of cars on the road exceeds the capacity of that road. While rapid growth—particularly in outlying suburban areas—has contributed to long rush hour commutes, much of the increase in traffic is due to our over-reliance on cars. Current data suggest that daily vehicle miles traveled continues to outpace population growth. Growth expected in population and employment will bring with it an increased need for travel. Based on the population and employment growth anticipated for the Charlotte MSA, general vehicle travel is expected to increase by 30 percent by 2025. Without improving the transportation network to meet this growing demand, additional street segments and intersections will experience congestion.

Not only does congestion cause delay and personal frustration, but it also affects the movement of people and goods, results in excess greenhouse gas emissions and increases stress on critical infrastructure. Congestion, (some of the major sources of which are described in Figure 12-5) means increased travel times and unreliable pick-up and delivery times for truck operators. To compensate, motor

Figure 12-5: Major Sources of Congestion



Source: Federal Highway Administration

Rendering of proposed multi-modal center to be located in downtown Gastonia. This facility will access a commuter rail line, Amtrak, Greyhound buses and the Gastonia Transit bus system. It will also provide park-and-ride parking, bike racks and pedestrian connectivity for those using these modes of transportation.

carriers will need to add vehicles and drivers and extend their hours of operation, eventually passing the extra costs along to shippers and consumers. Individuals and families are also affected; they both have financial budgets and "the cost of time" that are impacted by congestion. Regional economies are affected by these household and business-specific impacts which diminishes cost competitiveness and market growth opportunities and are practically the same as a reduced ability to maintain, develop, and draw businesses. Additionally, the relocation of business and household activity to other areas and the direct delay for trips that are not diverted or otherwise changed both lead to decreases in air quality, increases in public infrastructure investment requirements, and potential impacts on health and quality of life factors. As part of the region's long-range transportation plan update, decision-makers decide how to address congestion and mobility issues within the constraints of available revenue, while balancing the need to sustain our environment.

Connectivity

Connectivity is about linking road, walking and cycling networks within the City that will support an integrated and sustainable transportation system long term. The street system in central Gastonia is primarily designed in a grid pattern, with most streets running north-south and east-west. Outside of the Center City, the road system is primarily built off a framework of old farm-to-market roads. The old farm roads tended to follow the ridgelines throughout the county, and as a result their path curves with the terrain. Roads that are parallel inside the City may intersect farther out in the county. Thus local knowledge of the road system is generally necessary for navigation in the more suburban and rural parts of Gaston County.

The Gaston Urban Area MPO, NCDOT, and the City of Gastonia have developed programs and projects that enhance the development, integration, and connectivity of a multi-modal transportation system. For example, the current proposed Gaston East-West Connector, also referred to as the Garden Parkway, is a proposed tolled highway from I-85 west of Gastonia in Gaston County to I-485 in Charlotte, Mecklenburg County. The approximately 22-mile long road would create a new connection between southern Gaston County and western Mecklenburg County across the Catawba River, and would improve east-west mobility and connectivity within southern Gaston County. This connector would provide another link for movement of goods between rail, highway, and air.

Ambitious transit plans in Charlotte-Mecklenburg will provide many opportunities for the region's population to enjoy a more mobile system to access the entire Region. Park-and-ride lots will provide auto commuters an opportunity to access the current bus system, and will be available for the planned rapid transit system. Bike racks on buses allow people the flexibility to access bus stops by bike, improving the efficiency of the system.

Funding

In today's economic climate, transportation infrastructure dollars are scarce and decisions are harder to make because there are many competing projects and construction cost continue to increase. However, it is important to realize that if we do not continue to support our infrastructure, the problems will grow progressively worse. Regular maintenance of our aging infrastructure is just as important as future projects. Since we are in a non-attainment area, we need to find solutions to mitigate our air pollution. Not only should money be invested in roads and highways, we also need to look for solutions in other modes of transportation.

One of the particular problems of this area is the numerous substandard North Carolina Department of Transportation maintained streets within the 2025 Planning Area. Many of these roads have only nine to ten-foot travel lanes. New residential development is occurring rapidly on these substandard roads. Lack of lane width contributes to crashes. The substandard roads provide no accommodation for pedestrians and cyclists.

The City's funding sources for roads are shown on Figure 12-6. One funding source for road projects is mandated through the State Street-Aid Allocation Law, commonly referred to as Powell Bill. Powell Bill allocations are made to incorporated municipalities that establish their eligibility and qualify as provided by G.S. 136-41.1 through 136-41.3. The general statutes require that a sum be allocated to the qualifying municipalities equal to the amount produced during the fiscal year by one and three-quarters cents on each taxed gallon of motor fuel. The statutes also provide funds be disbursed to the qualified municipalities on or before October 1, thereby allowing sufficient time after the end of the fiscal year for verification of information and to determine the proper allocations and preparation of disbursements. Powell Bill funds must be expended only for the purposes of maintaining, repairing, constructing, reconstructing or widening of local streets that are the responsibility of the municipalities or for planning, constructing, and maintaining bikeways or sidewalks along public streets and highways. In 2007, the City of Gastonia received $1,438,239 in Powell Bill funds.

The primary, consistent source of construction funding for new transportation projects is the NCDOT State Transportation Improvement Program (STIP), which improves safety and sets highway and bridge priorities consistent with environmental policy. Committed STIP projects presently in various stages of development, such as planning, design, land acquisition, and construction, will help meet local travel demand for future growth.

The State of North Carolina uses an Equity Formula [G.S. 136-17.2(a)] to divide the federal and state road funds among local areas. An important component of the Equity Formula is the number of unpaved road miles in each county, but Gaston County has fewer unpaved roads than any other county in NCDOT Division 12. However, Gaston County has more narrow (substandard) roads than any other county in the division, placing it and other urban counties at a relative disadvantage.

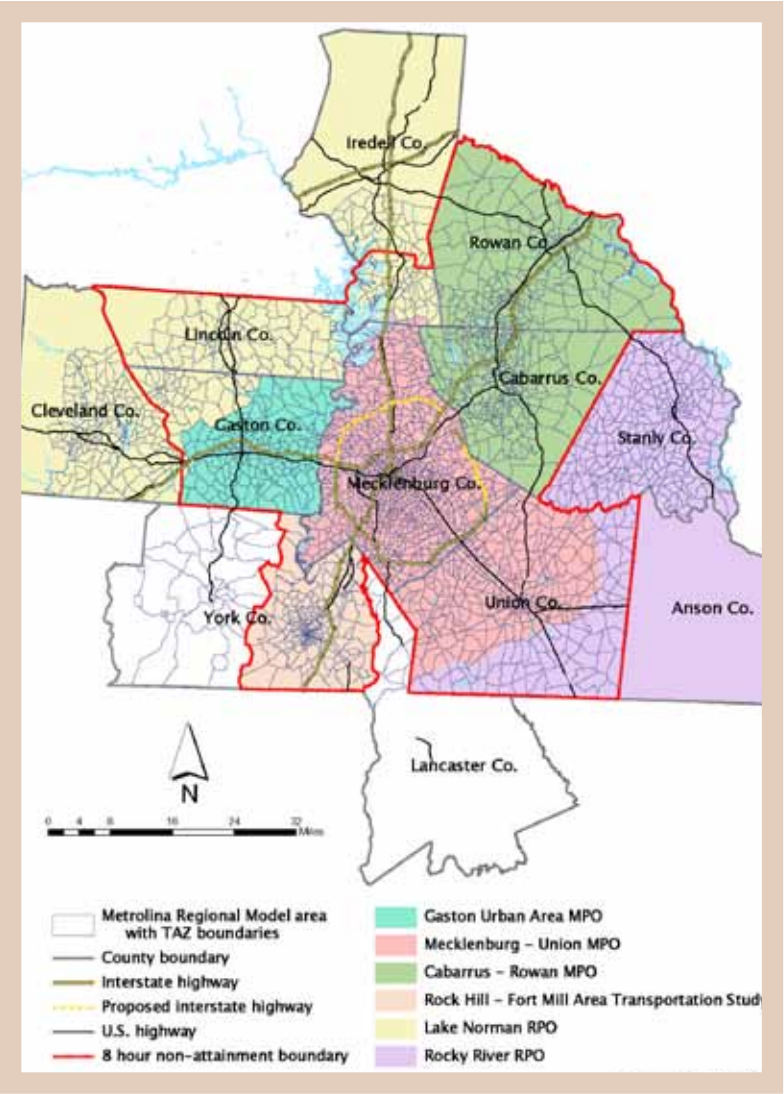
The problem of funding maintenance projects points to another difficulty that the City will need to deal with often in the future. In 1989 the General Assembly approved the Highway Trust Act to develop a statewide intra-state system of roads. In recent years, however, a decreasing number of local projects have been funded through NCDOT. The State's inability to fund many of its road projects is due, in part, to the General Assembly's action of moving $180 million annually (one-third of the fund) from the Highway Trust Fund to other priorities. If this trend continues into the future, Gastonia, and many other cities, will suffer from mounting unmet transportation needs.

The need for additional funding was recognized by Gastonia when voters approved a $40 million + bond referendum to improve and build roads within the City, many of which are maintained by the State. The Citizens Advisory Committee on Surface Transportation was formed by City Council in June, 1985 to study Gastonia's road needs and to recommend solutions to street and road problems. The Committee initially recommended a $5 million bond issue for roads, passed in 1986, and later recommended an additional $35 million bond issue, which the voters of Gastonia approved in 1990. Gastonia

Figure 12-6: Funding Sources for Roads

Source	Purpose
Powell Bill	Maintain, repair, construct, reconstruct, widen local streets, sidewalks, and bicycle lanes.
STIP	Improve safety, highway & bridge priorities, provide alternative transportation choices.
Highway Trust Fund	Develop a statewide intra-state system of roads.
Local Bonds	Widen roads, make intersection improvements, construct new roads and sidewalks, and acquire rights-of-way.

Figure 12-7: Metrolina Regional Model and Non-attainment Area



voters have acknowledged the need to locally fund transportation projects, and again approved a two-third bond reissuance for $2,700,000 in 2002 and most recently approved a $27.4 million bond measure in May 2010. Two-third bonds are general obligation bonds which are limited to two-thirds the amount of principal debt retired in the previous fiscal years, and do not require voter approval. The bond money has been used to fund road widenings, intersection improvements, new construction of roads, sidewalk construction and right-of-way acquisition. These include the Armstrong Park Road/Gaston Day School Road extension and widening, Hudson Boulevard (completion of a four lane divided facility from York Road to S. New Hope Road) and the extension of Hoffman Road from Gaston Day School Road to Hudson Boulevard (four lanes divided).

A new development for the City is participating in the development of the Carolina Thread Trail (CTT). The Carolina Thread Trail is a regional trail network that will eventually reach 15 counties and over 2 million people. The City of Gastonia received funding from the American Recovery and Reinvestment Act OF 2009 (ARRA) for the Marietta Street Bridge Improvement project which includes a Downtown Gastonia Carolina Thread Trail Bicycle/Pedestrian connector. The City of Gastonia also received a design grant from the first Carolina Thread Trail Implementation grant. This grant, coupled with City funds, will be used to expand the City of Gastonia's greenway system. The City will continue to look for innovative funding and financing approaches to help meet the dual challenges of better managing demand, particularly in congested areas, and increasing investments in capacity.

Figure 12-8: Roadway Map

Comprehensive Plan 2025

City of Gastonia, North Carolina

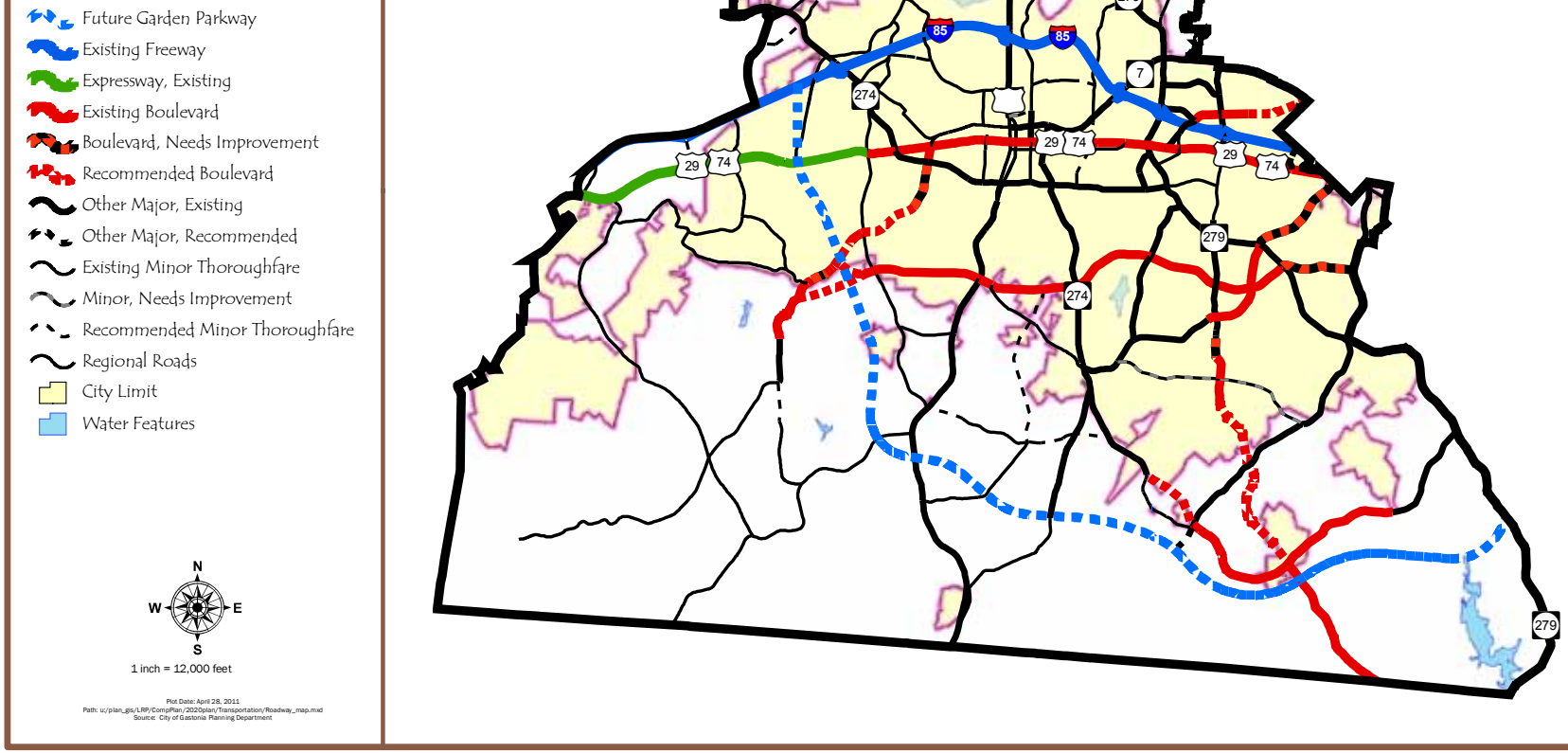


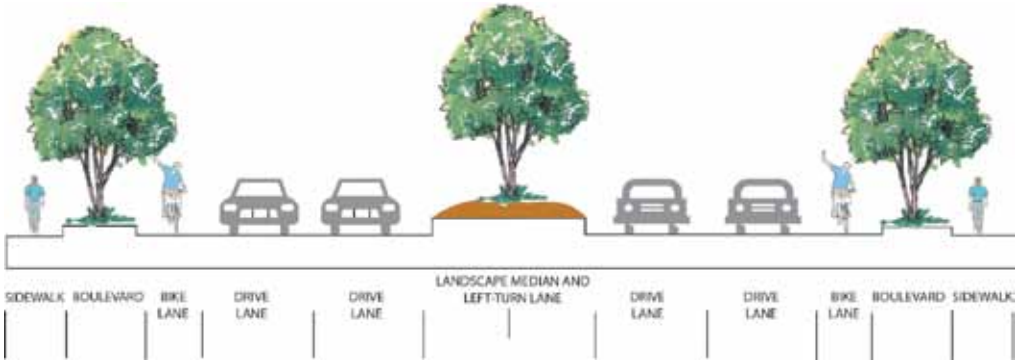
Figure 12-9: Summary of Thoroughfare System Classification

Classification	Typical Average Daily Traffic Volumes	Typical Section	Typical Characteristics	Examples
Interstate or Freeways	48,000 – 120,000 Vehicles Per Day	A minimum of four lanes with continuous median	Carries regional traffic at high speeds. No at-grade intersections and no driveway access from adjoining land.	I-85
Major Thoroughfares	15,000 –35,000 Vehicles Per Day	A minimum of two lanes in each direction with medians or center turn lane	Carries traffic that is primarily moving through the City or to points outside Gastonia. Although local access to the road is permitted, the primary function of the road is for through traffic.	Franklin Blvd, Wilkinson Blvd, Long Ave, Garrison Blvd,
Minor Thoroughfares	8,000 – 20,000 Vehicles Per Day	A minimum of one lane in each direction without median (ultimately no more than 3 lanes)	Moves traffic between major thoroughfares. Minor thoroughfares typically have two or three lanes and can also serve as collector streets.	Hudson Blvd,
Collector Street	2,000 –8,000 Vehicles Per Day	One lane in each direction	Provides for traffic movement between arterials and local streets and carries moderate traffic volumes over limited distances. Collector streets are distinguished from minor thoroughfares in that collector streets are not intended for through traffic from outside the neighborhood.	Arnstrong Park Rd, Ozark Ave, Rosebude Dr.
Local Streets	300-1000 Vehicles Per Day	One lane (26 to 38 feet) in each direction	Provides access to abutting properties, tends to accommodate lower traffic volumes, serves short trips, and provides connection to collector streets.	Main Ave, Second Ave, Rankin Ave

Poor Air Quality

The USEPA designated Gaston County as a non-attainment area for ozone pursuant to a one-hour dissipation standard. In 2005, Gaston County was designated as non-attainment for the eight-hour ozone designation. Gaston County was previously designated a non-attainment area for the one-hour ozone designation. Shown in Figure 12-7, Gaston County is included in the overall greater Charlotte region for non-attainment. Certainly this designation can be attributed to increased trips by motor vehicles, increased travel time, congestion, and longer trips all of which contribute to deteriorating environmental quality. Changes to the transportation system will improve local, regional, and global environmental quality, protect the quality of life in residential areas, and reduce the use of energy and the consumption of undeveloped land. The City of Gastonia has in recent years taken a more active role to educate citizens about the air quality issues and incorporates environmental stewardship into transportation programming whenever possible. Environmental stewardship means we must adopt policies to reduce car use, support transit, and encourage walking and bicycling as key to reducing transportation-related environmental impacts.

Figure 12-10: An illustration of a typical "Complete Street"



Transportation Network

Roadway & Highway System

Gastonia's existing roadway network is extensive, with thoroughfares ranging from two-lane minor thoroughfares to eight-lane major freeways. Figure 12-8 illustrates the City's major roadways and the proposed connections and expansions as adopted in the Thoroughfare Plan for the urbanized area. Currently, the way a road is designed is based on the functional classification as described in the thoroughfare plan. This functional classification for the thoroughfare system refers to a prescribed hierarchy of street types typically including major and minor thoroughfares, collectors, and local roads. The current classification system provides little flexibility in road design and does not consider the surrounding land uses and the potential users of the corridor. Using such as guideline has proved effective in accommodating vehicle movement throughout the City; however there have been unintended consequences of this system. As the lead transportation-planning agency for the City of Gastonia, the Gaston Urban Area MPO works with municipal staff and developers to acquire right-of-ways for future corridors, thoroughfares, widenings or new alignments and to implement multi-modal design elements to accommodate for alternative modes of transportation. Figure 12-9 summarizes the thoroughfare classifications system.

The main focus of road function is centered on the automobile. Specifically, many of the streets are designed primarily for automobile traffic, with less regard for other users of the transportation network. This creates potential conflicts between bicyclists, pedestrians and vehicles, and limits opportunities for bicyclists and pedestrians. In order to meet the needs of all users, streets and corridors should consider multiple modes of transportation. It is recommended that the City develop a "complete streets" policy approach that recognizes transportation corridors and networks are more than just places for automobiles. The City's roadway network should be designed to accommodate the needs of all users. Those users include motorists, transit riders, bicyclists, and pedestrians of all ages and abilities–including children, the disabled, and elderly people. This concept focuses on changing long standing transportation planning practices that narrowly focus on moving as many cars as possible to one that seeks to reflect a balance between various modes and surrounding land uses.

What are Complete Streets?

"Complete Streets" is an initiative by which cities, states, and other jurisdictions adopt a policy that future roadway projects will safely accommodate all users- pedestrians, bicyclists, motorists, transit riders, drivers of motor vehicles, and people of all ages and abilities, including children, older adults, and people with disabilities.

Many bicycle and pedestrian crashes are preventable. Better engineering, innovative and widespread education strategies, and enforcement of laws can make the difference. The number of crashes involving cyclists and pedestrians is greater than generally recognized. Gaston County ranked #11 in the state in the number of bicycle crashes occurring from 1997 to 2007, the second highest in the Charlotte region.

Source: NCDOT Division of Bike/ Pedestrian Transportation

The concept of complete streets is a transportation policy that is rapidly gaining favor both in the Charlotte MSA and nationally. Complete streets are streets that are designed to enable safe access for all users. Pedestrians, bicyclists, and transit riders of all ages and abilities should be able to use the road networks in ways other than strictly for use by motorists. This requires engineering design standards for adequate sidewalk widths, bicycle lanes, buffers, and landscaping. Streets designed for multiple modes and users lead to improved safety, increased transportation options, and creates access to the transportation network for the young, old and disabled. There is no single design that works in all instances; therefore ,not all streets should accommodate all modes of transport. Traffic volumes, types of adjoining land use, and right-of-way widths are some of the factors that will influence the facilities included in a street designed under the complete streets concept. Not every street will require dedicated bike lanes or bus and transit features to make it multi-modal or a complete street. The important point is that streets are designed with all anticipated potential users from the beginning, rather than relying on expensive modifications at a later date. Gastonia's streets should be thought of as an integral part of the community and transportation network, not just a bare thoroughfare serving only the automobile. Therefore, the City should study, and possibly implement, a complete streets policy. This policy would serve as the guideline for street design whenever new streets are created or existing streets reconstructed or upgraded.

Air Travel

Located off Union Road just south of downtown, Gastonia Municipal Airport was built by the City of Gastonia in 1946 and is a self-supporting department of the City of Gastonia. The City contracts with a private firm to direct daily operations and derives revenue from fuel sales, hangar rentals, land lease fees, and tax revenue. The Airport receives Federal Aviation Administration (FAA) and North Carolina grants for airport improvements and maintenance and is generally considered one of the most active general aviation facilities in North Carolina.

Gastonia Municipal Airport serves a growing number of corporate aircraft that are powerful and quiet enough to use the convenient and economical facility. Private aircraft owners occupy more than 30 hangars with easy access to the runway and value the full parallel taxiway and brief wait times. Area emergency medical services and law enforcement agencies use Gastonia as a heliport and transport point. Charlotte Douglas International Airport is located just 10 miles east offering scheduled commercial service to Gastonia and Gaston County residents.

Bicycle & Pedestrian Circulation

Whether it is on either end of an automobile trip, to and from a transit stop, or during a recreational activity, it is imperative that pedestrians and bicyclists are accommodated with safe, accessible pathways. Walking and bicycling can be practical alternatives to driving and should be viewed in a broader context. The bicycle and pedestrian system, as described here, is one interconnected system consisting of all non-motorized travel including: bike lanes, sidewalks, crosswalks, trails, and greenways. They are a means of circulation that strengthen business centers, contribute greatly to neighborhood quality and vitality, and help achieve safety, environmental, open space, and public health goals. Therefore, non-motorized travel paths should be coordinated with roadways in a comprehensive system that assures continuity for pedestrians and bicyclists.

In recent years, the City has constructed walkways, bicycle lanes, and greenway trails through neighborhoods,

commercial corridors, and within existing City parks, but these remain fragments of an overall planned system. The City realizes the importance of creating a strong pedestrian and bicycle network throughout the City with particular emphasis within the Center City and is in the midst of strengthening those connections by the Highland Rail Trail, the Downtown Pedestrian Connector and the Avon and Catawba Creeks Greenways as illustrated in Figure 12-11. Once complete, the real potential for integrating alternative modes of transportation into the Center City will be realized. The City has worked with the Gaston Urban Area MPO and NCDOT to develop several programs and projects to strengthen pedestrian paths throughout the City. Also, with the adoption of the Unified Development Ordinance and the changes made in the subdivision ordinance, the City has adopted an overall policy designed to enhance pedestrian circulation, access, and safety along corridors, downtown, in new residential developments, employment centers, and near schools, libraries, and parks. Some examples include:

- Crosswalks, including the necessary improvements, may be required at or near the center of any block that is more than 1,000 feet long, or at the end of cul-de-sac streets, where deemed necessary, for pedestrian circulation and for access to schools and commercial areas.

- Supporting Safe Routes to School, an infrastructure improvement program that encourages children to walk and bike safely to school. The City coordinates with the Gaston Urban Area MPO to identify projects eligible for program funding.

- Adopting new sidewalk standards to require: sidewalks on both sides of any major or minor thoroughfare that traverses through a subdivision; sidewalks placed on one side of any collector street that traverses through or abuts a subdivision; sidewalks placed on one side of all local subdivision streets with the exception of cul-de-sac streets that are less than 250 feet in length, or that provide access to 10 or fewer dwellings; and, sidewalks where a subdivision abuts an existing street, other than a thoroughfare.

- Supporting Rails-to-Trails to develop greenway trails along existing rail corridors.

- Conducting a sidewalk inventory to identify gaps in connectivity and to locate areas that need maintenance or rehabilitation.

A lot has changed over the last decade and policies have been updated to promote a more pedestrian-friendly environment within various locations throughout the City. However, many gaps in bicycle and pedestrian networks exist, particularly in key locations such as downtown, retail centers, schools, libraries and in some residential neighborhoods. Therefore, it is imperative that the City work together with its partners to create a comprehensive bicycle and pedestrian plan. This plan will ensure the improvement and further development of a well connected system of bicycle routes and pedestrian facilities that meets the needs of City residents. Improvements to this network are further identified in the *2030 Gaston Urban Area MPO Transportation Plan*. Modifications to these planned corridors will jointly occur through the Gaston Urban Area MPO process and update of the twenty year plan.

Figure 12-11: Bicycle and Pedestrian circulation in Center City Gastonia

Existing and planned Gastonia greenways and rail trails will take pedestrians and bikers from Rankin Lake Park to downtown Gastonia, connecting by sidewalk to destinations such as the County Courthouse, the Schiele Museum and the Main Library. From there one could take the existing Avon and Catawba Creeks Greenway to further residential or recreational destinations. Once complete, the real potential for integrating alternative modes of transportation into the Center City will be realized.

Figure 12-12: Bike Routes, Gaston County

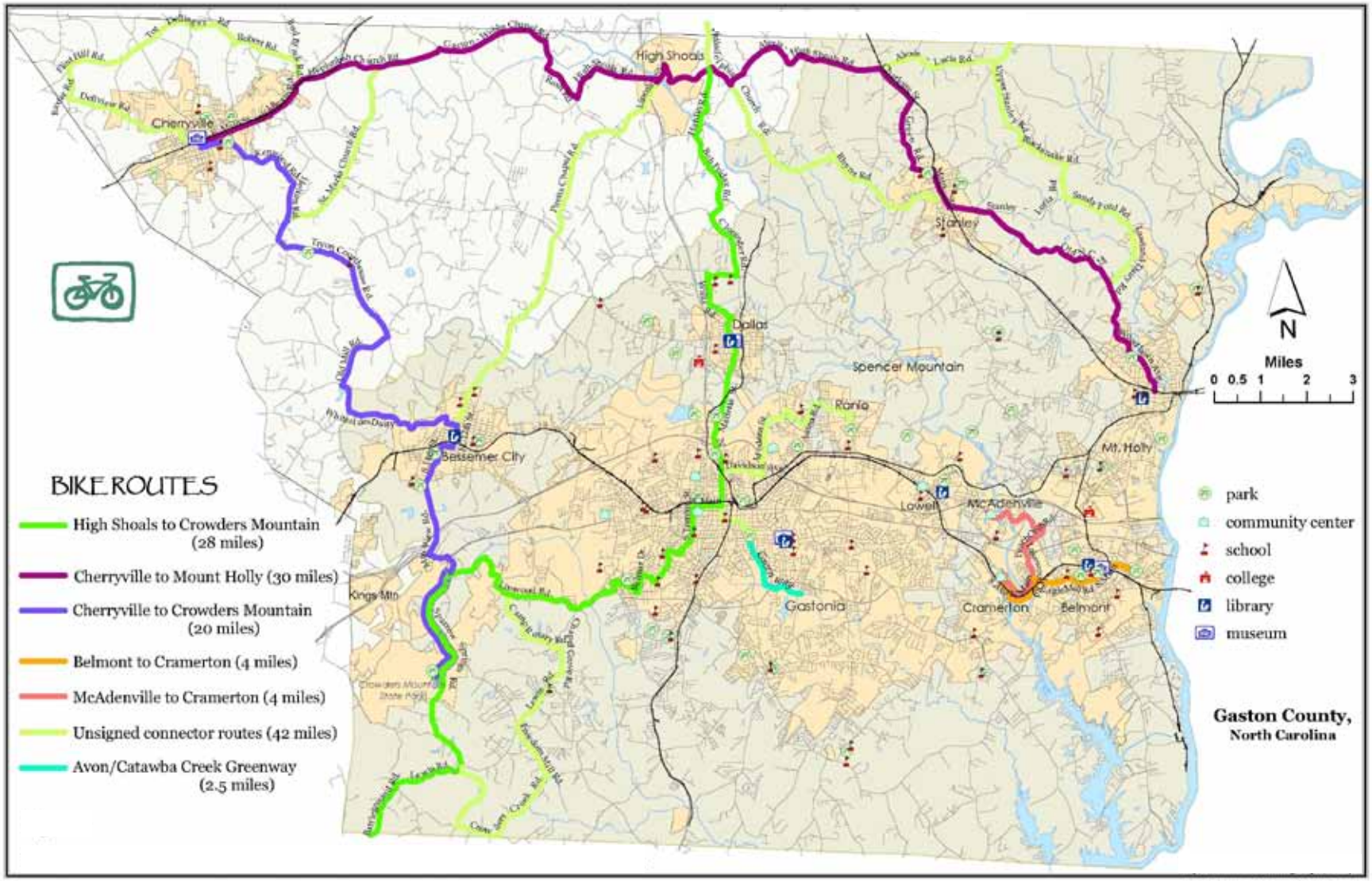
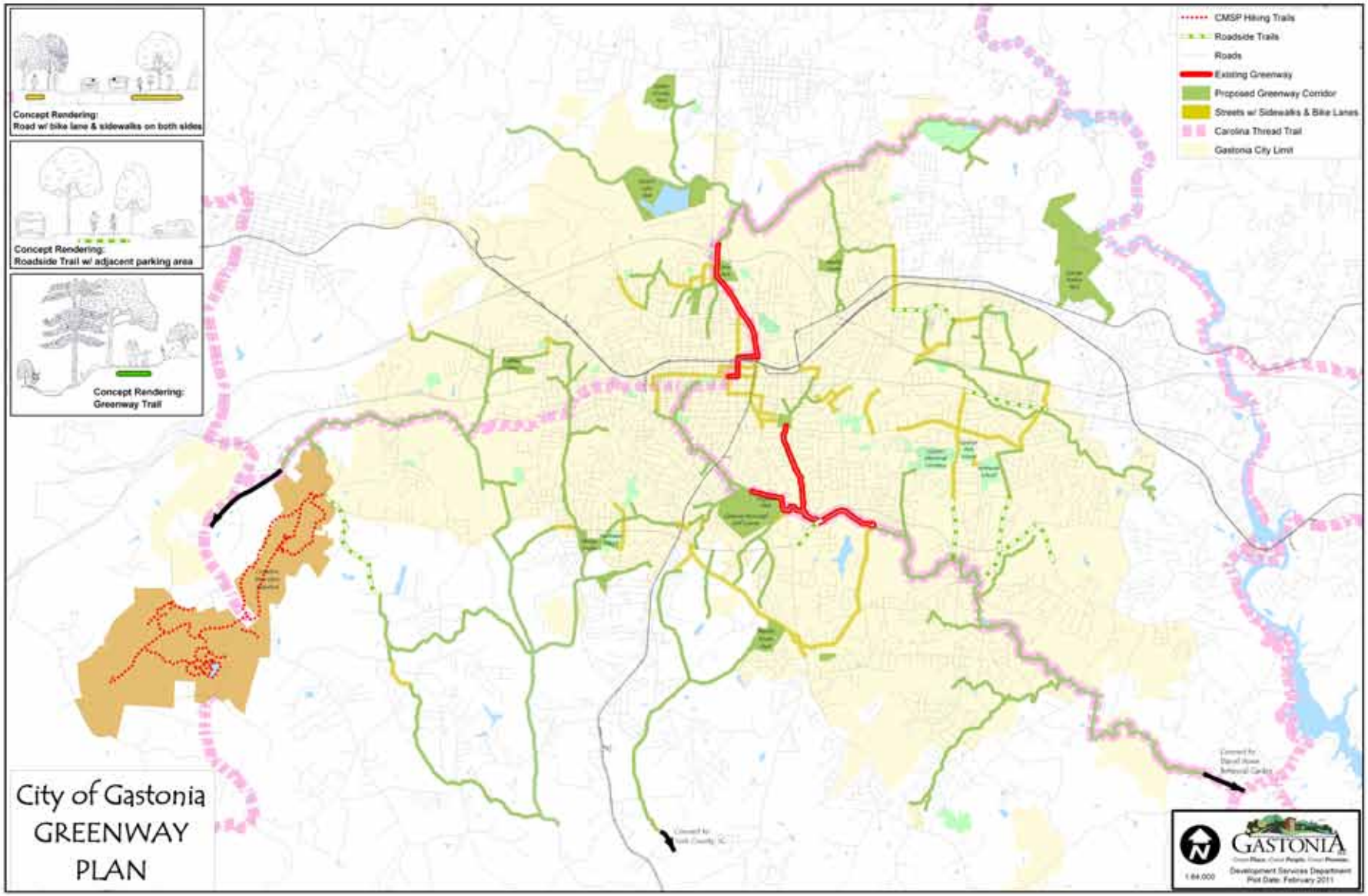


Figure 12-13: Gastonia's Greenway Plan



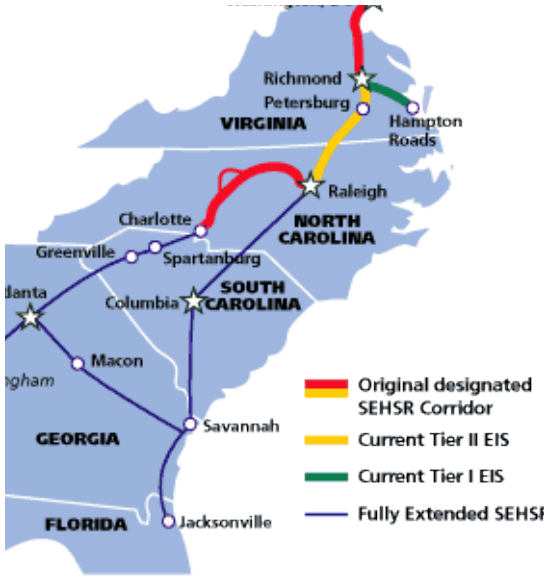


Figure 12-14: South East High Speed Rail (SEHSR) Corridor

Public Transportation

Rail line from Washington to Atlanta

As Gastonia's population and traffic grow, development of rail transportation becomes increasingly important as an alternative to auto and air transport for both freight and passengers. The NCDOT works with local communities and host railroads to plan for future services that will meet growing transportation needs.

In October 2002, the Federal Railroad Administration and Federal Highway Administration confirmed and approved the preferred Southeast High-Speed Rail Corridor, shown in Figure 12-14. North Carolina and Virginia are now identifying the next steps necessary to develop high-speed rail in each segment of the corridor and soon will begin more detailed environmental and engineering studies to examine different track configurations.

Gastonia Transit

The City of Gastonia has operated Gastonia Transit since 1978 when it acquired the assets of a private transit company. There are two types of service provided by Gastonia Transit, fixed route and complementary American Disability Act (ADA) para-transit bus services. As its name suggests, the fixed route system follows the same schedule on each trip arriving at set locations at pre-determined times. The para-transit system, however, is designed to be flexible and serves disabled members of the community who lack access to the fixed route system.

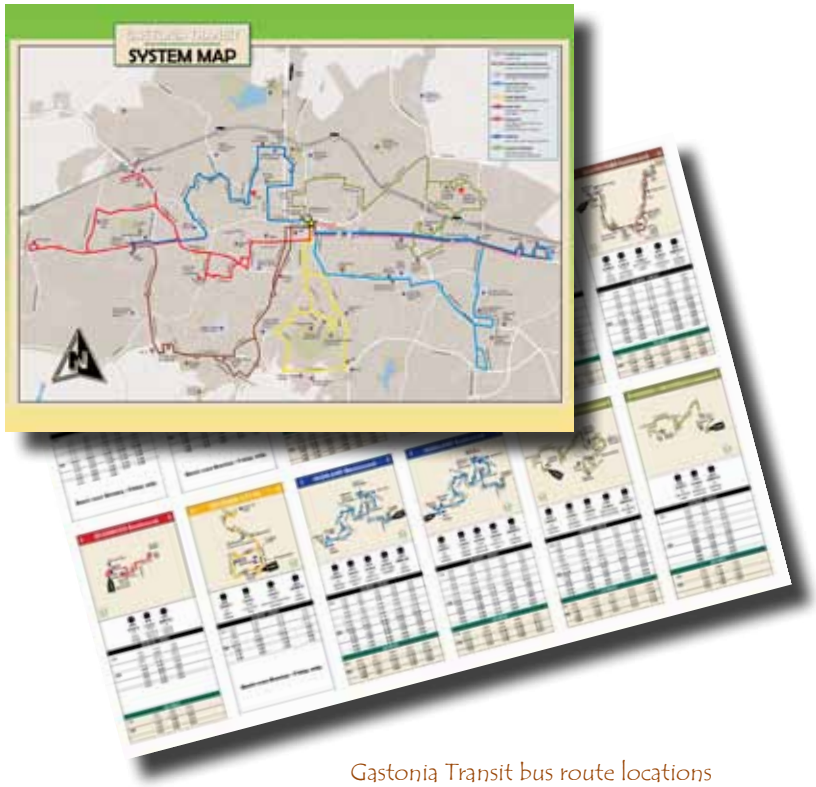
Two Gastonia Transit para-transit vans are equipped with wheelchair lifts to handle the special needs of disabled patrons. While geared towards the physically or mentally challenged, the service is open to the general public. The service area is confined to the City limits of Gastonia, serving a population of approximately 72,000 people.

In June 2009, Gastonia Transit purchased 5 low-floor 35-foot buses fueled by clean diesel fuel. Gastonia Transit also utilizes a 40-foot low floor bus that operates on compressed natural gas (CNG).

A central transfer point is located at Bradley Station in downtown Gastonia. Most of the routes are operated as one-way loop routes and operate on a "pulse" schedule system so that all the buses arrive and depart from the station at the same time. This allows for easy transfers between routes as well as greater service coverage; however, the indirect routing results in increased travel times for some passengers. The City of Gastonia also provides intra-city bus service, through Gastonia Transit, with eight transit routes running on 45 minute headways.

Gastonia Transit's bus fleet consists of seven 35-foot transit buses, three demand response vans, and the only compressed natural gas ("CNG") bus in the state of North Carolina. All buses pass through the Downtown Transfer Terminal, the Bradley Station. This allows for easy and quick transfers. Gastonia Transit covers over 292,000 miles per year, providing service to over 325,000 passengers annually.

The Gaston Urban Area MPO and the City of Gastonia, initiated a transit expansion study in the spring and summer of 2007. *The Gastonia Transit Expansion Study* was primarily to assess the feasibility of expanding current transit operations to better serve other municipalities outside of



Gastonia Transit bus route locations and schedule.

Gastonia in Gaston County; however, it is also taking a more comprehensive look at service needs in general, including the need for additional hours of operation, improvements to the frequency of service, development of expanded services to neighboring counties, and other enhancements. Currently, transit services operated by Gastonia Transit (the local urban transit system) are limited to the area inside the City limits of Gastonia. Some general public transportation is provided by Gaston County ACCESS (the local community transit system), but it is limited in scale and scope. ACCESS primarily serves clients of human service agencies and other customers with special transportation needs.

The plan provides a prioritized list of eight responsive strategies to transit needs. The recommendations addresses concerns regarding the efficiency of the current system, as well as opportunities for future expansion.

Gastonia Transit Van Services

The ADA Van Service operates curb-to-curb van service for passengers who cannot use the fixed route bus system due to a physical or mental disability. Service is operated during the same hours and days as the fixed route bus service. Service must be scheduled at least one day, but not more than 14 days, in advance. Trips may be scheduled for any purpose and are handled on a first call basis. The ADA Van Service is only operated in the City limits of Gastonia and the cost for this service is two dollars per trip. Family members of van riders, or a social agency, supplies personal care attendants, who assist passengers on trips. At times, the vans carry multiple passengers from different locations.

Express Bus Service

In 1996, the Gaston Urban Area MPO conducted a survey of citizens regarding transportation issues. According to that survey, over 50 percent of residents used, or would be willing to use, alternatives to the single-occupancy vehicle, including staggered work hours, bus service, and car or vanpooling. Further, a Route and Schedule Evaluation performed by the Institute for Transportation Research and Education found that peak hour service (6:30 AM to 9:00 AM and 3:00 PM to 5:30 PM) constituted only 30 percent of all trips on Gastonia Transit. This is significant in that it shows that the traditional work commuter is

Bradley Transit Station, home of Gastonia Transit

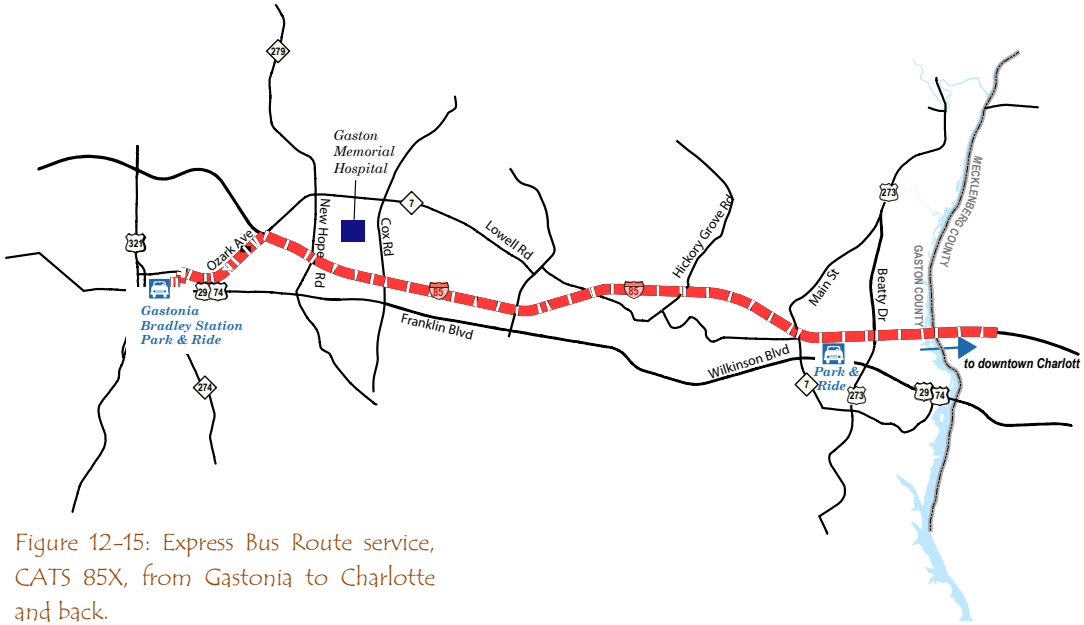


Figure 12-15: Express Bus Route service, CATS 85X, from Gastonia to Charlotte and back.

85X Bus Route and departing bus, leaving from downtown Gastonia to deliver riders to downtown Charlotte.

not using transit service. According to the 2000 Census, approximately 23,101 Gaston County residents commuted to Mecklenburg County for employment.

The idea of implementing an express bus service to Charlotte came forward during the last Long Range Transportation Plan process as a way of increasing vehicle occupancy, reducing congestion, and improving air quality. The first Gastonia Express Route bus left Bradley Station on March 5, 2001. This service is a combined effort of the Charlotte Area Transit System (CATS) and the City of Gastonia, with CATS operating and marketing the service and Gastonia contributing 50 percent of the operating costs.

The Gastonia Express, the route along I-85 through Gaston County illustrated in Figure 12-15, provides commuters with four departure times from Gastonia every weekday morning. After making a stop at Belmont's Abbey Plaza, the route travels along I-85 to Freedom Drive and makes several stops in uptown Charlotte. The bus departs from the Charlotte Transportation Center in uptown Charlotte each afternoon at four departure times, with each trip taking approximately one hour. For those patrons who have an emergency during the workday and need to return home early, the CATS Guaranteed Ride Home Program is available.

Over the past five years, Gastonia Express ridership has increased significantly. In January of 2005, there were 3,090 riders, compared to January of 2009 where there are 5,557 riders per month. This service has become a welcome service for commuter, which is evident by ridership number which increased by 80% during this time.

Land Use & Transportation Coordination

Development patterns and community characteristics considerably influence the distance and manner in which people travel. Over the past several years, the increase in sprawl and development patterns meant that people spent more time on the road traveling to jobs, services and their homes. When residential, commercial, employment and other uses are separated by significant distances, more of the trips and errands will be made by automobile, as walking, cycling and public transit become less practical.

Projected population increases within the 2025 Planning Area will place added pressure on the current road system to move more people. The amount of commuting from Gastonia to Charlotte, and other areas in the region, has increased over the past 20 years. New and expanding retail centers in the eastern part of the City create traffic congestion areas. How effectively the City deals with growth, traffic congestion, and land use planning will influence the future quality of life in Gastonia.

Transit, car and van pools, walking, and bicycling are more viable in areas where activities are concentrated and travel distances are less. Short vehicle trips can also be more effectively distributed over a well–developed network of local streets, freeing up capacity on freeways and major thoroughfares for longer trips. The investment in planning to develop a better integration of land use and transportation planning is an important way to reduce traffic congestion and help develop smart growth.

ISSUES

Issues

- The need for increased compatibility between transportation infrastructure and land use is essential to developing a sustainable community.

- Reducing automobile dependency through the promotion of public transit, construction and rehabilitation of walkable neighborhoods.

- As the City grows, planning for additional public transportation services, including the need to support flex route services, extended service hours, van fares and Gaston County Access is to address the needs of the citizens of Gaston County. There is also a need to explore bus trolley service linking the downtown businesses, offices and government buildings.

- The development of a regional commuter rail public transportation system is needed to serve adjacent counties.

- Applying context-sensitive design principles to new or expanded infrastructure projects. Context-sensitive design seeks to develop transportation facilities that fit their physical settings and preserve scenic, aesthetic, historic, and environmental resources while maintaining safety and mobility.

- There is a need to continue to establish an integrated network of greenways, open spaces, trails and sidewalks for non-motorized traffic connecting residential, commercial, mixed-use and recreational areas.

- Regional Transportation Coordination. The growing problem of congestion is not unique to Gastonia; it also affects Gaston County, Charlotte, and all the surrounding communities. Enhancing road connectivity and reducing traffic congestion by providing multiple routes to major destinations within the region is crucial. Therefore, linking the transportation planning work of the Gaston Urban Area MPO, with Charlotte Area Transit, Cabarrus-Rowan Urban Area, Mecklenburg-Union Urban Area and the Rock-Hill – Fort Mill Area Transportation Study, plus the Lake Norman and Rocky River Rural Planning Organizations is important. Both the State and the Federal government have been encouraging MPO's that are obviously linked by transportation demands to work together.

- Projected transportation funding is not sufficient to construct all of the projects that have been identified as priorities. The challenge is to provide the highest level of service possible using the limited amount of funding.

- While the City has various well managed transportation components, there is a need for an efficient multi-modal transportation system. An efficient and seamless multimodal transportation system would effectively meet these critical transportation demands and efficiently move both passengers and freight throughout the community.

Objectives & Tools

Objective 1

Ensure that transportation plans are coordinated with land use goals.

Tools

a) Design a transportation system supportive of land use goals for compact, accessible, walkable neighborhoods.
b) Develop a transportation and land use vision for a regional or multi-jurisdictional corridor and evaluate future transportation and land use scenarios.
c) Prioritize transportation improvements based upon improving existing efficiencies, available right-of-way, and consistency with future land uses.
d) Base development approvals upon adequate transportation system capabilities.
e) Concentrate higher density development along transit corridors.
f) Coordinate transportation improvement projects with water and sewer extensions considering the growth this plan anticipates.
g) Improvements to, and new construction of roads, should be designed to minimize negative impacts to established neighborhoods.

Objective 2

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

Tools

a) Enhance mobility by increasing connectivity of existing and future street network.
b) Continue to evaluate the timing sequence and implement optimum phasing of all signals on major thoroughfares.
c) Increase transportation alternatives by adopting a "complete streets" policy that accommodates all street users: bicyclists, pedestrians and transit riders.
d) Implement transportation system and demand management techniques to maximize road capacity and improve traffic flow. Transportation system management improvements include: exclusive turn lane, access management programs, high occupancy vehicle lanes and other measures that improve efficiency while requiring minimal construction. Transportation demand management improvements are congestion-reducing travel demand programs, like ride sharing, flextime, transit use, walking and bicycling.
e) Create a network of bicycle-safe streets and bikeways serving bicyclists' needs, especially for travel to greenways and recreational destinations, commercial districts, transit stations, institutions, and recreational employment centers within Gastonia.
f) Develop citywide guidelines and regulations to mark safe bike lanes in every public parking facility.
g) Re-mark traffic lanes with a two-foot wide edge of pavement line on the Freedom Mill-Linwood Road-Neal Hawkins-Robinson Road-New Hope Road route; on the Gardner Park-Armstrong Park-Garrison Boulevard to Union Road route on Union Road; on the Redbud connector; and on New Hope Road from the Stowe Botanical Garden to NC 7.
h) Develop and implement education and encouragement plans aimed at youth, adult cyclists,

OBJECTIVES & TOOLS

and motorists to increase public awareness of the benefits of bicycling and of available resources and facilities.

i) Develop a connectivity policy that addresses intersection spacing, number of cul-de-sacs and their length, number of access points, connections to adjoining property and bike and pedestrian facilities.

j) Develop a collector street plan to determine long range connections for new development.

k) Develop a street type zoning overlay that defines the street use and design features that support adjacent land uses.

l) Continue the planning and development of the Multi-modal Center. The multi-modal tansportation center, located in the Center City, should serve as the primary passenger rail and intercity bus terminal in Gastonia, providing direct connections between buses, passenger rail, taxis, and airport bus shuttles.

Objective 3

Increase the community's use of the transit system and pursue objectives that support rapid transit to Charlotte.

Tools

a) Develop and establish minimum land use densities near transit centers and corridors.

b) Consider adding new routes and possibly expanding the service to other communities.

c) Provide affordable, practical, dependable, comfortable and desirable transit service.

d) Continue to address the needs of the transit-dependent population, persons with disabilities, and other special needs groups.

e) Prioritize the completion of sidewalk connections serving transit stops.

f) Increase the number of bus shelters, especially at high usage stops such as shopping centers and medical facilities.

g) Continue methods to increase transit use marketing, special programs and service analysis.

h) Once determined, protect the right-of-way for a rapid transit corridor to Charlotte.

Objective 4

Develop a transportation system that promotes healthy neighborhoods and improves environmental quality.

Tools:

a) Develop transportation systems and programs that maintain or improve air quality.

b) Accelerate the development of the greenway system in order to increase the number of bicycle and pedestrian trips.

c) Develop safe, accessible and attractive street corridors that are desirable for walking and bicycling.

d) Encourage private sector participation in vanpool programs.

e) Design transportation systems and facilities that preserve and complement the area's natural features.

Objective 5

Ensure regional programs and projects are consistent with the City's plans and policies.

Tools:

a) Continue to work with established regional transportation organizations.

b) Continue planning and coordination efforts to develop the regional trail system.

c) Promote additional bridge crossings over the Catawba River to handle increases in traffic on I-85 and US 29/74.

Objective 6

Expand transportation funding levels to maintain and improve the transportation system.

Tools

a) Work with the local legislative delegation to revise the State's Highway Equity Formula and Highway Trust Fund to increase the amount of road dollars that come to the Gaston Urban Area MPO area.
b) Consider seeking or establishing alternative funding sources for roadway construction.
c) Support regional, state and federal transportation initiatives to increase transportation funding.
d) Coordinate transportation facilities and improvements with development activities, and with regional transportation and land use plans to achieve maximum benefit with limited funds.

Objective 7

Apply context sensitive design principles to new or expanded infrastructure projects.

Tools:

a) Implement guidelines or standards developed for local streets that permit or specify widths, street geometry, utility placement, and provision of bicycle and pedestrian facilities that promote walkable, human-scaled communities.
b) Use designs for transportation projects and facility design oriented toward meeting the needs of users, the community served, and the natural environment.
c) Adopt transportation project selection criteria for the long-range transportation plan (LRTP) or transportation improvement program (TIP) that consider "smart growth" criteria, consistency with a state or regional land use plan or vision, and other land use objectives and criteria.
d) Raise the level of awareness about the connection between land use and transportation and how different options support each other.
e) Develop a transportation and land use vision for a region or multi-jurisdictional corridor and evaluate future transportation and land use scenarios.
f) Integrate design of new or expanded capacity road projects to minimize barriers and reduce visual and noise impacts to neighborhoods.