



# TRANSPORTATION ACTION PLAN

DECEMBER 2016



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# EXECUTIVE SUMMARY

## What is the Transportation Action Plan (TAP)?

The TAP is Charlotte's long-range, comprehensive, multimodal, transportation plan. The TAP describes:

- Goals, objectives and policies
- Strategies to address challenges and opportunities facing Charlotte over the next 25 years
- Types of investments needed to reduce today's deficiencies and keep pace with growth

### WHAT ARE THE CITY'S TRANSPORTATION GOALS?

- » Increase access to employment, education, parks, shopping and other key destinations
- » Promote transportation choices for all users
- » Provide a safe, balanced and efficient multimodal transportation system
- » Enhance quality of life in neighborhoods
- » Foster the efficient movement of people and goods through a connected network of local and regional routes
- » Support and complement the City's land use vision









# What will a fully implemented TAP accomplish?

The strategies and investments recommended in the TAP will:

- Reduce transportation deficiencies and accommodate future growth
- Increase access to employment, education, parks, shopping and other key destinations
- Enhance safety for motorists, pedestrians and bicyclists

**Serve 400,000 new residents of Charlotte over the next 25 years, and their 1.5 million additional trips**

## THE TAP RECOMMENDS \$5 BILLION IN FUNDING TO:

- ✓ Maintain a 12-year street resurfacing cycle
- ✓ Operate 760 signalized intersections, and add an additional 325 signals
- ✓ Construct 100 major roadway projects and 40 multimodal intersections
- ✓ Construct 250 miles of new sidewalks
- ✓ Construct 250 miles of new bike facilities
- ✓ Construct 150 traffic-calming projects
- ✓ Partner with NCDOT and developers to create better projects for all modes of travel







# Why are the strategies and investments recommended in the TAP important?

## 1. We have existing deficiencies

Charlotte has a lot of work to do on:

- Maintaining its roadways, bridges and sidewalks
- Enhancing traffic operations
- Improving walkability and bicycle travel
- Building complete streets

## 2. We still have work to do on safety

Since 2011, the motorist crash rate per million miles traveled has increased by 58 percent. In 2014, there were over 20,000 collisions and 39 fatalities (including one bicyclist and seven pedestrians) on roadways in Charlotte. One fatality is one too many.

## 3. We need to keep investing in moving people

- Charlotte's population is forecasted to grow from 800,000 people today to 1.2 million people by 2040.
- Between 2015 and 2040, daily person trips are forecasted to increase by 1.5 million trips.
- The hundreds of thousands of new residents will bring with them approximately 250,000 vehicles, however they will not be bringing the necessary infrastructure to keep Charlotte moving.

Charlotte is the  
**2nd fastest**  
growing large city  
in the country



**ADDING**  
**44**  
people to the  
city every day







# Why are the strategies and investments recommended in the TAP important?

## 4. We need to reduce today's deficiencies and keep pace with growth by continuing to invest in eight major categories

- Maintaining our System
- Creating Safer Streets
- Investing in Technology
- Building Complete Streets
- Improving Walkability
- Creating a Bike Friendly City
- Creating Great Places
- Preserving Future Opportunities

## 5. The TAP recommends investing \$5.1 billion in funding for these eight categories

To build, maintain, and operate a travel network with safe options for existing and future travel, the 2017 TAP Update recommends investing \$5.1 billion in our transportation network over the next 25 years.

## 6. Securing funding for transportation would keep Charlotte moving

As part of this Update, \$3 billion in transportation funding could be available from Charlotte's adopted Community Investment Plan (CIP), State and Federal sources and the continuation of transportation bond funding. An additional \$2 billion in revenue sources is needed to fully fund the TAP.









# CHAPTER 1: INTRODUCTION

Charlotte is projected to grow by approximately 400,000 new residents between 2016 and 2040. This amount of growth is comparable to the previous 25 years (1990 – 2015), when Charlotte grew by 380,000 residents. This means Charlotte has and will continue to add approximately 44 new residents per day.

Due to this growth, Charlotte has become the 17th most populous city in the United States, with many of the benefits and challenges commensurate with a large, growing city. These 400,000 new residents will likely bring with them approximately 250,000 additional vehicles, however they will not be bringing additional

streets, travel lanes, traffic signals, sidewalks, or any of the infrastructure required to keep people and goods moving throughout Charlotte. Consequently, this growth will increasingly strain our transportation infrastructure.

This update of the Transportation Action Plan (TAP) provides a framework to keep Charlotte's people and goods moving in the face of

this tremendous growth. It is the City's multimodal transportation plan that establishes the overall vision, policies, programs, projects, and funding necessary to meet Charlotte's transportation demands over the next 25 years. Since the TAP's first adoption in 2006, over \$530 million in new funding has been used to advance key road and intersection projects.

This TAP Update calls for a significant number of roadway improvements, and recognizes the need to make Charlotte more bicycle and pedestrian-friendly. As part of Charlotte's commitment to protecting residents' quality of life and providing transportation choices for all users, the City will continue to ensure that an increasing percentage of its residents are within walking or biking distance to neighborhood-serving land uses such as parks, schools, greenways, retail stores and employment areas. This will require transportation investments that benefit all modes of transportation, and successful implementation of the City's overall growth framework, the Centers, Corridors and Wedges Growth Framework.

## WHAT IS THE PURPOSE OF THE TRANSPORTATION ACTION PLAN?

*The purpose of the TAP is to provide a comprehensive policy and implementation strategy to achieve the vision of becoming the premier city in the nation for integrating land use and transportation.*

**44**  
new people  
will move to Charlotte  
EVERY DAY,  
for the next  
25 years.

## Charlotte Fast Facts for 2015



**809,958** Charlotte's Population

**2,455**  
Miles of streets



**1,890**  
Miles of sidewalks



**190**  
Miles of bikeways



**208**  
Bridges



**760**  
Signalized Intersections







---

## THE TAP UPDATE STRUCTURE

The Transportation Action Plan (TAP) Update carefully considers the challenges and opportunities facing Charlotte over the next 25 years, and recommends goals, objectives, policies and improvements to prepare the City to meet its future transportation needs. The TAP Update includes the following chapters:

### **Chapter 1 — Introduction**

This chapter introduces the TAP Update and describes the City of Charlotte's transportation and land use vision. This chapter also describes the relationship between the TAP and the Council-adopted Centers, Corridors and Wedges Growth Framework, and discusses the challenges of accommodating growth over the next 25 years.

### **Chapter 2 — Existing Conditions and Trends**

This chapter describes existing transportation and land use conditions to determine if we are meeting the TAP's mission statement of becoming the premier city in the nation for integrating land use and transportation choices. This chapter identifies existing transportation needs and current shortfalls to determine what, if any, changes should be considered in order to meet the mission statement. This chapter also presents the baseline land use and transportation measures that will be used throughout the 25-year planning horizon to determine how well the City is advancing the Centers, Corridors and Wedges Growth Framework.

### **Chapter 3 — Goals, Objectives and Policies**

This chapter includes the TAP's transportation mission statement, defines the City's goals and provides a comprehensive listing of objectives and policies to implement the goals and mission statement. Aligning the objectives and policies under each goal enables document users to fully understand how individual policies are working in conjunction with other policies to implement the City's mission statement and goals.

### **Chapter 4 — Project and Program Recommendations**

This chapter outlines recommended transportation projects and programs to be implemented within the 2016-2040 time frame. This includes a list of recommended programs to be funded, organized

by eight major categories, that will ensure the City is adequately investing in a transportation system that will keep Charlotte moving. The recommended programs and projects relate to the goals, objectives and policies identified in Chapter 3, and if fully-funded, would provide a comprehensive set of multimodal investments throughout the City.

### **Chapter 5 — Financing the TAP**

This chapter documents the existing and anticipated transportation revenue sources through 2040. The analysis includes estimates on projected future revenue from Federal, State, City and other financial sources. Chapter 5 also includes a list of additional revenue sources to consider in order to fully fund the TAP, and references peer cities that have adopted innovative ways to fund local transportation investments.

## APPENDICES

The following appendices provide supplementary maps, tables and documents for the TAP Update.

### **Appendix A — Adopted Figures**

This appendix contains a series of adopted maps that provide the framework and implementation tools for Charlotte's Transportation Action Plan.

### **Appendix B — Recommended Transportation Program**

This appendix contains supplementary maps and tables that describe the Recommended Expenditure Plan.

### **Appendix C — Supporting Documents**

This appendix contains supplementary text that describes the relationship between the TAP and the other local and regional transportation plans, such as the City's pedestrian and bicycle plans, and the Charlotte Regional Transportation Planning Organization's Metropolitan Transportation Plan.







# CHAPTER 2: EXISTING CONDITIONS & TRENDS

Chapter 2 evaluates the existing conditions and trends for transportation and land use within the City of Charlotte. The chapter is divided into nine sections. Each section describes key transportation-related elements impacting Charlotte's transportation network; assesses how well each element is being implemented; and identifies key issues that will impact future implementation. Ultimately, this chapter provides a comprehensive assessment of whether the City is achieving its mission of becoming the premier city in the nation for integrating land use and transportation choices.

The following transportation-related elements are described in this chapter:

- Centers, Corridors and Wedges Growth Framework
- Street Network Conditions
- Motorists
- Pedestrians
- Bicyclists
- Public Transit
- Transportation Safety
- Street Maintenance
- Transportation Operations



*Cross Charlotte Trail*







# CENTERS, CORRIDORS AND WEDGES GROWTH FRAMEWORK

## BACKGROUND

The Centers, Corridors and Wedges (CCW) Growth Framework provides a vision for how Charlotte should grow and develop to meet the needs of an expanding and changing population. Charlotte developed this transportation and land use foundation in the 1990s with the initial Centers and Corridors growth strategy, which was updated and readopted as the Centers, Corridors and Wedges Growth Framework in 2010.

The CCW Growth Framework recommends a clear development pattern that provides a foundation for Charlotte's economic growth while protecting its quality of life. By intensifying development within existing Activity Centers and key parts of Growth Corridors, the CCW Growth Framework improves access to employment opportunities and housing choices while making the most efficient use of existing infrastructure and transportation resources.

Charlotte is the second fastest growing large city in the country, and is projected to add approximately 400,000 new residents by 2040. The CCW Growth Framework provides direction on how to accommodate this growth by:

- Providing guidance to better match development types and intensities with transportation infrastructure like highways, rapid transit and major arterials;
- Recognizing redevelopment as a key part of accommodating future growth, particularly in Activity Centers and Growth Corridors;
- Supporting a variety of housing choices at appropriate locations;
- Emphasizing quality design and the importance of environmental considerations; and
- Encouraging a variety of transportation choices.

**ACTIVITY CENTERS** are focused areas of economic and/or mixed-use activity located throughout the City. They are often desirable locations for additional growth because of their strategic locations and typically well-developed infrastructure.

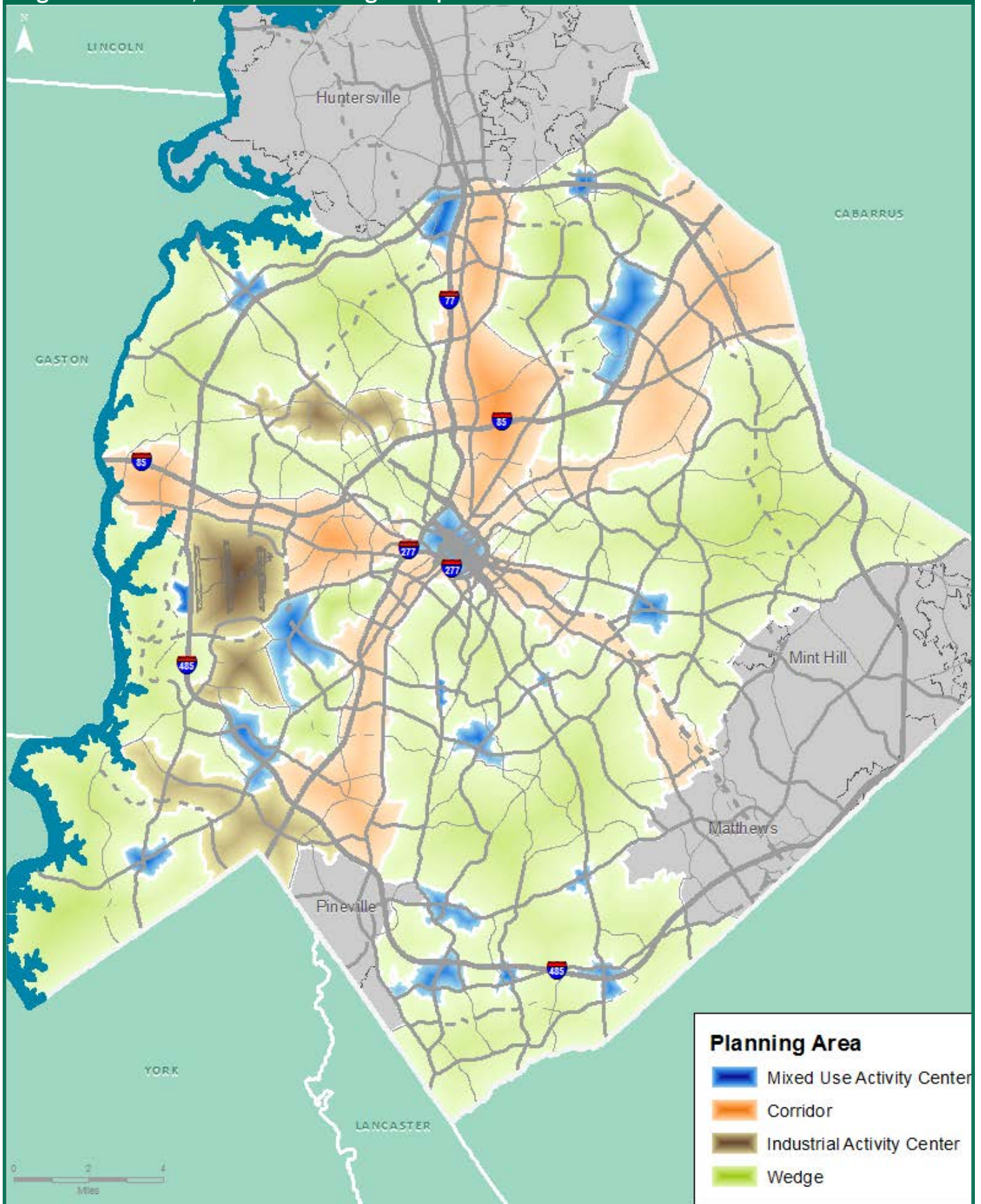
- Center City is Charlotte's largest and most intensely developed Activity Center.
- SouthPark is an example of a Mixed-Use Activity Center.
- Westinghouse Boulevard is an example of an Industrial Activity Center.

**GROWTH CORRIDORS** include at least three high capacity transportation facilities — interstate or expressway, major thoroughfare(s), existing or planned rapid transit and/or a freight rail line — that run parallel to each other. Growth Corridors include a diversity of places from historic neighborhoods to shopping areas to employment districts. Because of their extensive transportation system, some areas within the Growth Corridors can support uses that need high levels of access, such as high density residential and office development, as well as concentrations of industrial, warehousing and distribution uses.

**WEDGES** are the areas between Growth Corridors where residential neighborhoods have developed and continue to grow. Wedges consist mainly of lower intensity development, as well as a mix of low to moderate density housing and supporting facilities and services.



Figure 1. Centers, Corridors &amp; Wedges Map





## IMPLEMENTATION

Implementation of the CCW Growth Framework is the responsibility of many different agencies and stakeholders. It relies on land development decisions adhering to the vision as the City grows, as well as investments in transportation and transit that reinforce the Activity Centers and Growth Corridors.

To ensure that the City is implementing the Centers, Corridors and Wedges Growth Framework, the City monitors building permit data to confirm that we are meeting land use goals. TAP Policies 1.1.2 and 1.1.3 specifically call out the amount of development that should occur within Activity Centers and Growth Corridors.

Since the last TAP Update in 2011, Charlotte's development pattern has generally followed the vision of the Centers, Corridors and Wedges Growth Framework.

### 1.1.2

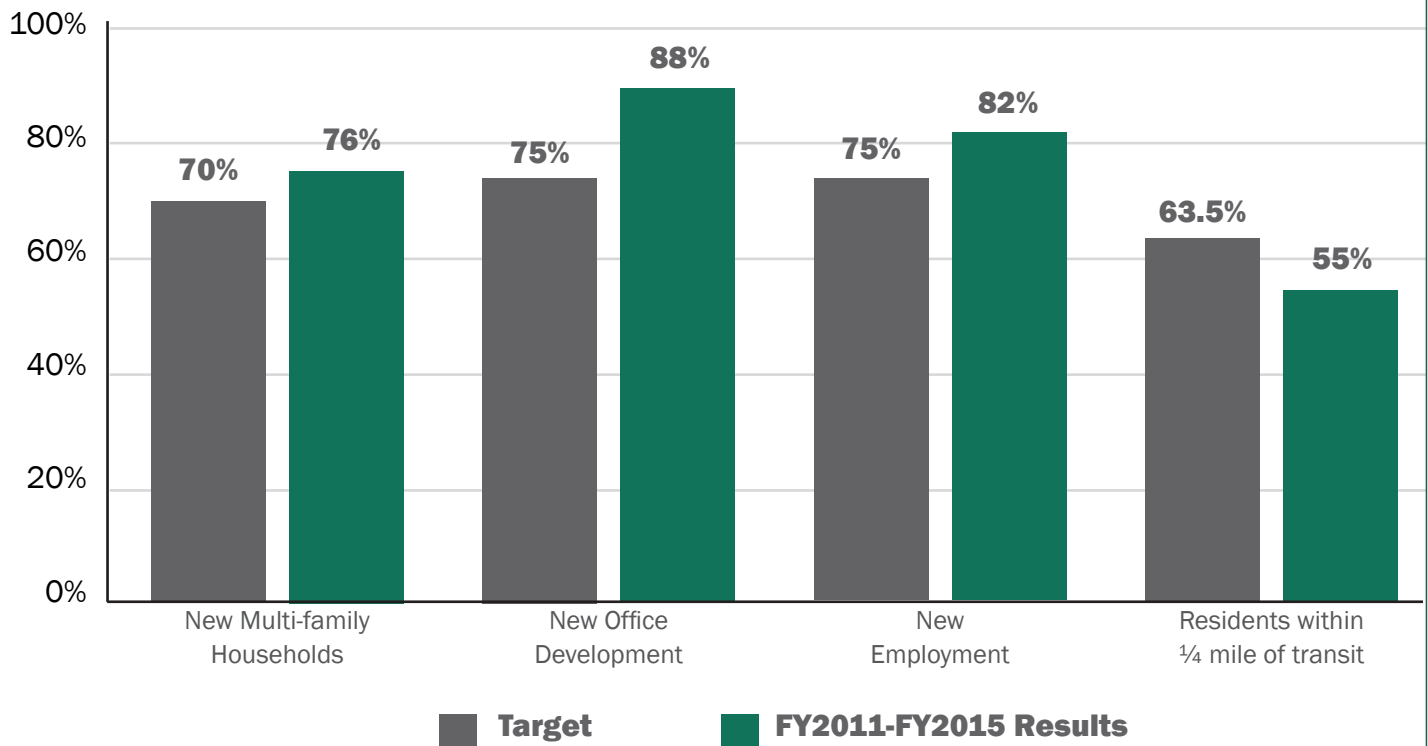
The City will encourage a minimum of 70% of new multi-family units, 75% of new office development and 75% of new total employment to be in Activity Centers and Growth Corridors, consistent with adopted area plans.

### 1.1.3

The City will encourage a minimum of 63.5% of Charlotte residents to reside within ¼ mile of transit service.

## *THE BEST TRANSPORTATION PLAN IS A GOOD LAND USE PLAN.*

**FIGURE 2. CENTERS AND CORRIDORS GROWTH TARGETS**





Since the adoption of the previous TAP Update in 2011 the following progress has been made towards implementing the CCW:

### ***Development of the Five-Corridor Transit System***

- In the South Corridor, the LYNX Blue Line continues to operate and stimulate development. The LYNX Blue Line serves over 15,000 riders per day. Development within the South Corridor attributable to the rail line to date totals over \$1.45 billion, and an estimated 4,400 units of higher-density housing have been built in the South End area.
- In the Northeast Corridor, the LYNX Blue Line Extension is currently under construction, with a projected opening date in 2017. This line will provide light rail service from Uptown to the University of North Carolina at Charlotte.
- In the North Corridor, the Charlotte Area Transit System continues to plan for a commuter rail service from Uptown Charlotte to Mooresville. A Red Line Task Force is working to develop an implementation strategy that will be acceptable to Norfolk-Southern, the owner of the existing alignment.
- In the Southeast Corridor, CATS undertook a study to develop both an interim bus transit strategy as well as a preferred rail alignment for the Silver Line.
- In the West Corridor, CATS continues operation of the Sprinter enhanced bus service, connecting Uptown to Charlotte-Douglas International Airport. With the continued development of the airport and the emerging River District development, additional transit service may be needed.

### ***Complementary Land Use and Transportation Planning Efforts***

City Council has adopted several area plans over the past five-years that support complementary land use and transportation planning strategies including:

- The Blue Line Extension Station Area Plans (2013) and University City Station Area Plan (2015), which will help guide development within the Northeast Corridor.
- The Prosperity Hucks Area Plan (2015), which will help guide development within the emerging Prosperity Hucks activity center and surrounding wedge residential areas.
- The Park/Woodlawn Area Plan (2013), Steele Creek Area Plan (2012), and Midtown/Morehead/Cherry Area Plan (2012), which provide guidance to the desired type, scale and intensity of development, while also identifying transportation needs, consistent with the Centers, Corridors and Wedges Growth Framework.

CDOT is currently working closely with Charlotte's Planning Department to develop Charlotte Place Type Policies. The future adoption of Place Type Policies will heighten the integration of land use and transportation throughout the City, and strengthen the linkage to Charlotte's development ordinances.

### ***The Northeast Corridor Infrastructure Program (NECI)***

The NECI Program is a collection of projects selected to improve multimodal access to stations along the Blue Line Extension. This investment will help implement station area plan recommendations along the Blue Line Extension and support more intensive development. The NECI Program received a total of \$52 million through the 2014 and 2016 bond packages, which helped advance numerous projects into design and construction.





## FUTURE OPPORTUNITIES & CHALLENGES

Implementation of the Centers, Corridors and Wedges Growth Framework depends on the coordinated efforts of land use planning, development and transportation investments. Looking forward over the next five years, some key issues that will impact the success of the Centers, Corridors and Wedges vision include:

### ***The Creation of Charlotte's Place Types and Unified Development Ordinance***

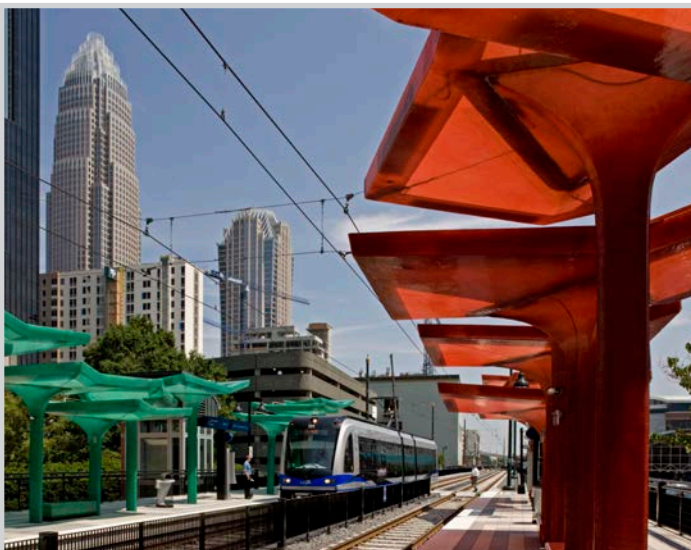
The City is developing Place Type Policies that will serve as a link between the community's expectations for the character of physical development and the upcoming Unified Development Ordinance (UDO). The UDO will replace the City's existing zoning, subdivision and other related development ordinances, and will better unify adopted land use and transportation policies with the actual development ordinance. The end result should be a strengthened connection between the vision of the CCW Growth Framework and actual implementation through development.

### ***CDOT Funding***

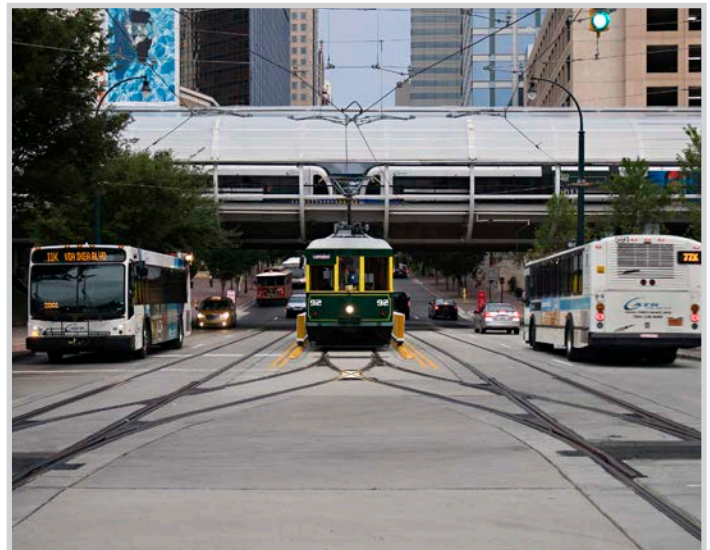
The City's adopted 2014-2020 Community Investment Plan provides over \$450 million in funding for transportation projects. Much of this funding is committed to specific projects and geographies such as the Northeast Corridor Infrastructure Program and the six Comprehensive Neighborhood Improvement Program areas. While this funding will advance some projects, outlined in the 2011 TAP Update, additional funding is needed to further support the vision of the Centers, Corridors and Wedges Growth Framework and accommodate Charlotte's rapid growth.

### ***CATS Funding***

The ability of CATS to implement the 2030 Corridor System Plan has been impacted by slow growth in sales tax revenue and lesser availability of Federal and State transit funding. A series of projects were included in the 2012-2018 Transportation Improvement Plan (TIP) to carry out the Charlotte Area Transit System's 2025 Integrated Transit/Land Use Plan and Corridor System Plan. Transit projects funded within the TIP include facility improvements, installation of intelligent transportation systems, fare system and radio upgrades, neighborhood transit centers, park and ride lots, and the Charlotte Gateway Station. To continue to fund the projects discussed above and implement the 2030 Corridor System Plan, CATS will need to secure additional revenue sources.



LYNX Blue Line travelling through Uptown  
Source: ©JoAnn Sieburg-Baker 2008



CATS operates bus and rail service around the Charlotte metropolitan area







## STREET NETWORK CONDITIONS

### BACKGROUND

A city's streets — including its sidewalks, planting strips, trees, bicycle lanes and travel lanes — are among its most significant public places, and a key component for moving people and goods. Streets connect people to every destination within a city, provide access to public transit, encourage and serve economic development and are the corridors for moving thousands of persons and motor vehicles every day. Streets are where neighbors cross paths and share news; where friends gather at a neighborhood restaurant for a local meal; where residents walk to the corner market and their favorite local park; and where parents teach their children the joy of riding a bicycle. Great streets can define a great city and its neighborhoods.

### The Comprehensive Transportation Plan

Between 2012 and 2016, CDOT staff conducted an assessment of street network conditions within Charlotte to prepare for the development of the Comprehensive Transportation Plan (CTP). The CTP consists of four maps illustrating staff's assessment of travel networks for motorists, bicyclists, pedestrians, transit riders, and freight. Charlotte Regional Transportation Planning Organization (CRTPO) staff worked with representatives from NCDOT and local jurisdictions, including Charlotte, to prepare the CTP and ensure that it reflects adopted plans and policies.

This recent assessment of street network conditions provides a measure of the completeness of the arterial street network for pedestrians, bicyclists and motorists. The CTP does not include an assessment of local streets.

### WHO IS RESPONSIBLE FOR MAINTAINING CHARLOTTE'S STREET NETWORK?

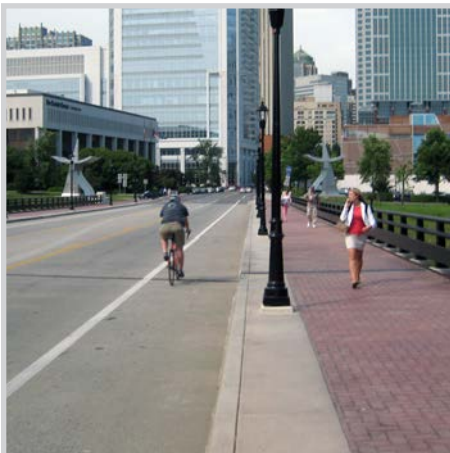
Responsibility is shared between the Charlotte Department of Transportation (CDOT) and the North Carolina Department of Transportation. (NCDOT).

**604** MILES OF  
STREETS  
MAINTAINED BY NCDOT

**2,455** MILES OF  
STREETS  
MAINTAINED BY THE CITY

**1,890** MILES OF  
SIDEWALKS  
MAINTAINED BY THE CITY

**190** MILES OF  
BIKE FACILITIES  
MAINTAINED BY THE CITY



**What's your favorite street?** We asked attendees at CDOT's Transportation Fair what their favorite street in Charlotte is. Some of the top picks included South Tryon Street, East Boulevard and Queens Road West.



The CTP classifies street segments into one of three categories for each mode:

### Existing

The existing facility is not expected to change. The facility is considered adequate based on a variety of factors such as appropriate design, expected future traffic volumes, consistency with adopted plans, or livability objectives. The facility may also be considered adequate based on its context within the larger transportation network or because it is unbuildable due to physical constraints.

### Needs Improvement

The existing facility or service is (or is expected to be) inadequate and should be changed to accommodate expected traffic volumes, improve inadequate design or identified safety issues, reflect pedestrian and bicycle facilities shown in adopted plans, improve poorly designed facilities, or fill in connectivity gaps.

### Recommended

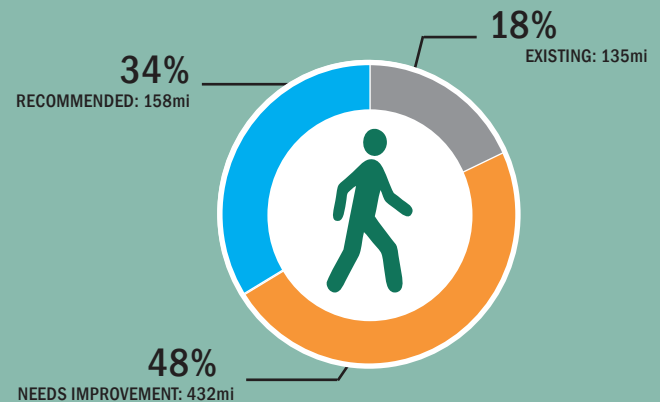
There are no existing facilities or services and a new facility or service is needed.



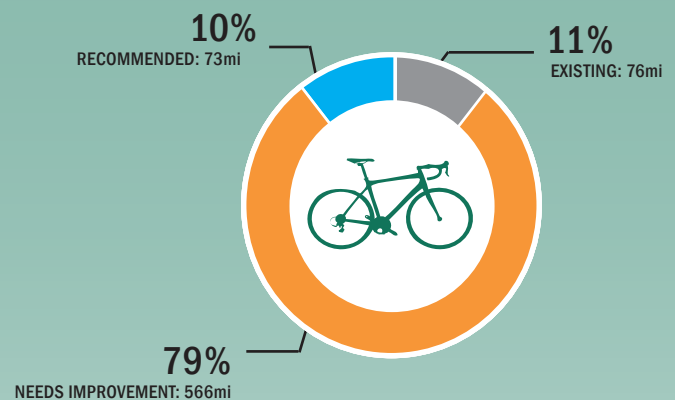
Charlottetowne Avenue is an example of a minor thoroughfare classified as CTP 'Existing'.

## CTP NETWORK ASSESSMENT

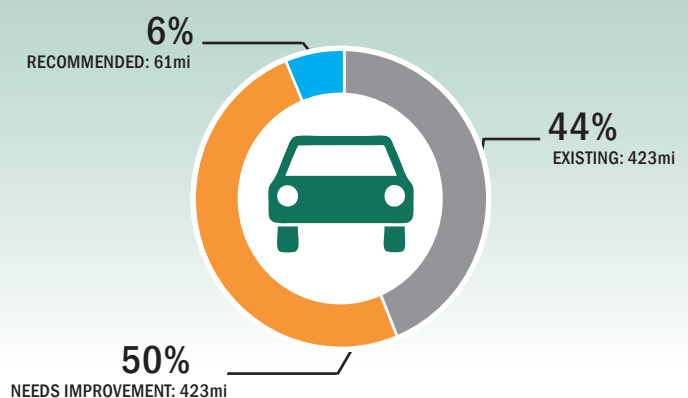
### SIDEWALK NETWORK



### BICYCLE NETWORK



### MAJOR STREET NETWORK





## IMPLEMENTATION

Implementing Charlotte's street network is the responsibility of many different public agencies including the Charlotte DOT, the North Carolina DOT, and the Charlotte Regional Planning Transportation Organization, as well as the private sector through land development. Since the adoption of the previous TAP Update in 2011, the following progress has been made towards the implementation of Charlotte's street network.

### **Approval and Implementation of the 2014-2020 Community Investment Plan**

In 2013, City Council approved the 2014-2020 Community Investment Plan, which allocates approximately \$450 million in transportation funding for streets, sidewalks and bicycle facilities. The City has begun planning and design work for projects and areas identified in the new Community Investment Plan.

### **The State of North Carolina's New Strategic Transportation Law**

Projects in Charlotte competed well under the North Carolina's new Strategic Transportation Investments law and associated funding allocation, based on the 2016-2025 State Transportation Improvement Program (STIP). Several major projects, such as the widening of I-77 south, US-74, I-485, and Independence Boulevard, were nominated for funding in a much earlier time frame than originally anticipated.

### **Construction of City Capital Projects**

With funding from previous capital programs, the City continued to design and construct transportation projects. Over the past five years, the City built 84 miles of new sidewalks; 48 miles of new bicycle facilities; approximately 20 miles of new, widened, or improved streets; and more than 40 intersection improvements.

The Comprehensive Transportation Plan and ongoing capital program implementation offer the best measure of Charlotte's progress towards building a street network that can accommodate 1.2 million residents by 2040. Since the Transportation Action Plan was first adopted in 2006, the City has invested over \$530 million in transportation projects.



*Rozzelles Ferry Road is an example of a roadway that is designed for all users.*

**86%**  
OF CHARLOTTEANS THINK  
STREETS SHOULD BE  
**DESIGNED FOR  
ALL USERS**

—2016 Charlotte Transportation Survey



## FUTURE OPPORTUNITIES & CHALLENGES

Investment in Charlotte's street network is essential to accommodating 400,000 new residents' travel behavior over the next 25 years. Looking forward over the next five years, some key issues that will impact the development of Charlotte's street network include:

### ***The Creation of Charlotte's Place Types Unified Development Ordinance***

The City is developing a Unified Development Ordinance (UDO) that will ultimately replace existing development ordinances and provide a key piece for helping to implement the City's land use and transportation policies. Several efforts are underway that will support the development of the UDO. The City is currently developing Place Type and Transportation Policies that will collectively define and map the types of "places" that will exist in Charlotte, along with the needed transportation infrastructure and capacity to support those places and overall citywide mobility.

These efforts, taken together, will provide the information necessary to strengthen the ties between the City's land use and transportation visions and, ultimately, help implement the TAP through both public and private investments. The UDO will be the most significant overhaul of Charlotte's development regulations in decades.

### ***Local Funding for Transportation Improvements***

The City's adopted 2014-2020 Community Investment Plan provides funding for transportation projects, but not at the level needed to accommodate Charlotte's significant population growth and ongoing transportation needs. Furthermore, additional funding beyond 2020 has not been identified. A dedicated funding source for ongoing transportation investments would provide the predictable revenue needed to continue improving the street network in Charlotte. This update assumes that the Community Investment Plan will continue to provide funding for transportation projects in the future.

### ***State Funding for Transportation Improvements***

North Carolina's new Strategic Transportation Investments law and associated funding allocation has provided funding for several significant freeway projects in the Charlotte region. However, this new funding allocation process results in less funding being available for road projects of smaller-scale, and eliminates funding for stand-alone bicycle and pedestrian projects. Charlotte will have to continue to invest in multimodal projects on the State-maintained system in order to keep pace with our population growth and transportation needs.

### ***Implementation of Recommendations in CLT WALKS and CLT BIKES***

The City's mode-specific plans, CLT WALKS and CLT BIKES, identify specific strategies the City should further embrace to improve the pedestrian and bicycle networks. Ongoing support and successful implementation of these plans will ensure that steady progress is made on both the pedestrian and bicycle networks.











# MOTORISTS

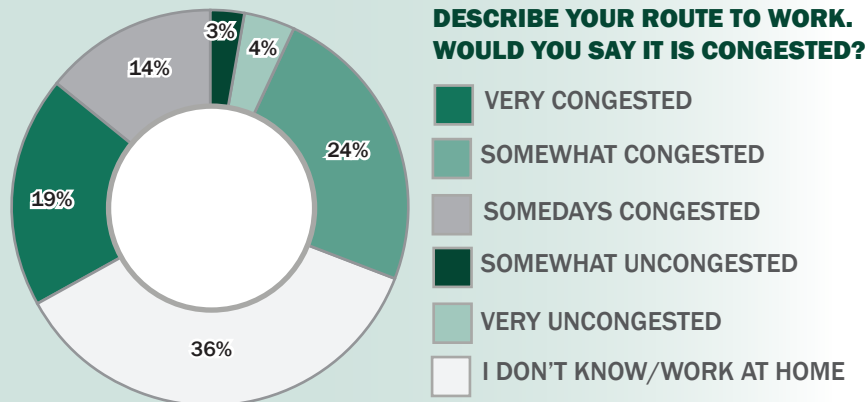
## BACKGROUND

Charlotte is a City that grew up in the automobile era, increasing in population by approximately 500 percent since 1950. The City, together with the State of North Carolina, rose to the challenge of accommodating increasing numbers of motor vehicles by embarking on a program of connecting and widening roads, as well as building interstates, to create the street network we use today.

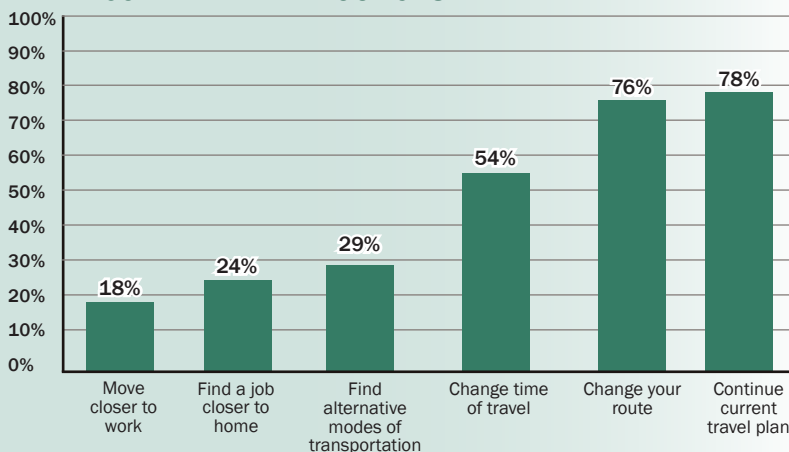
The combination of road widening projects and intersection improvements worked for several decades. However, this approach is no longer our only solution. A significant number of Charlotte's thoroughfares and intersections have been maximized for vehicle capacity, and many can no longer be improved without extraordinary expense and sometimes significant impacts on adjacent land uses.

Many of Charlotte residents and employees rely on vehicles as their primary mode of transportation – today more than 93 percent of commute trips by Charlotte residents are made by personal vehicle. While most growing cities experience some congestion, providing an adequate level of mobility is critical to maintaining the economic viability and quality of life within Charlotte. Development within the City and region will continue to play a major role in the growing demands on Charlotte's transportation network.

## ACCORDING TO THE 2016 TRANSPORTATION SURVEY



### WHAT WOULD YOU DO IF YOUR ROUTE TO WORK WERE TO BECOME EXTREMELY CONGESTED?



**43% OF CHARLOTTEANS  
THINK IT IS DIFFICULT  
TO DRIVE IN CHARLOTTE**

- 2016 TRANSPORTATION SURVEY



Afternoon congestion on Interstate 85



## LEVEL OF SERVICE

Charlotte's regional travel model uses current travel patterns and transportation characteristics, combined with future projections of population growth, employment, and known transportation investments to project level-of-service (LOS) for motorists on Charlotte's roads. Chapter 16 of the Highway Capacity Manual (HCM) defines LOS for motorist on a scale of A (free-flowing conditions) to F (over capacity, with delays). A level of service of "E" or "F" for instance would be considered very congested.

Based on forecasted growth in population and employment between now and 2040, a significant number of roadway segments will become more congested in the future. In total, the number of daily person trips made within the City of Charlotte are projected to increase from approximately 3 million trips today to 4.5 million by 2040. The TAP anticipates that travel demand will continue to increase in the future. The TAP recommends investing in multimodal transportation infrastructure to accommodate this growth and provide transportation choices for all users.

## EMPLOYMENT ACCESSIBILITY

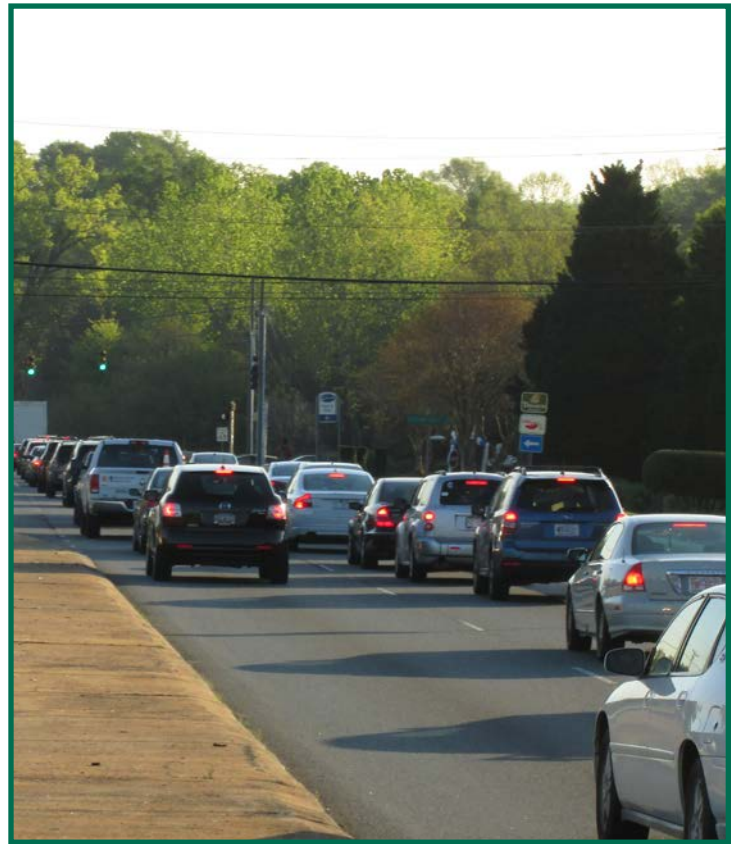
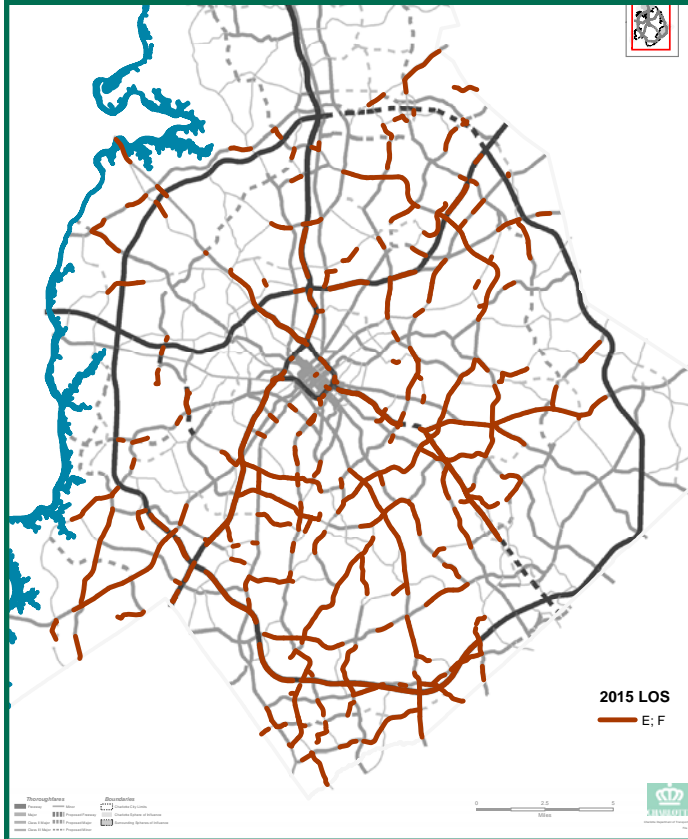
Today, an estimated 636,000 people work in Mecklenburg County, and approximately half of these workers commute into Mecklenburg from another county (see Figure 4). By 2040, an estimated 1,240,000 people will work in Mecklenburg County. Approximately 30 percent of workers in Mecklenburg County will commute into work from outside the County in 2040. Although, congestion is forecasted to increase between 2015 and 2040, the number of jobs accessible within 45 minutes or less will also increase. In other words, despite increasing traffic, commuters will be able to get to more jobs within 45 minutes or less than today.



Interstate 77



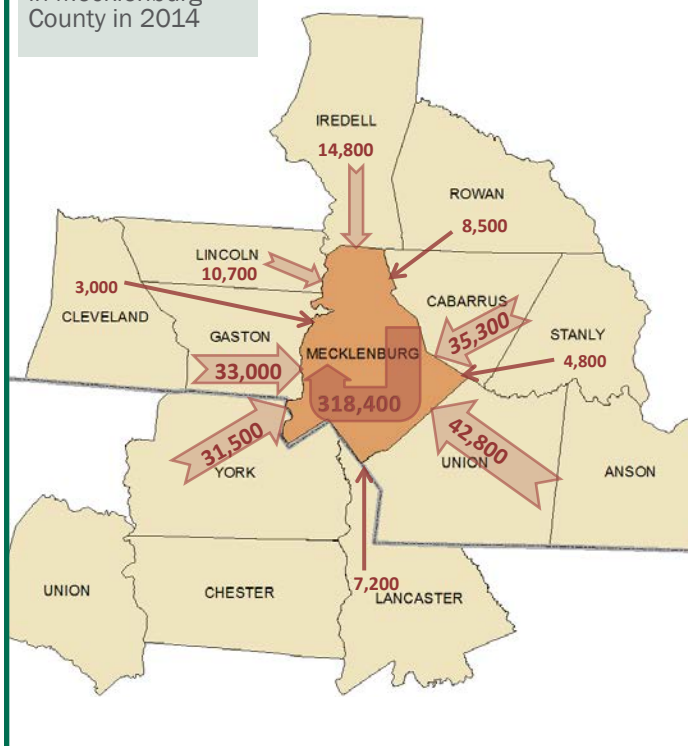
Figure 3. Level of Service - 2015



Traffic on South Tryon Street

Figure 4. Commuting in Mecklenburg County - 2015

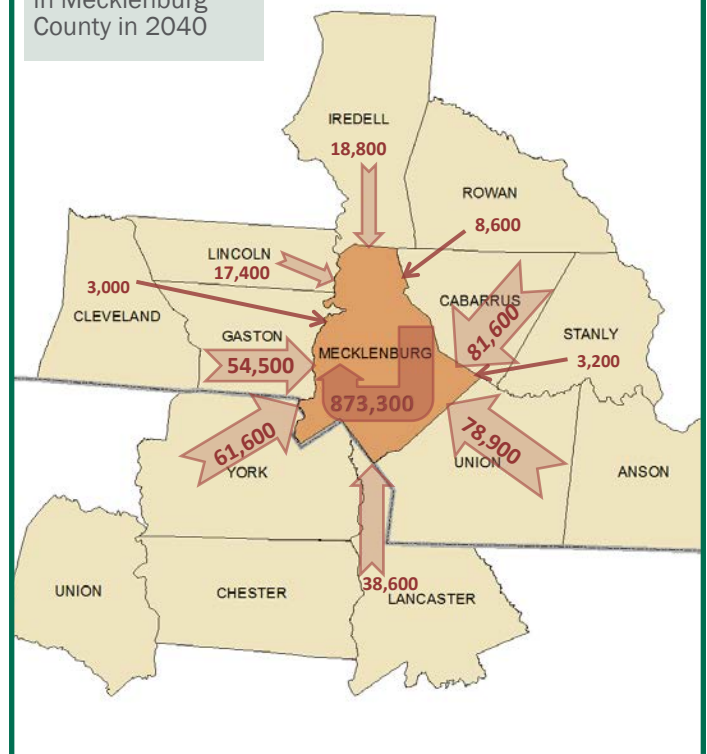
636,000 - Jobs  
in Mecklenburg  
County in 2014



Source: US Census, American Community Survey 2015

Figure 5. Commuting in Mecklenburg County - 2040

1,240,000 - Jobs  
in Mecklenburg  
County in 2040



Source: Metrolina Regional Model\_MRM15v1.0



## IMPLEMENTATION

Improving road conditions for motorists has been an ongoing endeavor for Charlotte, particularly since the steep rise in automobile ownership beginning in the 1950s. Since the adoption of the previous TAP Update in 2011, the following progress has been made towards continuing to move motorists through Charlotte:

### ***Implementation of Transportation Projects***

The City has implemented many transportation projects over the years for thoroughfare widenings, intersection enhancements, signalization, and connectivity projects funded by the 2006, 2008, and 2010 Transportation Bond measures.

### ***The Opening of the Final Segment of I-485***

NCDOT opened the final segment of I-485 through northeast Charlotte in 2015. This included substantial coordination with the City of Charlotte, including the design of a split-diamond interchange in Prosperity Village.

### ***I-485/Johnson Road/Community House Road Projects***

A partnership between the City of Charlotte, the North Carolina Department of Transportation, and the Bissell Corporation saw the re-design of the Johnston Road/I-485 interchange, construction of the North Community House Road bridge over I-485, and additional lane on I-485 between Johnston Road and I-77. These projects provided significant capacity improvements within the Ballantyne area.



I-485 Roadway Projects



## FUTURE OPPORTUNITIES & CHALLENGES

Achieving mobility for motorists requires substantial work and coordination between the City of Charlotte, the Charlotte Regional Transportation Planning Organization, and the North Carolina Department of Transportation. Looking forward over the next five years, some key issues that will impact the mobility of motorists include:

### **Local Funding for Transportation Improvements**

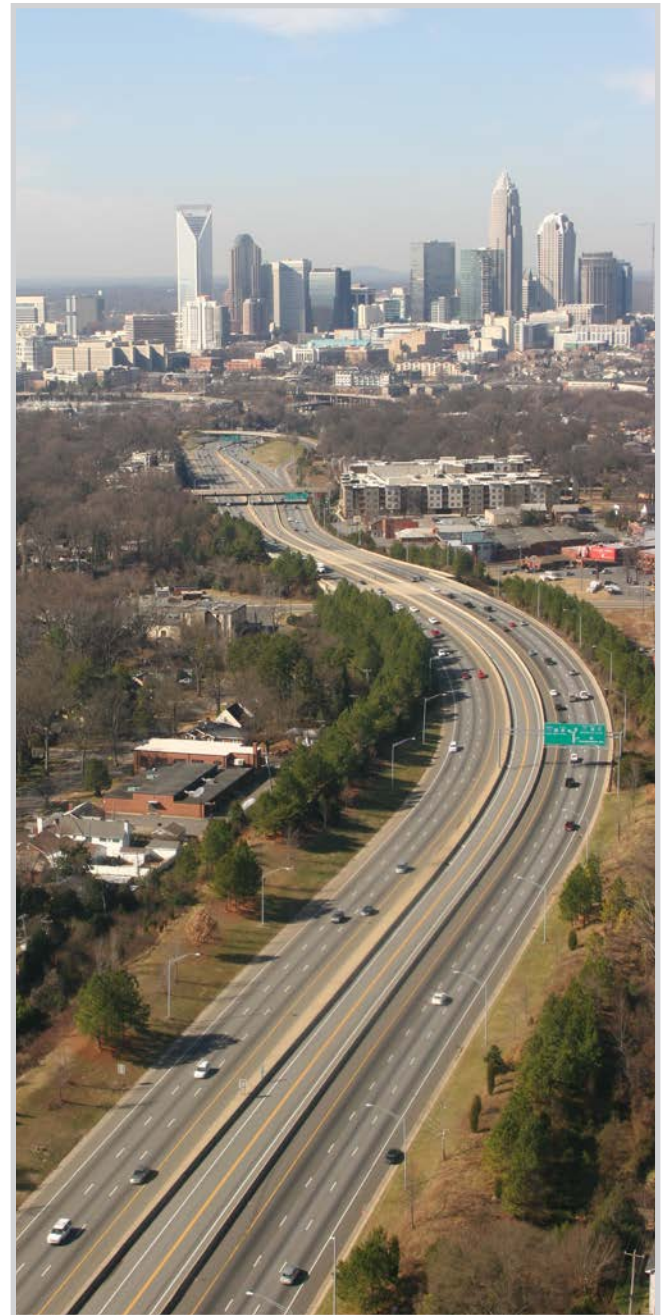
The City's adopted 2014-2020 Community Investment Plan (CIP) provides funding for transportation projects, but not at the level needed to accommodate Charlotte's significant population growth and ongoing transportation needs. Furthermore, additional funding beyond 2020 has not been identified. A dedicated funding source for ongoing transportation investments will need to be found to provide the predictable revenue needed to continue improving the street network in Charlotte. This update assumes that the CIP will continue to provide funding for transportation projects.

### **State Funding for Transportation Improvements**

North Carolina's new Strategic Transportation Investments law and associated funding allocation has provided funding for several significant freeway projects in the Charlotte region. However, this new funding allocation process results in less funding being available for road projects of smaller-scale and eliminates funding for stand-alone bicycle and pedestrian projects. Charlotte will have to continue to invest in projects on the State-maintained system if we are to keep pace with our population growth and growing transportation demands.

### **Successful Implementation of the Centers, Corridors and Wedges Growth Framework**

Charlotte's transportation system is greatly impacted by the trips generated from the land uses within and around Charlotte. The CCW Growth Framework emphasizes the importance of locating new housing and employment in activity centers and some parts of growth corridors, where improvements to the street system can best support the additional demands from new development, reduce trip distances and provide more transportation choices.



*East Independence Boulevard*



**By 2040**  
the number of people  
working in Mecklenburg County  
**will double,**  
growing to approximately  
**1.2 million people**









# PEDESTRIANS

## BACKGROUND

Communities across the nation, like Charlotte, are working to develop in a walkable manner and provide appropriate pedestrian facilities. This is important because every trip begins and ends as a pedestrian trip. Like many of the sunbelt cities, the City of Charlotte inadequately addressed pedestrian travel from the late 1950s through the 1980s. Most of the land development projects constructed during this period provided no sidewalks and few interconnecting streets. Sidewalks that were built during this time were often located right at the back of the curb, creating unpleasant walking conditions for pedestrians. This resulted in hundreds of miles of suburban and semi-rural roads with no sidewalks or poorly designed sidewalks with narrow, uncomfortable and dangerous conditions, resulting in little opportunity to travel as a pedestrian.

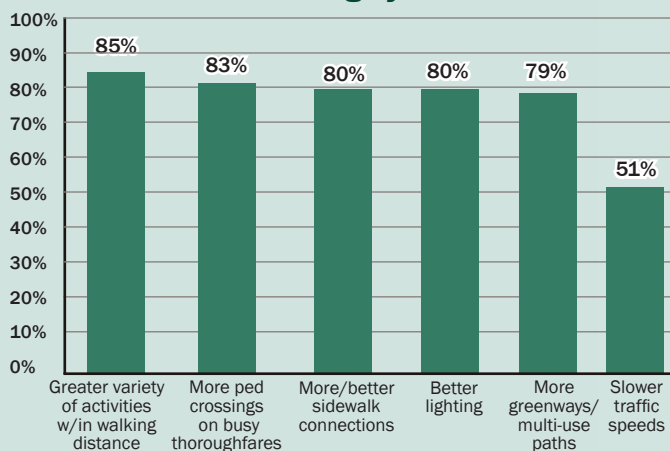
The City has made great strides in creating a more walkable Charlotte since the 1990s. For example, starting in 1998 the City required that new sidewalks be constructed on both sides of the street as development occurs. The City also implemented a capital investment program for sidewalk construction. The City continues to work towards creating a more walkable community by ensuring that new roadway construction projects either provide sidewalks or preserve right-of-way for future sidewalks, so as not to create gaps within the pedestrian network. With the adoption of the Urban Street Design Guidelines, the City has stated a preference for sidewalks of adequate width, buffered from the road by wider planting strips and street trees. These positive changes are intended to accommodate diverse user groups, including children, the disabled and the elderly.

The City has an estimated 1,890 miles of completed sidewalks in place today.

- Approximately 66% of thoroughfares have sidewalks on both sides of the street.
- Approximately 44% of local streets have sidewalks on at least one side of the street.
- Staff has identified 367 miles of new sidewalk (both sides) that should be built along Charlotte's thoroughfares.
- Staff has identified 1,523 miles of new sidewalk (one side only) that should be built on Charlotte's local and collector streets.

## ACCORDING TO THE 2016 TRANSPORTATION SURVEY

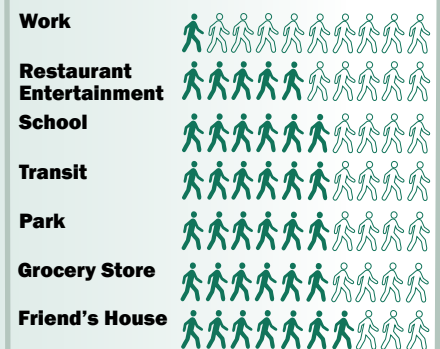
### What would encourage you to WALK MORE?



50 %

50 % of respondents think it is difficult to walk in Charlotte

### Can you walk to the following within 10 MINUTES of your home?





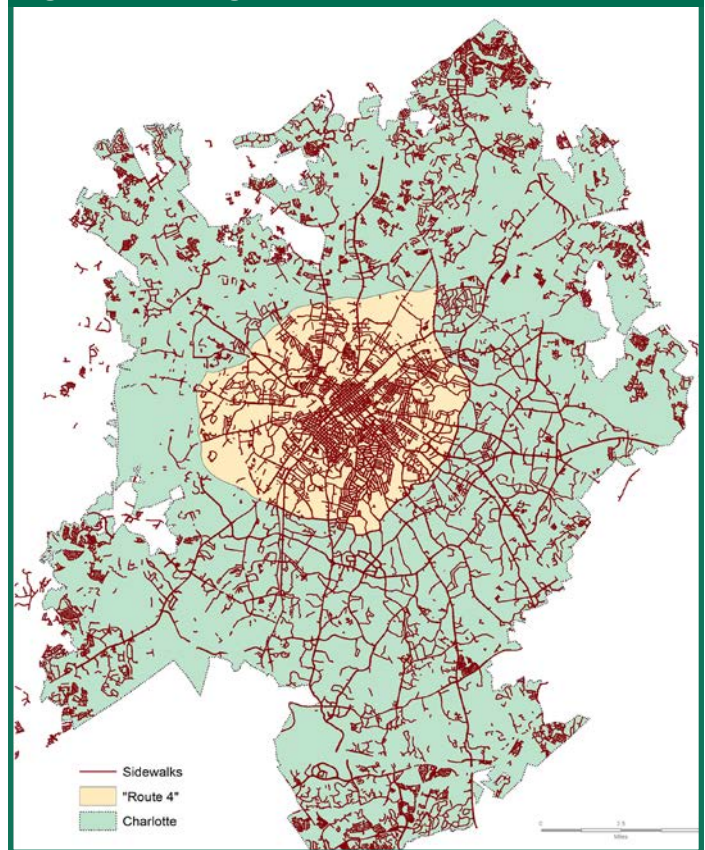
## IMPLEMENTATION

Making Charlotte a more walkable city is the responsibility of many different agencies and stakeholders. It relies on private land development and urban design to create inviting, walkable destinations, as well as a useful pedestrian network that is comfortable to walk along and safely cross. Since the adoption of the previous TAP Update in 2011, the following progress has been made towards making Charlotte a more pedestrian-friendly community:

### **Pedestrian Program Implementation**

- The City's Pedestrian Program has built over 26 miles of new sidewalks since 2011. City roadway projects and private land development projects have built many more miles of sidewalk on top of that.
- The City has focused on constructing new pedestrian crossings to improve network connectivity. In the two-year period from July 2014 to June 2016, the City of Charlotte installed 55 new pedestrian crossings and improved 72 existing pedestrian crossings. These investments, in over 60 unique locations throughout the City, occurred through a variety of City stormwater, roadway, and pedestrian safety projects.
- The City's Pedestrian Program has led an effort to embrace placemaking and community building in the public right-of-way through activities like parklets, street murals, and the new Open Streets 704 program.
- In the summer of 2016, Charlotte was redesignated as a Walk Friendly Community at the Bronze Level.

**Figure 6. Existing Sidewalk Network**



Source: Charlotte Walks, 2016

**APPROXIMATELY  
66 PERCENT**  
of Charlotte's pedestrian  
network **is complete**  
along thoroughfares

### **Estimated Sidewalk Network**

Street Type	"Target"	Existing Sidewalk	Sidewalk Gap	Percent Complete
Thoroughfares	1,080 miles (both sides)	713 miles	367 miles	66%
Non-Thoroughfares	2,703 miles (one side)	1,180 miles	1,523 miles	44%
Total	3,783 miles	1,893 miles	1,890 miles	50%

Source: Charlotte Walks, 2016



## FUTURE OPPORTUNITIES & CHALLENGES

Looking forward over the next five years, some key issues that will impact the pedestrian-friendliness of Charlotte include:

### **Charlotte WALKS**

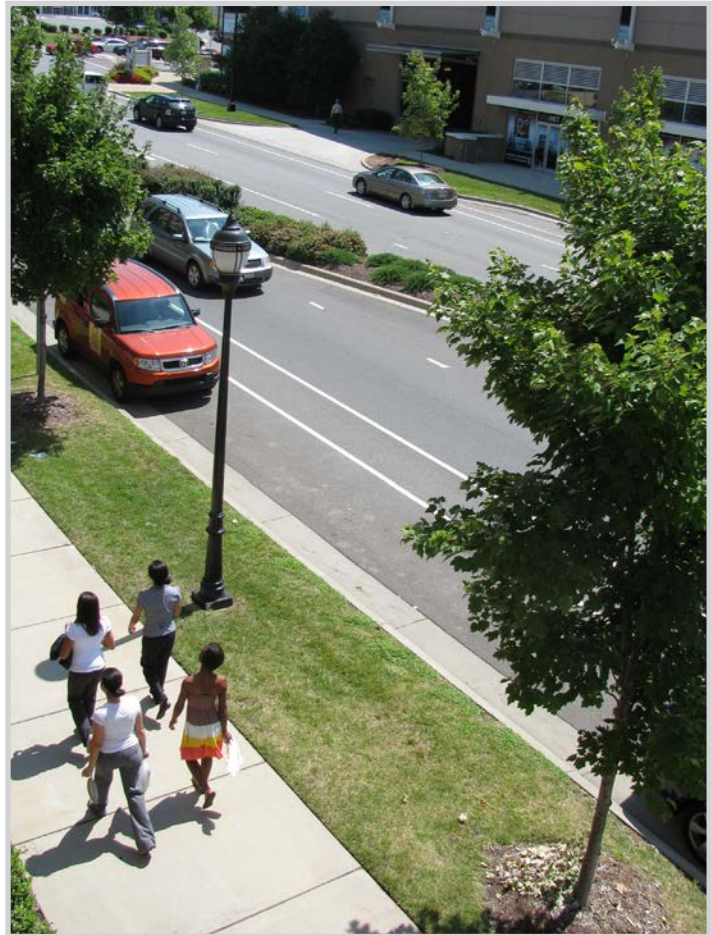
Charlotte WALKS is Charlotte's first Pedestrian Plan. It brings together a number of existing walkability initiatives and identifies new strategies for meeting pedestrian safety and walkability goals, objectives and policies described in the TAP. The Charlotte WALKS Pedestrian Plan is the guiding document for the City's ongoing efforts related to walkability. It describes Charlotte's vision to be a city of streets and neighborhoods where people love to walk. City staff engaged over 800 Charlotteans in the creation of the plan which offers action items related to three key characteristics of walkability – a SAFE walk, a USEFUL walk, and an INVITING walk. Similar to the TAP and Charlotte BIKES, the Charlotte WALKS Pedestrian Plan outlines a work plan that will be updated every five years.

### **Creation of Charlotte's Place Types and Unified Development Ordinance**

The City is developing Place Type Policies that will serve as a link between the community's expectations for the character of physical development and the upcoming Unified Development Ordinance (UDO). The UDO will replace the City's existing subdivision and zoning ordinances, and will better unify adopted land use and transportation policies with the requirements of the development ordinances. The UDO will also include specific expectations for walkability, and define the role of appropriate building and streetscape design, to support better pedestrian experiences. The end result will be a strengthened connection between the vision for walkable neighborhoods described in the CCW Growth Framework and the implementation of walkability goals through public and private development.



*Pedestrians walking on the Cross Charlotte Trail*



*Pedestrians walking along Charlottetown Avenue*







# BICYCLISTS

## BACKGROUND

Charlotte, like many fast growing Sunbelt cities post-World War II, spent several decades creating a disconnected street network and implementing roadway improvements that did not consider or accommodate bicycle travel. Hundreds of miles of new and widened streets were built with little to no thought being given to how street design would impact bicycle travel. The lack of bicycle accommodations on roadways was also compounded by reduced levels of connectivity as many communities forgot the benefits of a connected street network for all transportation users.

Charlotte, like many cities, is now committed to undoing these mistakes, and is working towards becoming a bicycle-friendly community. This change will not take place overnight but through a long-term commitment — as reflected in the adoption of the original TAP and Urban Street Design Guidelines, which sets the standard that bicycle facilities will be included on street projects, unless a justification can be made for their exclusion.

The adoption of the Charlotte Bicycle Plan in 2008, as well as the funding of numerous bicycle-related projects in the Community Investment Plan, ensures the City's continued progress towards creating a complete bicycle network. Charlotte is becoming a more bicycle-friendly community everyday as bike lanes and protected bike lanes are added where roads are widened or built; projects are constructed through the implementation of bicycle and greenway plans; and as greenfield areas develop in a more connected fashion.

Through the City's 2016 phone survey on transportation, the City learned that, while most residents do not find it easy to travel by bicycle in Charlotte, a majority of residents would like to bike more.



Cyclists enjoying Charlotte's 'Open Streets 704' event

### ACCORDING TO THE 2014 TRANSPORTATION SURVEY

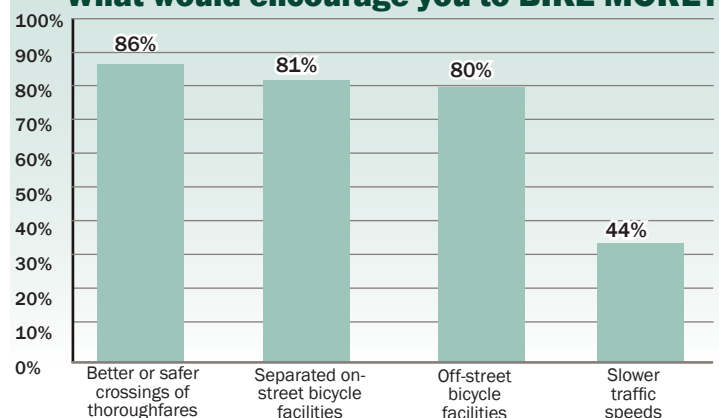
62 %

62 % of respondents think it is difficult to bike in Charlotte

#### Can you bike to the following within 10 MINUTES of your home?

Work	10 icons
Restaurant	10 icons
Entertainment	10 icons
School	10 icons
Transit	10 icons
Friend's House	10 icons
Park	10 icons
Grocery Store	10 icons

#### What would encourage you to BIKE MORE?





## IMPLEMENTATION

Since the adoption of the previous TAP Update in 2011, the following progress has been made towards making a more bicycle-friendly community:

### Growth in the Bicycle Network

Since 2011, Charlotte has added 18.5 miles of bike lanes, bringing the total bike network mileage to 190 miles including 91 miles of bike lanes and paved shoulders, 55 miles of signed routes and 44 miles of greenways and off-street paths.

### Cross Charlotte Trail

The City's adopted 2014-2020 Community Investment Plan provides \$38 million in funding for the Cross Charlotte Trail. This funding will help create a 26-mile trail and greenway facility that will stretch from the City of Pineville, through Center City and on to the UNC Charlotte campus and Cabarrus County line. Once completed, residents will be able to travel seamlessly from one end of Charlotte to the other. Approximately 98,000 jobs and 80,000 residents will be within a half mile of the proposed trail, which will connect to many major employment centers and treasured places within Charlotte.

### Bike-on-Bus Boardings

Every CATS bus has a bicycle rack which permits transit users to board with a bicycle. The use of the bus mounted bicycle racks has steadily increased, with over three times as many bicycle boardings in 2014 than in 2002.

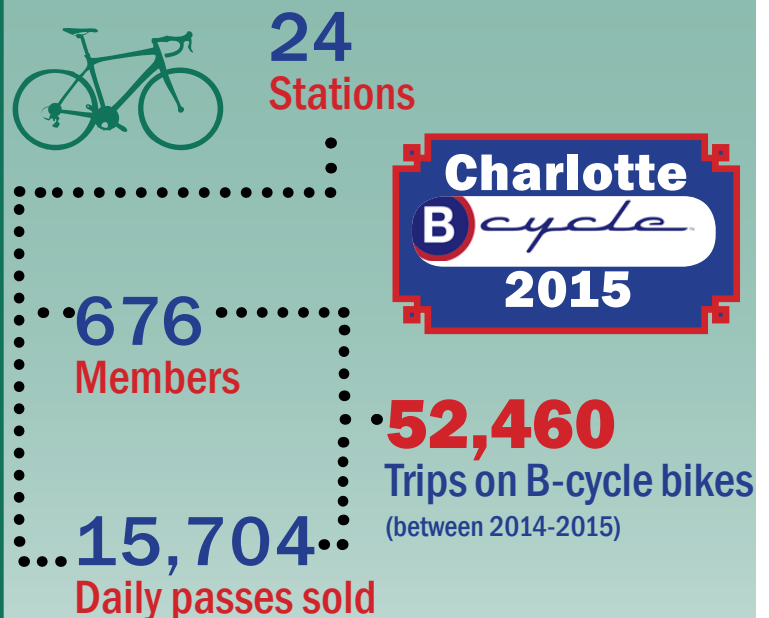
### Bicycle Friendly Community

In recognition of Charlotte's ongoing work on bicycle facilities, the City was re-designated as a bronze-level bicycle friendly community by the League of American Bicyclists in 2012.

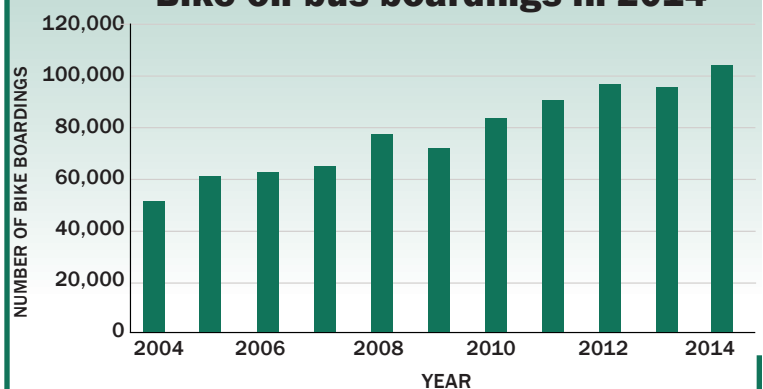
## TRAVELING & CONNECTING BY BIKE IN CHARLOTTE

*Charlotte's growing bicycle network makes it easier to get around by bike than ever before. The number of trips by bike share and bike-n-ride continues to trend upwards, and has increased significantly over the past few years.*

### 190 Miles of Bicycle Facilities



### Over 100,000 Bike-on-bus boardings in 2014





## FUTURE OPPORTUNITIES & CHALLENGES

Looking forward over the next five years, some key issues that will impact the bicycle-friendliness of Charlotte include:

### **Charlotte BIKES**

The TAP calls for the regular update of Charlotte's Bicycle Plan. The 2017 Charlotte BIKES plan will update the 2008 Charlotte Bicycle Plan, and recommend new short-term action steps that will guide the City's bicycling efforts over the next five to ten years. Charlotte BIKES will also modernize the City's approach to bicycle facilities by recommending a more diverse list of bicycle facility types than were anticipated in the 2008 Charlotte Bicycle Plan. The Plan will detail under what context buffered bicycle lanes, protected bicycle facilities, and multi-use paths are appropriate.

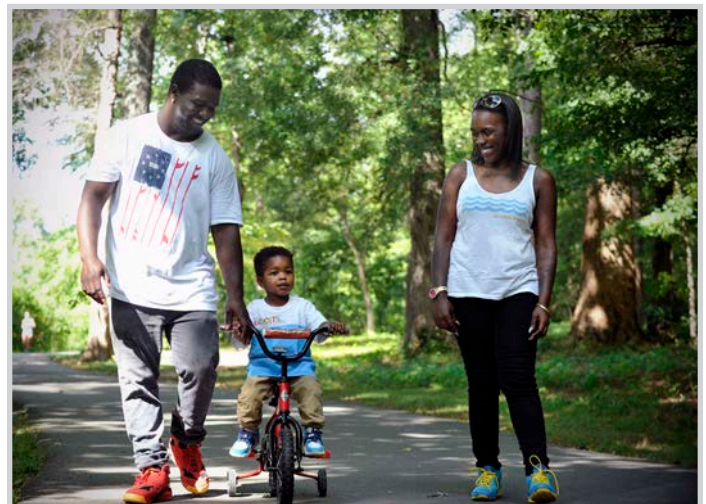
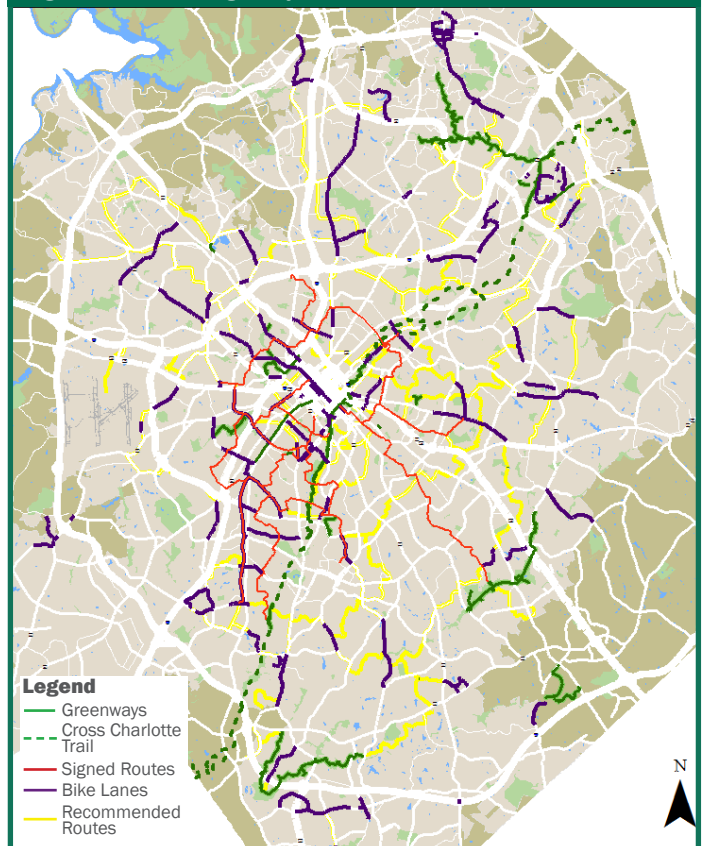
### **Dedicated Funding for Bicycle Facilities**

While the City's 2014-2020 Community Investment Plan provided significant funding to implement particular bicycle projects such as the Cross Charlotte Trail, the CIP did not set aside dedicated funds for the bicycle program. Having specific funding set-aside for the bicycle program will be essential to implement the programs and projects recommended in the Charlotte BIKES plan and to make Charlotte more bicycle-friendly.

### **Right-of-Way Constraints**

Charlotte has limited right-of-way widths compared to many other cities, especially those located outside of the Southeast. The relatively narrow pavement and right-of-way widths of our thoroughfares make retrofitting roadways for bicycle facilities very difficult due to the trade-offs involved. The combination of the Comprehensive Transportation Plan and the City's work on a Unified Development Ordinance will create an opportunity to revise right-of-way widths required within the City of Charlotte. Requiring rights-of-way of appropriate widths will be important to continue implementing bicycle facilities in Charlotte.

**Figure 7. Existing Bicycle Network**



*Learning to ride on the Cross Charlotte Trail*

**50% OF CHARLOTTEANS  
WOULD LIKE TO  
BIKE MORE**

- 2016 TRANSPORTATION SURVEY







## PUBLIC TRANSPORTATION

### BACKGROUND

Public transportation provides greater freedom, access, opportunity and mobility choices for Charlotte residents and visitors. Charlotte Area Transit System's current strategy first emerged in 1998 with the adoption of the 2025 Integrated Transit/Land Use Plan. The Plan recommended rapid transit and transit-oriented development be put in place in the five corridors defined in the Centers, Corridors and Wedges Growth Framework. In addition, it recommended that local and express bus service be expanded in the wedges and smaller towns in Mecklenburg County. A referendum implementing a one-half percent increase to the sales tax for the purpose of funding these transit service improvements was passed in November, 1998. As a result of this, the Charlotte Area Transit System (CATS) was formed in 2000.

An updated 2030 Corridor System Plan was developed and approved by the Metropolitan Transit Commission in November, 2006. The Corridor System Plan defines the alignments and technologies in each corridor and an implementation schedule for the system. It also includes a streetcar system in Uptown Charlotte, along Central Avenue and along Beatties Ford Road. The South Corridor (generally, the area between South Boulevard and I-77) was the first location chosen to implement a light rail line. The LYNX Blue Line began operations in 2007.

CATS also produces the Countywide Transit Services Plan, a short-term (five-year) plan whose primary purpose is to identify specific transit service enhancements for implementation on a year-by-year basis. The Plan provides a detailed blueprint for improving public transportation services in Mecklenburg County.

CATS realizes that public transportation cannot realistically serve all person trips made within a metropolitan area. The flexibility of the automobile, combined with existing land use patterns and cost considerations, make it impossible for transit to compete for all trips. However, transit can compete effectively for market share in many locations, especially in Activity Centers and Growth Corridors.

#### ACCORDING TO THE 2014 TRANSPORTATION SURVEY

**40 %**

**40 % of respondents  
think it is difficult to  
take the bus or train  
in Charlotte**

**61 %**

**61 % of respondents  
would like to take  
the bus or train  
more often**



*Construction of the Blue Line Extension in the Northeast Corridor*



## IMPLEMENTATION

Since the adoption of the previous TAP Update in 2011, the following progress has been made towards improving public transportation:

### ***Ridership***

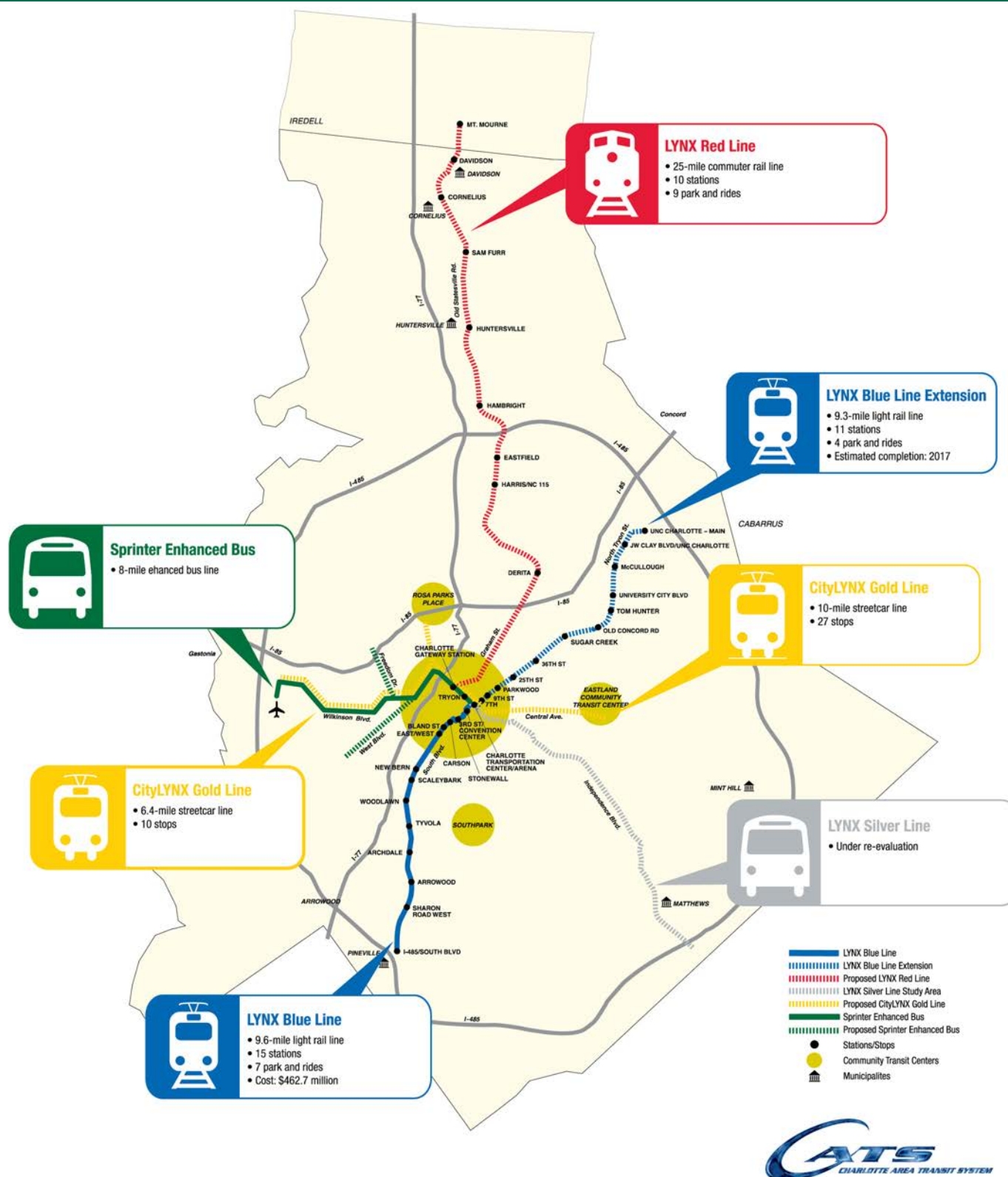
In 2016, CATS served over 22 million passengers, a nearly 70 percent increase in riders since the Transportation Action Plan was first adopted in 2006. On an average weekday, CATS serves over 70,000 boardings.

### ***Development of the Five-Corridor Transit System***

- In the South Corridor, the LYNX Blue Line continues to operate and stimulate development. On an average weekday, the LYNX Blue Line carries over 15,000 riders. Since the construction of the LYNX Blue Line, development within the South Corridor has increased significantly. Development attributable to the rail line totals \$1.45 billion, and over 4,400 units of higher-density housing have been built in the South End area to date.
- In the Southeast Corridor, CATS undertook a study to develop both an interim US-74 express lane bus transit strategy as well as a preferred light rail alignment for the LYNX Silver Line. The study concluded in September 2016 with a staff recommendation to the Metropolitan Transit Commission (MTC). The MTC is scheduled to action on the staff light rail recommendations in November 2016. If approved, the recommendations will update the 2030 System Plan. Highlights of the recommendations are outlined below:
  - US-74 Express Bus Lane Strategy
    - An express route plan for 40x, 46x, 52x, 64x, 65x, 74x that maximizes the existing and future US-74 Express lane access points
    - Future park and ride recommendations near Conference Drive and Sardis Road N
    - Sprinter service on Central Avenue and Albemarle Road
  - LYNX Silver Line Light Rail Recommendation
    - 13-15 miles long
    - 7-10 miles of rail trails
    - 13 stations with 8-10 park and rides
    - Uptown alignments should be studied as part of a System Integration/West Corridor Study
    - Continue the alignment West to the Airport as a single light rail corridor from the Airport to Matthews
- In the North Corridor, the Charlotte Area Transit System continues to plan for a commuter rail service from Uptown Charlotte to Mooresville. This service would operate on the existing “O” freight rail line currently owned by Norfolk Southern. However, with no clear path to implement commuter rail service in this corridor, CATS will need to develop short and medium-term bus service strategies that will utilize the I-77 express lanes scheduled to be complete in late 2018. CATS is currently conducting a North Corridor Mobility Study that will:
  - Enhance the existing express service to mitigate the effects of the I-77 express lane construction
  - Develop an expanded express bus operating plan that maximizes the benefits of the I-77 express lanes
  - Identify supporting capital improvements such as park and rides and bus stop amenities



### Figure 8. LYNX System Map



**The CATS System currently consists of:**

- A 9-mile light rail line
- A 1.5 mile streetcar line
- 49 local and express bus routes
- Four regional express routes
- 20 community circulators
- 3,258 bus stops
- 300 benches
- 320 shelters



- In the Northeast Corridor, the Lynx Blue Line Extension is currently under construction with a projected opening date in 2017. This line will provide light rail service from Uptown to the University of North Carolina – Charlotte.
- In the West Corridor, CATS continues operation of the Sprinter enhanced bus service, connecting Uptown to Charlotte-Douglas International Airport. The LYNX Silver Line study has recommended that the corridor should be served by light rail rather than streetcar service. CATS will evaluate this service alternative more in 2017.

### Launch of the CityLYNX Gold Line

In July, 2015, Phase 1 of the CityLYNX Gold Line streetcar service began operation on a 1.5 mile stretch of Trade Street/Elizabeth Avenue between the Charlotte Transportation Center and Novant Health Presbyterian Medical Center.

### Evolving Transit System

With the completion of the LYNX Blue Line Extension in August 2017, there will be 26 stations and 19-miles of light rail across Mecklenburg County. Due to the upcoming completion of the LYNX Blue Line, changing development patterns, and new mobility options such as ride sharing services, CATS is undertaking a Comprehensive Operational Analysis, called Envision My Ride. The study will provide recommendations to maximize bus/rail connections, address first/last mile issues, and expand coverage area.

### Improvements to Bus Stops

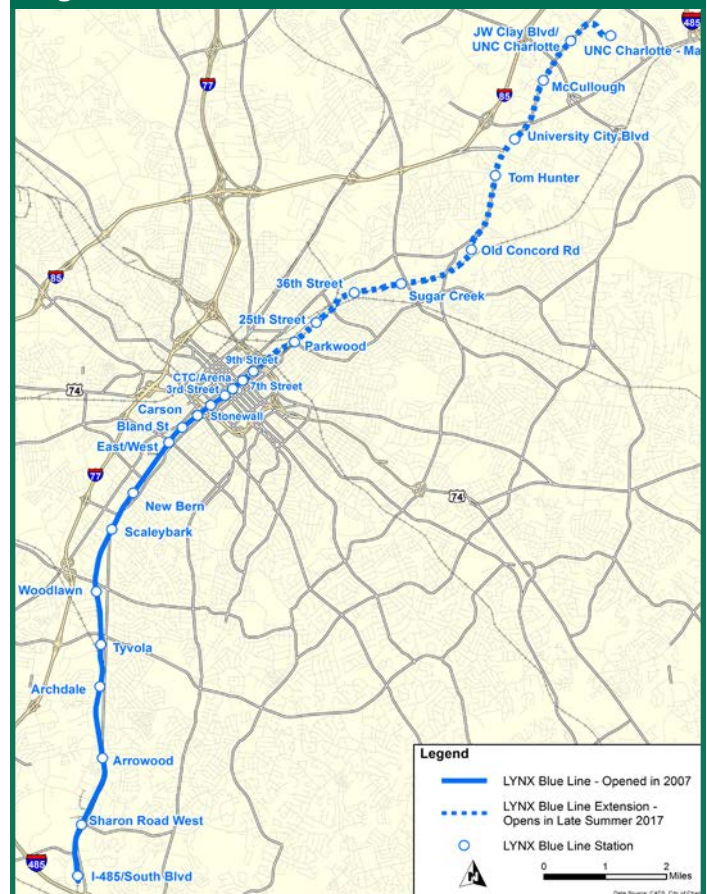
CATS has made significant improvements to customer amenities at bus stops. Since 2011, CATS has replaced over 3,400 bus stops with new stops that display route name and number along with schedule information, and added 300 new shelters and 89 benches along with concrete waiting pads for customers.

THE LYNX BLUE LINE  
CARRIES OVER  
**15,000**  
PASSENGERS PER DAY



CATS Sprinter bus service to Charlotte-Douglas Int'l Airport

Figure 9. LYNX Blue Line Extension





## FUTURE OPPORTUNITIES & CHALLENGES

Looking forward over the next five years, some key issues that will impact the success of public transportation in Charlotte include:

### ***Launch of the LYNX Blue Line Extension***

The Blue Line Extension is currently scheduled to begin operation in August 2017. The complete LYNX Blue Line service will provide a 19-mile rapid transit line, connecting the University of North Carolina-Charlotte at the northern terminus, with Uptown towards the middle, and the I-485 Park-and-Ride station at the southern terminus. The LYNX Blue Line Extension will be a catalyst for development within the Northeast Corridor.

### ***Extension of the CityLYNX Gold Line***

Phase 2 of the CityLYNX Gold Line streetcar service extends the Phase 1 segment by 2.5 miles on the east and west ends of the line creating an interim system for 4 miles. CityLYNX Gold Line Phase 2 will extend west 2 miles from the Charlotte Transportation Center to French Street and east one-half mile along Hawthorne Lane from Novant Health Presbyterian Medical Center to Sunnyside Avenue. Phase 2 will also provide funds for the purchase of modern streetcar vehicles. The CityLYNX Gold Line serves as a critical connection for the efficient and robust operation of the overall transit system, linking together the current and future rapid transit lines. Securing additional funding for Phase 3 will be essential to complete the vision of a 10-mile streetcar service.

### ***Funding for Rapid Transit Expansion***

Given that the current transit half-cent sales tax will not be sufficient to fund the remaining corridors in the 2030 Transit System Plan, and that a steady stream of Federal and State funding is not guaranteed, CATS created a Transit Funding Working Group (TFWG) (Committee) In 2013 the group released a report that detailed a toolbox of possible funding options. This toolbox includes:

- Ability to use different project delivery methods (e.g. public-private partnerships)
- Development and implementation of new and expanded land-use policies to foster private investments
- Creation of value capture methods within each corridor and/or across all corridors
- Ability to leverage Federal financing instruments
- Development and implementation of zoning incentives to encourage private development
- Creation of a local infrastructure bank
- Expansion of products and services applicable to local sales tax
- Expansion of ancillary revenue sources by leveraging transit assets
- Seeking compensation through carbon emissions / environmental credit markets

After much analysis and discussion the Committee determined that with a flexible funding model and the right toolbox in place, there could be more than one path available for each corridor and the overall 2030 Transit Plan to advance. It is the Committee's belief that the Metropolitan Transit Commission, in collaboration with its partners (Mecklenburg County and the towns and cities within it) can utilize this strategy and toolbox to advance the 2030 Transit Plan.







## TRANSPORTATION SAFETY

### BACKGROUND

Providing for the safety of all road users – motorists, bicyclists and pedestrians – is a primary objective of CDOT. CDOT administers a comprehensive traffic safety program through a variety of means including managing a crash database of over 10 years of data, analyzing and reporting collision trends annually, identifying and implementing safety countermeasures based on trends, and providing transportation safety awareness and education campaigns. CDOT also produces an annual safety report that reports collision trends and highlights collision hot spots for all modes. The report also includes two lists that evaluate collisions at the City's 19,242 intersection.

The first list of intersections is commonly referred to as the High Accident Location (HAL) list. The primary goal of releasing the HAL is to prioritize and identify locations that can benefit from spot safety improvements that will reduce the number of collisions. This list is also used to support the ranking and prioritization needs of many transportation related programs.

The second list is the Intersection Safety Warrant list. It is recalculated every two years. This list is not based strictly on highest crash rate. The locations for this list are selected based on many crash factors such as frequency, rate, severity and crash pattern. This list is used by CDOT and City staff to identify locations that can benefit from spot safety improvements as well as to support the ranking and prioritization of other transportation related programs.

In addition to the data collected through the annual report, citizen requests and observations are evaluated on a nearly daily basis using the crash history database. These requests are one of CDOT's best sources for identifying safety challenges that can be addressed through engineering, education and enforcement.

Figure 10. Total Annual Collisions





## IMPLEMENTATION

Since the adoption of the previous TAP Update in 2011, the following progress has been made towards improving transportation safety:

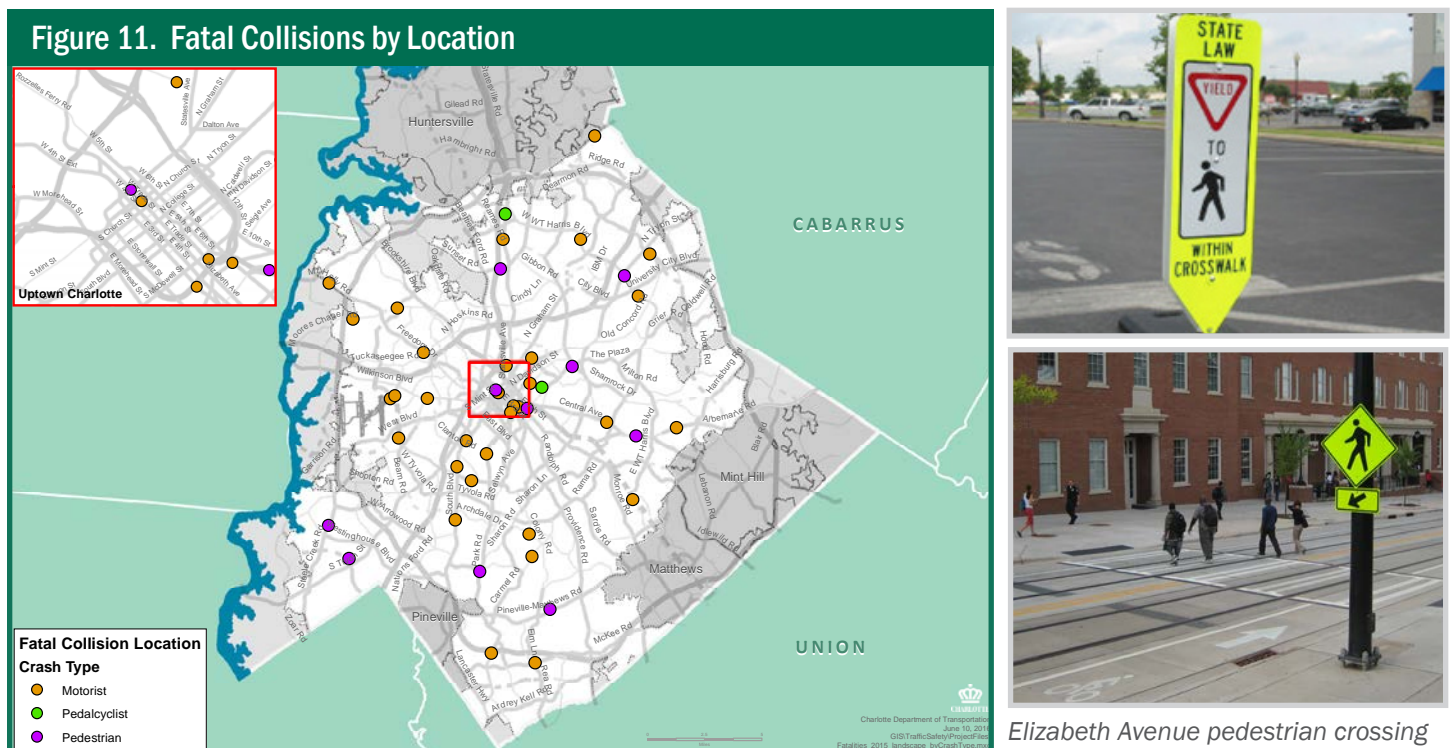
### Safety Campaigns

In 2015, CDOT partnered with NCDOT to undertake the Watch For Me NC Campaign. Numerous agencies were involved, including the Charlotte-Mecklenburg Police Department, Charlotte Area Transit System, the Mecklenburg County Sheriff's Office, Carolinas Healthcare System, Novant Health, Charlotte Mecklenburg Schools, Charlotte B-Cycle, AARP and the Mecklenburg County Health Department.

CMPD conducted 10 enforcement events, and distributed numerous bumper stickers, rack cards, posters and other promotional safety literature through community events. There were three media events, including a safety demonstration of the bicycle box on Elizabeth Avenue. Seven safety promotions were installed on billboards, and advertisements streamed on Pandora radio. This campaign was supported by approximately \$80,000 worth of materials, training and media buys. All funding was provided by the NCDOT.

### Safety Projects

Since 2011, CDOT has improved safety on roadways and at intersections through many different types of safety treatments. At intersections and mid-block crossings, CDOT has installed treatments, such as pedestrian refuge islands and pedestrian hybrid beacons, to improve the safety of pedestrians as they cross busy thoroughfares. On roadways, CDOT has improved safety by constructing over 20 road diets throughout the City. Road diets help to better balance the needs of all users and rededicate space to our most vulnerable users. While the City cannot road diet all streets, it has been a valuable safety tool in recent years.





## FUTURE OPPORTUNITIES & CHALLENGES

Looking forward over the next five years, some key issues that will impact the safety of Charlotte's transportation network include:

### ***Reckless and Distracted Driving Trends***

Between 2000 and 2010, motorist crash rates were generally trending down in Charlotte. However, since 2011, the motorist crash rate per million miles traveled has increased by 58 percent. Speeding was a factor in 39 percent of the fatal collisions in 2015. Data on distracted driving is not easily collected, but the increasing availability of technology and screens in motor vehicles competes for drivers' attention.

This upward trend in collisions and fatalities has attracted additional interest in transportation safety. Encouraging motorists to comply with speed limits and to stop at red-light traffic signals will be an important part of reversing the upward trend in fatalities. Similarly, educational and enforcement campaigns that discourage distracted driving can help reduce the upward trend in collisions.

### ***State Funding for Traffic Safety Projects and Campaigns***

Traffic safety improvements can require significant funds for construction, especially in locations that are constrained by existing land use and road geometries. There are existing deficiencies in safety project funding, safety project and program tracking and analysis (rigorous before and after studies), and incident identification and management.

### ***Pedestrian and Bicycle Safety***

More Charlotte residents are moving about the City by foot and on bike. In the past, limited efforts were made in training motorists, pedestrians and bicyclists on how to coexist and share the road. In addition, the City has a legacy of designing thoroughfares solely for motor vehicle travel, with little accommodation for pedestrians and bicyclists. Investing in both educational campaigns, as well as targeted safety projects for pedestrians and bicyclists, could go a long way towards improving the safety of the transportation network for these increasingly popular modes.



East 8th Street and Lamar Avenue



Walk to School Day







## STREET MAINTENANCE

### BACKGROUND

Charlotte residents have come to expect high-quality pavement and sidewalk conditions as part of their travel experience. Maintaining Charlotte's extensive street network is the task of CDOT's Street Maintenance Division and the NCDOT. For city-maintained streets, CDOT is charged with maintaining over 2,455 lane miles of streets, 1,890 miles of sidewalks and 760 signalized intersections over a 300 square mile area.

Research shows that the most cost-efficient street resurfacing cycle is every 12 years on average. A proactive pavement maintenance program focuses on preventing the deterioration of a street's surface as well as its foundation. Potholes and pavement cracking can lead to significant deterioration of the street's foundation.

Preventive maintenance activities, including a 12-year resurfacing cycle, result in appropriately maintained streets and provide the most cost-effective long-term upkeep of our streets. A reduction in preventive maintenance activities will result in increased long-term resurfacing costs and an overall degradation of pavement conditions.

Historically, the City has been able to maintain an average pavement condition rating of 80 or higher, exceeding what most municipalities have been reporting statewide.



Construction on I-29 Southbound



## IMPLEMENTATION

Since the adoption of the previous TAP Update, the following progress has been made towards maintenance:

### Ongoing Resurfacing

The last time the City was able to achieve a 12-year paving cycle was during Fiscal Year 2000. Since 2000, the paving cycle has fluctuated between 12 and 39 years. This fluctuation is due to changes in resurfacing costs, construction of new streets and increased maintenance needs associated with failing pavements. The most recent pavement condition survey revealed that our streets are continuing to degrade at a consistent rate. The City's street condition rating has continued to drop from the target of 90 in 2001 to the current low of 82 in 2016 (see Figure 12).

The City's goal is to maintain a rating of 90 on a scale of 100. City Council increased funding for street maintenance by \$4.2 million in Fiscal Year 2007 to shorten the resurfacing cycle, allowing CDOT to pave and rehabilitate additional roads. This addition of funds, in conjunction with a one-time supplement of more than \$3 million, provided a significant increase in the pavement condition rating. Initially, asphalt price increases limited the benefit, but in Fiscal Year 2009-2010 paving season, material prices were at their lowest levels in three years, allowing CDOT to resurface a significant number of roads. With the additional funding a substantial increase in the overall pavement condition rating was realized.

## MAINTAINING CHARLOTTE'S STREET NETWORK

**2,455** MILES OF  
STREETS



**1,890** MILES OF  
SIDEWALKS



**91** MILES OF  
BIKE LANES



**208**  
BRIDGES



**1,204** POTHOLES  
REPAIRED  
PER YEAR



Sidewalk installation on Commonwealth Avenue



## FUTURE OPPORTUNITIES & CHALLENGES

Looking forward over the next five years, some key issues that will impact the condition of Charlotte's streets include:

### ***Maintenance Funding for City Transportation Infrastructure***

Maintenance funding for streets, sidewalks, and roadway drainage will be a significant issue over the next five years. Without sustained increases in the funding level for road maintenance, the City can expect to see continued declines in the overall pavement condition. In addition, sidewalk and roadway drainage structures will continue to deteriorate and need replacement or repair. Since 2000, the City has averaged a 21 year resurfacing cycle, which is well beyond the 12-year life of asphalt pavement. Identifying funding sources for transportation infrastructure that can keep pace with increases in traffic, population growth and development will be key to not only improving our existing infrastructure but also maintaining it.

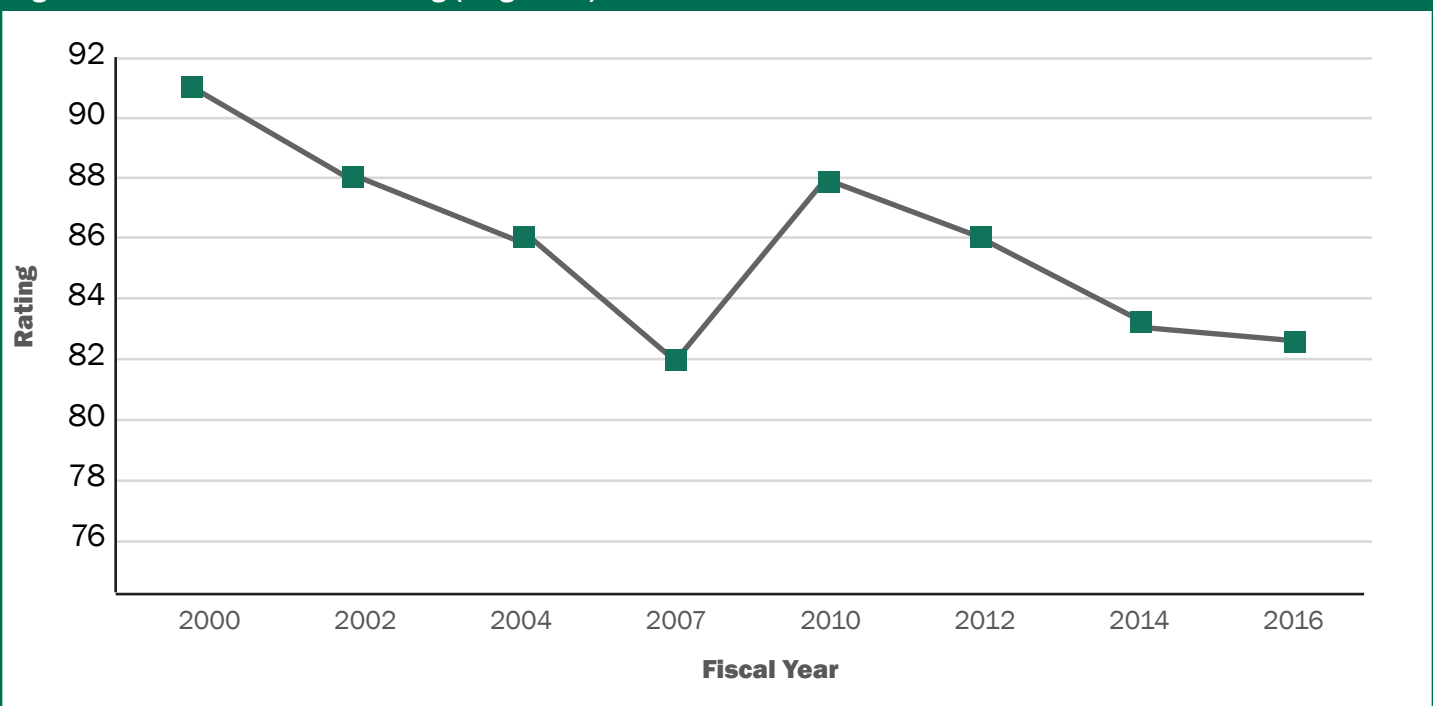
### ***Maintenance Funding for State Transportation Infrastructure***

According to the 2013 Report Card for America's Infrastructure published by the American Society for Civil Engineers, North Carolina earned a grade of "C" for road conditions and "C-" for bridge conditions. Forty-five percent of roads in the State were rated in poor or mediocre condition. Similar to the City, the State of North Carolina is faced with maintaining a vast street network with a funding source (gas tax) that does not keep pace with inflation.

### ***Americans with Disabilities Act Sidewalk Compliance***

Removing barriers to accessing public right-of-way is a key component of the Americans with Disabilities Act (ADA). Sidewalks and curb ramps must meet standards to ensure access by all users. Identifying gaps, deficiencies and regular maintenance needs will be a substantial project. Similarly, the planning, design and construction of improvements and maintenance will require a sizable funding source and the allocation of staff resources.

**Figure 12. Street Condition Rating (Target: 90)**









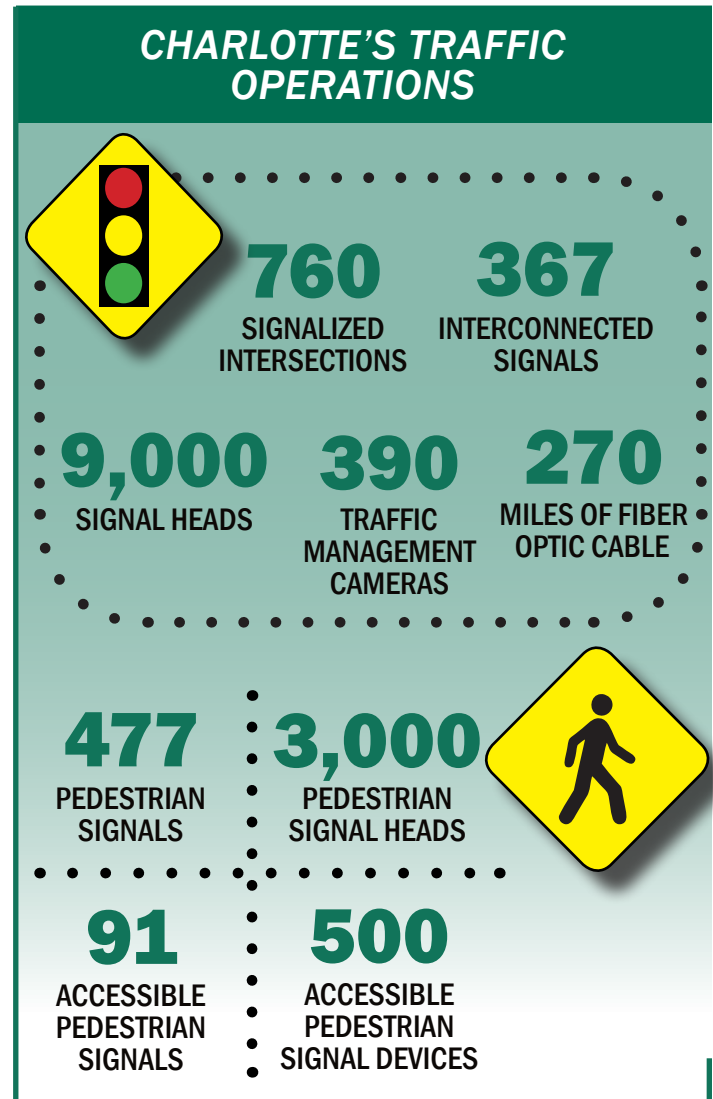
## TRANSPORTATION OPERATIONS

### BACKGROUND

Providing for safe, efficient and orderly flow of traffic on a daily basis relies on a comprehensive transportation system approach to traffic operations. Traffic operations—such as the installation and maintenance of signs, signals, and markings—provide system users with traffic information that is needed to complete their daily trips in a safe and efficient manner.

CDOT currently maintains 760 traffic signals. In 2001, CDOT began installing fiber optic communications lines to traffic signals and traffic management cameras to support intelligent transportation system development. This communication allows engineers to monitor traffic signals and ensure proper operation, and make signal timing changes when needed. An intelligent transportation system master plan was developed in 2004 and updated in 2008 to provide a comprehensive strategy to implement an enhanced network. Today, CDOT maintains approximately 270 miles of fiber optic lines. On average, CDOT installs an additional 10 miles of lines per year to the system. As of 2016, fiber optic lines reach approximately 73% of all traffic signals within the City.

Making Charlotte a more walkable City is a priority in traffic operations. CDOT is studying potential changes in signs, signals and pavement markings to improve the pedestrian crossing experience. CDOT also works closely with the Charlotte-Mecklenburg Advocacy Council for People with Disabilities (ACPD) and the Metrolina Association for the Blind (MAB) to identify opportunities to improve accessibility for all users. The City installs accessible pedestrian signal devices that have auditory and vibrotactile features which provide multi-sensory cues to help visually impaired users cross the street. To date, the City has installed devices at 91 of the City's 760 signalized intersections.



The intersection of East 4th Street and South Caldwell Street is a good example of how the City is working to improve pedestrian crossings through traffic operations.



## IMPLEMENTATION

Since the adoption of the previous TAP Update in 2011, the following progress has been made towards improving transportation operations:

### ***On-going Traffic Signal Operations***

The City re-times traffic signals and performs preventative maintenance on signal equipment every two years. In the last five years, CDOT has accomplished the following:

- Replaced LED indications in all traffic and pedestrian signals;
- Installed 90 traffic management cameras and 48 miles of fiber optic cable;
- Continued to convert traffic signal communications from serial to Ethernet; and
- Installed 13 leading pedestrian intervals to give pedestrians using crosswalks at signalized intersections a head start before traffic moves.

### ***Implementation of Innovative Pavement Markings***

The City continues to pursue new and improved pavement markings for pedestrians, bicyclists and motorists. Recently, this has included the implementation of “bicycle boxes” and “green bicycle lanes”. Bike boxes provide a safe and visible way for bicyclists to queue at intersections, while green bike lanes increase the visibility of bicycle facilities on roadways.

The City is also working to increase the visibility and recognition of high-volume trails at street crossings through innovative crossing treatments. The crossing treatments highlight potential conflict areas between different user groups and help to reinforce priority for pedestrians and cyclists.



The Charlotte Rail Trail crossing at the intersection of East Tremont Avenue and Camden Road is one example of how the City is working to make pedestrians and cyclists more visible at street crossings.



## FUTURE OPPORTUNITIES & CHALLENGES

Looking forward over the next five years, some key issues that will impact transportation operations in Charlotte include:

### ***Funding for Traffic Signal Investments***

A well managed street network is the lifeblood of the City for all users, whether they ride transit, ride a bike, walk or drive a car. Traffic operations keep everyone moving safely and efficiently. Adequately funded traffic operations result in increased efficiencies for the traveling public. Ensuring that all traffic signals are tied into a communications network allows staff to constantly monitor and adjust signal timing based on changes in volume and demand; help fire trucks arrive at their destinations quicker and safer; and provides faster responses to citizen requests and complaints. Upgrading traffic signal controllers allows for advanced traffic signal operations, improved coordination of signals, and increased safety for motorists during equipment failures.

### ***Growing Demands for Travel with Limited Opportunities for New Capacity***

Charlotte's intersections are tasked with serving a significant volume of people and vehicles. For example, the traffic signal at the intersection of Fairview Road and Sharon Road processes approximately 75,000 vehicles per day. This intersection must handle all of the motorists traveling through this intersection, while still accommodating pedestrians crossing the street. As areas like South Park continue to intensify, traffic signals and intersections will need to accommodate even more travel from pedestrians, motorists and bicyclists. Balancing the competing priorities at major intersections will require managing trade-offs and additional investments.

### ***Growing Segment of Older Drivers***

As the “Baby-Boom” generation ages, Charlotte will have an increasing number of older drivers behind the wheel. Older drivers have different needs and expectations than are now provided in our transportation network. Enhanced signs, markings and accessible pedestrian technology at traffic signals will play an important roll in accommodating older drivers' mobility needs. Adequately maintaining signs and markings requires compiling and updating a significant inventory of existing equipment.



*Intersection of Sharon Road and Fairview Road*







# CHAPTER 3: GOALS, OBJECTIVES AND POLICIES

This chapter defines the City’s transportation-related goals, objectives and actionable policies to guide Charlotte towards becoming the premier city in the country for integrating land use and transportation choices. These goals, objectives and policies can be used by Charlotte residents, elected officials, and staff to achieve the City’s transportation goals.

**Goal 1** emphasizes that in order for Charlotte to meet its transportation goals we must ensure that Charlotte’s land use pattern is consistent with the City’s Centers, Corridors and Wedges Growth Framework. A successful transportation strategy is directly linked to a successful land use strategy. This Growth Framework will arrange growth in a way that best utilizes our limited transportation resources and results in more efficient and effective transportation system.

**Goal 2** emphasizes the need to plan, design, construct, operate and maintain the City’s transportation network in a way that promotes safe travel, economic development, and transportation choices.

**Goals 3 and 4** emphasize the need to communicate the City’s land use and transportation vision to stakeholders, as well as collaborate with local and regional partners as needed to achieve this vision.

**Goal 5** emphasizes the necessity of seeking financial resources to implement the transportation programs and projects recommended in this Transportation Action Plan Update.



*The development occurring along the LYNX Blue Line is a good example of integrating land use and transportation.*



# GOAL 1

## CONTINUE IMPLEMENTATION OF THE CENTERS, CORRIDORS AND WEDGES GROWTH FRAMEWORK.

### Objective 1.1

The City will continue to track development in Activity Centers and Growth Corridors to help assess the effectiveness of the Growth Framework.

#### 1.1.1

The City will continue to refine the boundaries of the Growth Corridors, Activity Centers and Wedges through the area planning process and reflect these refinements.

#### 1.1.2

The City will encourage a minimum of 70% of new multi-family units, 75% of new office development and 75% of new total employment to be in Activity Centers and key parts of Growth Corridors, consistent with the adopted area plans.

#### 1.1.3

The City will encourage a minimum of 63.5% of Charlotte residents to reside within ¼ mile of transit service.

#### 1.1.4

The City will work with the Charlotte Regional Transportation Planning Organization (CRTPO) to ensure that the Metropolitan Transportation Plan is consistent with and supports the Growth Framework.

#### 1.1.5

The City intends for the Transportation Action Plan (TAP) to support and enhance City Council's adopted housing and neighborhood improvement plans.

#### 1.1.6

The City intends for the TAP to support the Charlotte-Douglas International Airport as a significant multimodal transportation facility, major employment center and important regional economic generator.

#### 1.1.7

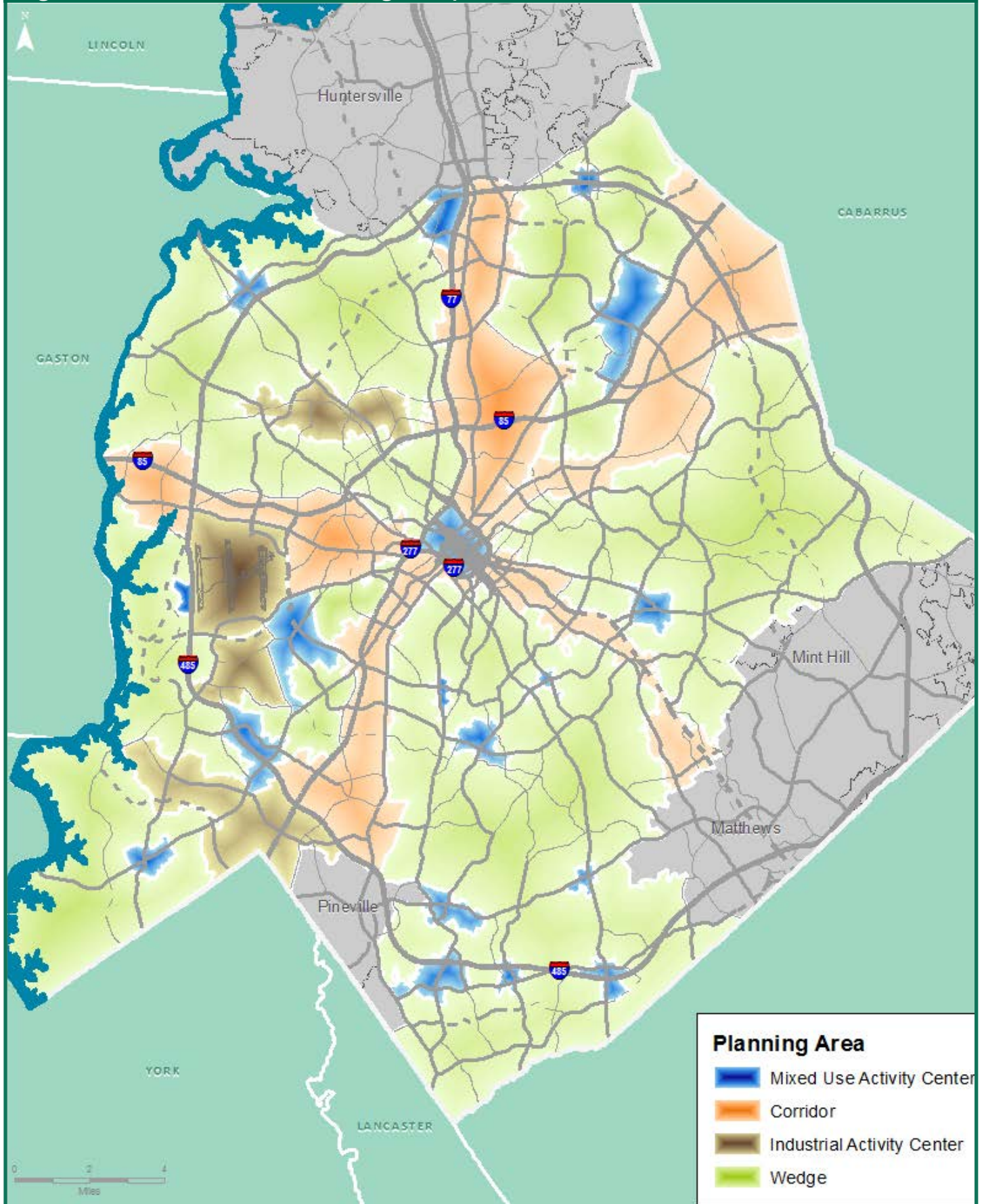
The City will develop Place Type Policies that will serve as a link between the community's expectations for the character of physical development and the upcoming Unified Development Ordinance. Place Type Policies will unify and refresh existing land use and development policy documents.

#### 1.1.8

The City will develop a Unified Development Ordinance that codifies land use, subdivision, transportation and other public realm development standards and implements the community's vision for the development and character of the city established in Place Type and Transportation Policies.



Figure 13. Centers, Corridors &amp; Wedges Map





# GOAL 1

## CONTINUE IMPLEMENTATION OF THE CENTERS, CORRIDORS AND WEDGES GROWTH FRAMEWORK.

### Objective 1.2

The City will ensure that the Community Investment Plan projects are fully coordinated with the Centers, Corridors and Wedges Growth Framework.

#### 1.2.1

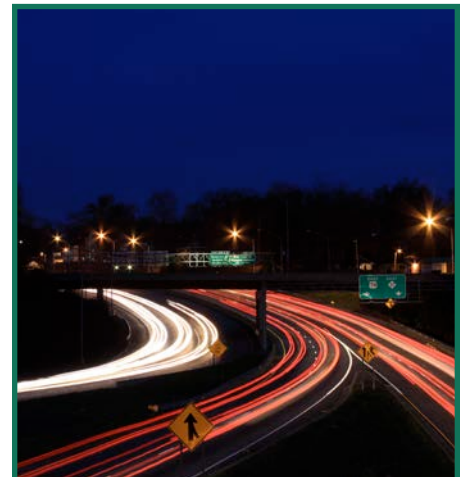
The City will utilize the Community Investment Plan (CIP) to advance transportation projects that support the Centers, Corridors and Wedges Growth Framework.

#### 1.2.2

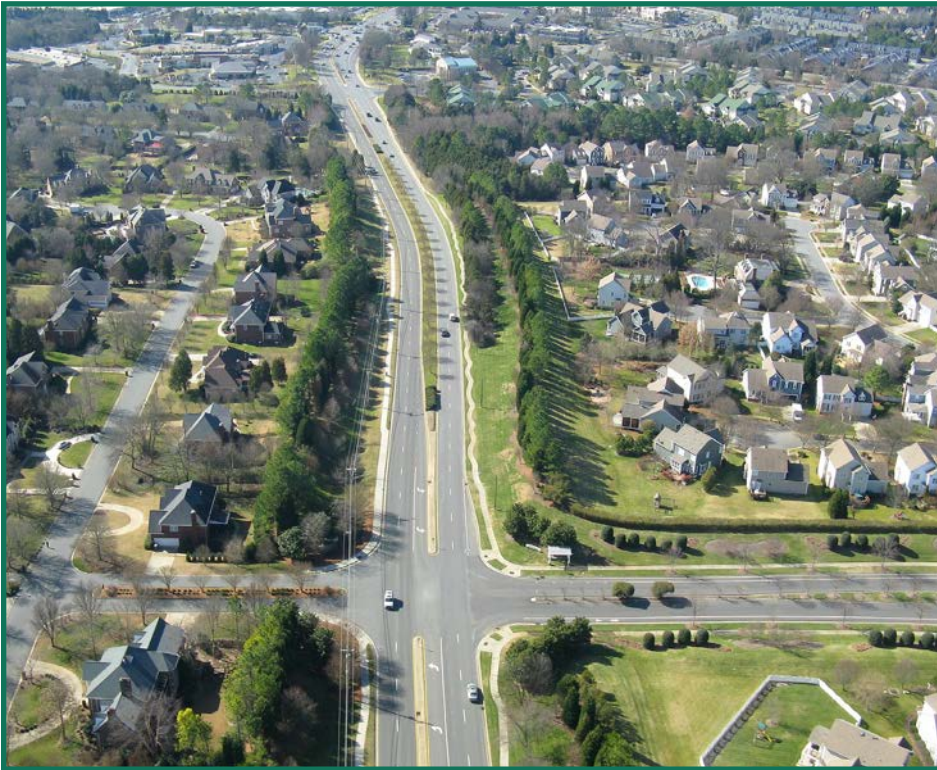
The City will use public infrastructure investment as a catalyst for new transit-supportive development in select station areas.



OVER **\$1.45 BILLION**  
HAS BEEN INVESTED  
ALONG THE SOUTH  
CORRIDOR BY THE  
PRIVATE SECTOR SINCE  
2005







CHARLOTTE IS MADE  
UP OF MANY TYPES  
OF PLACES, EACH  
AREA HAS ITS OWN  
TRANSPORTATION  
NEEDS & CHALLENGES













# GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

## Objective 2.1

The City intends for all transportation projects to improve safety and neighborhood livability, foster economic development, promote transportation choices and active living, and support the Centers, Corridors and Wedges Growth Framework.

### 2.1.1

The City will promote a balanced and multimodal transportation system that serves the mobility needs of all segments of the population (such as reflected in the vision of 8-80 Cities), accommodates all travel modes and promotes community and economic development while furthering the Centers, Corridors and Wedges Growth Framework.

### 2.1.2

The City will classify existing and future streets based on the Urban Street Design Guidelines (USDG) and the Comprehensive Transportation Plan (CTP).

### 2.1.3

The City will prioritize intersection improvements in the Community Investment Plan (CIP) based on crash rates, congestion levels, need for pedestrian, bicycle and transit amenity enhancements, as well as opportunities to leverage investments with public/private partners or other capital program investments.

### 2.1.4

The City will build complete streets consistent with the City's USDG and CTP status and classifications.

### 2.1.5

The City will work with NCDOT to create context-based streets that include transit, bicycle and pedestrian design features as part of new or widened NCDOT street construction projects, or on State-maintained streets.

### 2.1.6

The City will continue to implement overhead street name markers, when installing new signals and during signal maintenance, in an effort to create more user-friendly and visible street signage at signalized intersections.

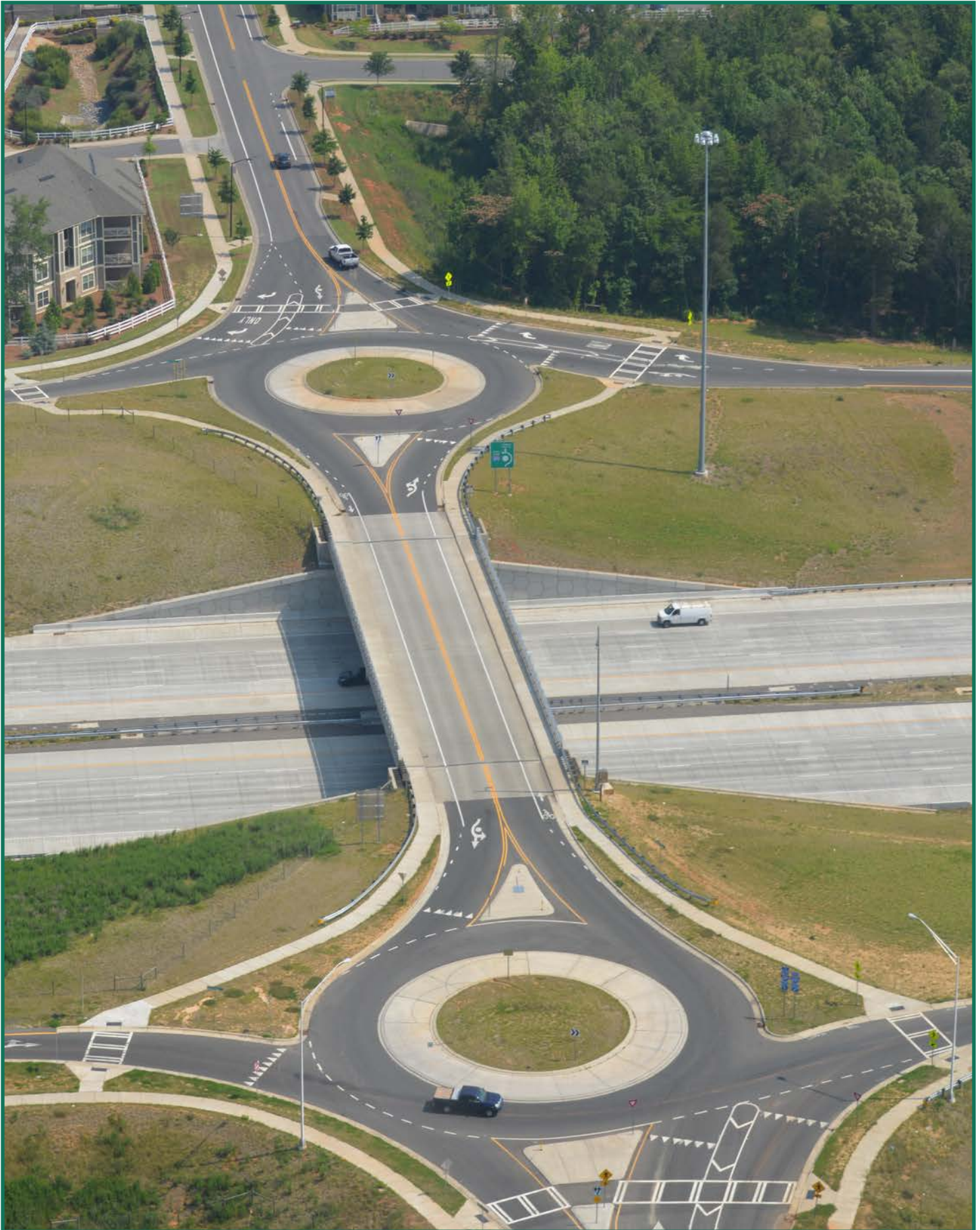
### 2.1.7

The City will take an active role in the education of motorists, pedestrians and bicyclists through annual transportation safety campaigns.

### 2.1.8

The City will work with CRTPO to ensure that the Metropolitan Transportation Plan advances transportation projects that improve safety and livability, promote transportation choices, meet land use objectives, and support the Centers, Corridors and Wedges Growth Framework.







# GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

## Objective 2.2

The City will increase multimodal level of service, construct 100 roadway projects and upgrade 40 intersections over the next 25 years to keep pace with Charlotte's growth.

### 2.2.1

The City will recognize and use the Comprehensive Transportation Plan (CTP) as an assessment and catalog of transportation network conditions for motorists, pedestrians, bicyclists, transit, and freight.

### 2.2.2

The City will monitor levels of service for motorists, bicyclists and pedestrians at signalized intersections.

### 2.2.3

The City will prioritize major roadway projects based on the following three Community Investment Plan (CIP) prioritization criteria:

1. Reduce congestion
2. Improve safety
3. Provide access to employment centers

### 2.2.4

The City will focus transportation mitigation measures on improvements that reinforce the walkable character of Activity Centers and Growth Corridors.

### 2.2.5

The City will conduct turning movement counts at signalized intersections and roadway segment counts, on a two-year rotation, in order to monitor transportation level of service and fulfill formal agreements with NCDOT related to the maintenance and operation of the State's system signals.

### 2.2.6

The City will maintain 10 years of crash data and conduct trend and crash pattern analysis to support ongoing programs.

### 2.2.7

By 2018, the City will consider defining transportation adequacy policies.

### 2.2.8

To keep pace with growth, the City will develop an investment plan to build or upgrade multimodal arterials and intersections.



## 2.2.9

The City will seek to increase the percent of residents living in Activity Centers and Growth Corridors who walk, bicycle, or take transit to work to 20 percent by 2040, and to 10 percent citywide, as calculated using US Census American Community Survey data.

WORKERS COMMUTING BY  
WALKING, BICYCLING & TRANSIT

**11.6 %** IN MIXED-USE  
ACTIVITY CENTERS AND  
GROWTH CORRIDORS

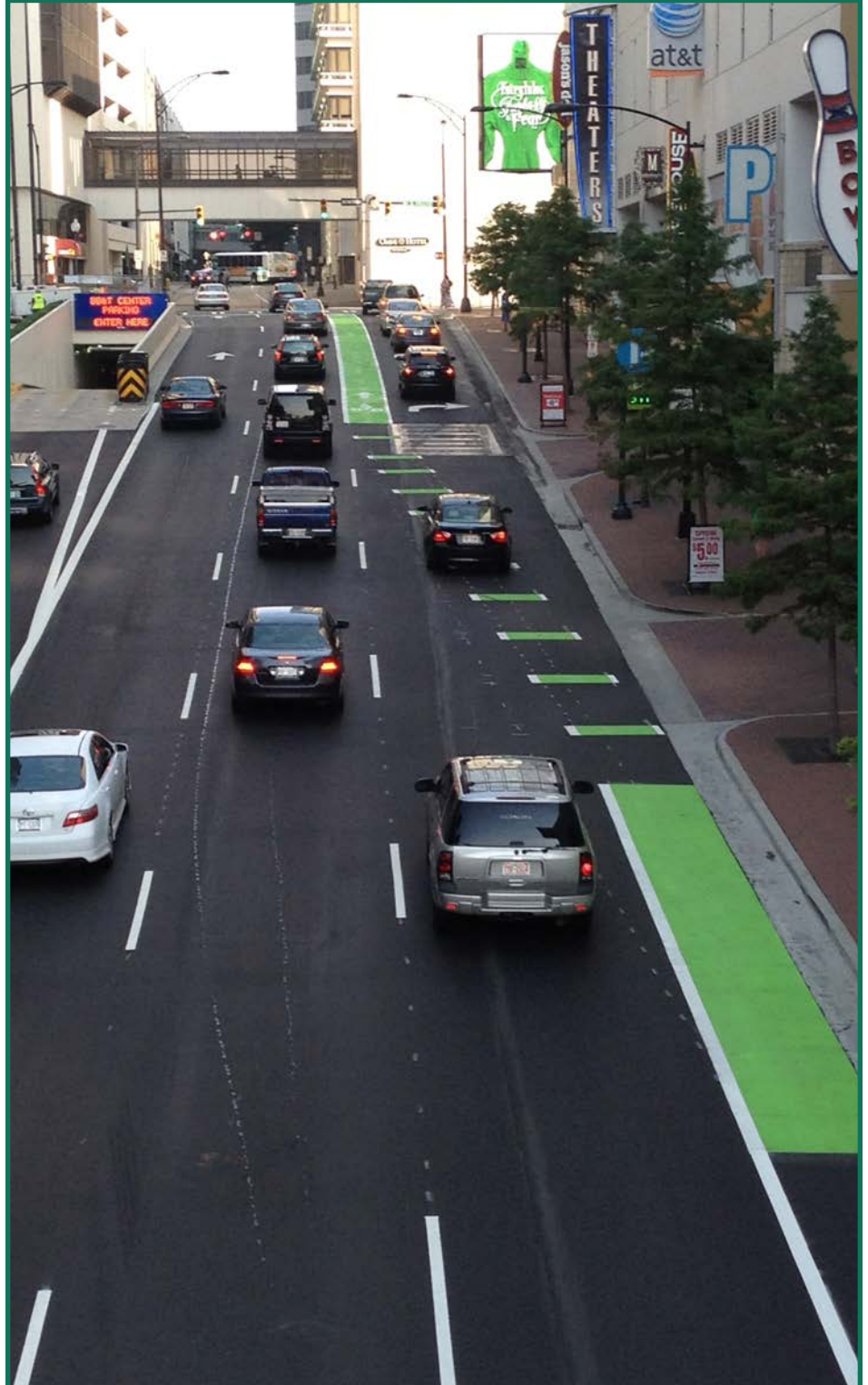
**7.2%** CITYWIDE

--AMERICAN COMMUNITY SURVEY, 2014

INDEPENDENCE  
BOULEVARD IS  
THE CITY'S **BUSIEST**  
THOROUGHFARE

**115,200**

AVERAGE ANNUAL WEEKDAY TRAFFIC AT  
BRIAR CREEK ROAD IN 2013





# GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

## Objective 2.3

CATS will improve the quality of life for everyone in the greater Charlotte region by providing outstanding community-wide public transportation services, while proactively contributing to focused growth and sustainable regional development.

### 2.3.3

CATS will provide expanded, competitive service to grow transit ridership, support land use objectives and maximize commuter choice.



### 2.3.1

The City recognizes that service policies related to achieving this objective will be governed by the Metropolitan Transit Commission (MTC) that is alternately chaired by the Mayor of Charlotte and the Chair of Mecklenburg County Commission. The MTC is responsible for the operating policies of Charlotte Area Transit System (CATS) and sets the policies that govern the expansion, operation and maintenance of transit services within the entire CATS system.

### 2.3.4

CATS headways for local and neighborhood shuttle bus routes will be no more than 60 minutes. In peak periods, 30 minute headways will be the norm on local routes unless low demand warrants less frequent service. Express and Regional Express services will have a minimum of three trips in each peak direction. CATS light rail services will operate at a frequency of 10 minutes or better in the peak and at least 30 minutes in the off-peak.

### 2.3.2

CATS will preserve the local bus system to support the incremental development of a fixed guideway system in key corridors to meet the transportation needs of our diverse population, and provide greater mobility throughout the community and region.

### 2.3.5

The standard span of service for CATS local bus routes, Special Transportation Services and LYNX Blue Line will be 5:00 a.m. to 1:30 a.m. The CityLYNX Gold Line service hours will be from 6:00 a.m. to 11:00 p.m. during the week, and expand to midnight on Friday and Saturday. Exceptions will be made based on ridership and productivity.

## CATS OPERATES

**72** BUS ROUTES  
& **3300** STOPS







# GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

## Objective 2.4

The City will maintain a 12-year resurfacing schedule and an average pavement conditions rating of 90 on all City-maintained streets.

### 2.4.1

The City will monitor and report pavement condition ratings through the use of biennial pavement condition surveys and pavement management data.

### 2.4.2

The City will continue to identify ways to enhance the City's pavement conditions and will conduct a peer comparison of other jurisdictions' standards every five years.

### 2.4.3

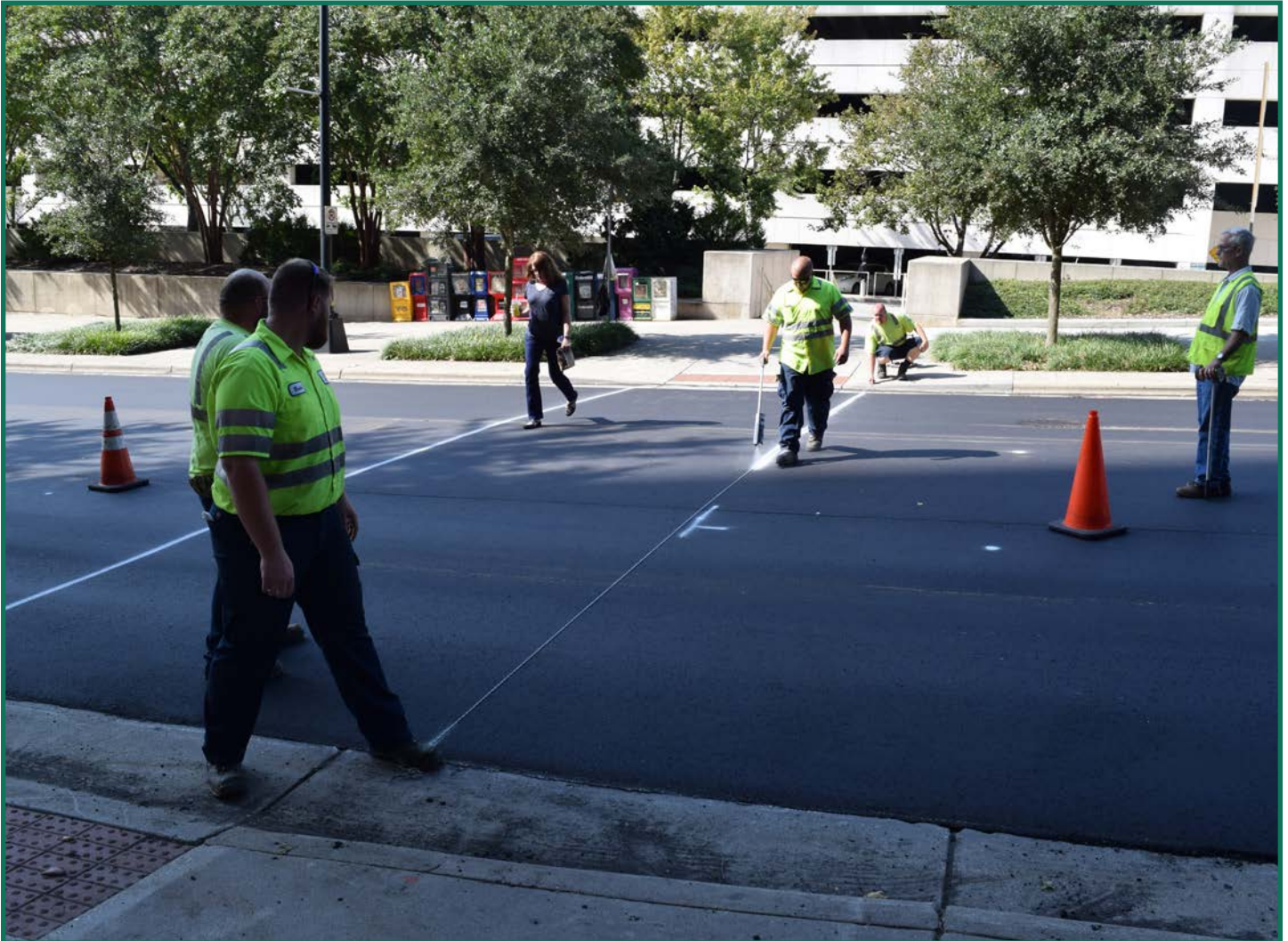
The City will update and refine maintenance related policies and operating procedures every three years.

### 2.4.4

The City will implement bicycle-friendly maintenance procedures and maintain bicycle facilities appropriately.









# GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

## Objective 2.5

The City intends to review and implement transportation safety and operation improvements as needed.

### 2.5.1

The City will implement a Vision Zero initiative by developing a comprehensive program for partnerships, engineering, education, community engagement, and possible speed and red light running enforcement.

### 2.5.2

The City will identify and analyze roadways where speed-related collisions constitute a higher percentage of all crashes in order to prescribe engineering or enforcement countermeasures, consistent with the Urban Street Design Guidelines (USDG), to address excessive vehicle speeds.

### 2.5.3

The City will analyze locations with significantly higher crash rates to develop projects and programs, consistent with the USDG, to reduce both the number of crashes and the overall crash rate.

### 2.5.4

The City will track and report the results of safety improvement programs and projects.

### 2.5.5

The City will seek to maximize capacity of existing streets by investing in technology such as improved controllers, expanding the coordinated signal system and implementing Intelligent Transportation Systems.

### 2.5.6

The City intends for all traffic signals to be part of a coordinated signal system by 2030.

### 2.5.7

The City intends to replace obsolete signal cabinets and controllers in order to maintain the efficient operation of the City's signalized intersections.

### 2.5.8

The City intends for a minimum of 90% of transportation detection systems (loops and video detectors) to be operable at all times, and failed detection devices to be repaired within 30 calendar days.







# GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

## Objective 2.6

The City will complete an additional 50 miles of bikeway facilities within the City by 2020, and an additional 200 miles by 2040.

### 2.6.1

The City will require bicycle facilities on all new or reconstructed roadways within the City, consistent with Comprehensive Transportation Plan (CTP) status and Urban Street Design Guidelines (USDG), and latest NACTO design guidance where feasible. Where bicycle facilities are not feasible, justifications will be included as part of the road preliminary design process and alternative routes will be identified.

### 2.6.2

The City will implement bicycle wayfinding, consisting of destination and distance information, to provide a connected network of bikeways.

### 2.6.3

The City will seek opportunities to provide bicycle facilities through the resurfacing process or other routine maintenance activities.

### 2.6.4

The City will coordinate the construction of the bicycle projects with the implementation of ongoing transit and greenway projects.

### 2.6.5

The City will build off-street bicycle paths, such as the Cross Charlotte Trail, to expand Charlotte's bicycle network, and assist in the implementation of Mecklenburg County's Greenway Master Plan.

### 2.6.6

The City will continue to seek opportunities to increase the availability of bicycle parking in Charlotte.

### 2.6.7

The City will update the Charlotte BIKES bicycle plan every five years.









## GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

### Objective 2.7

The City will construct over 250 miles of new sidewalks by 2040.

#### 2.7.1

The City will provide sidewalks, crosswalks, pedestrian signals, lighting and other facilities consistent with the Urban Street Design Guidelines (USDG) to make it safer, easier and more comfortable for people to walk.

#### 2.7.2

The City will prioritize sidewalk projects based on the City's adopted sidewalk prioritization process.

#### 2.7.3

The City, when constructing sidewalks on existing streets, will build sidewalks on both sides of all thoroughfares, on one side of all collector streets and (when requested) on one side of all local streets, consistent with the sidewalk prioritization process.

#### 2.7.4

The City will require new development to construct sidewalks consistent with City Code.

#### 2.7.5

The City will maintain a sidewalk inventory of existing sidewalks and pedestrian elements. The City will continue to implement the ADA Transition Plan and review the results of the ADA inventory.

#### 2.7.6

By 2017, the City will adopt the Charlotte WALKS pedestrian plan, and update the plan every five years.

**THERE ARE**  
**1,890**  
**MILES**  
 OF SIDEWALK IN  
**CHARLOTTE**









# GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

## Objective 2.8

The City will continue to implement traffic calming in an effort to improve safety and neighborhood livability, promote transportation choices and meet land use objectives.

### 2.8.1

The City will implement neighborhood traffic calming, where requested and in accordance with City policy, to help minimize speeding through a variety of approved remedies, including: speed limit reductions, multi-way stops, speed humps, and other traffic calming measures as deemed appropriate.

### 2.8.2

The City will continue implementing traffic calming measures on non-local streets, as deemed appropriate, to improve safety, livability and transportation choices, and meet land use objectives.

### 2.8.3

The City intends for all school zones to meet the standards for signs, markings, and other safety features set forth in the School Speed Zone and Crossing Policy, as adopted in June, 2004.

CHARLOTTE OPERATES

**80** SCHOOL  
SPEED ZONES









# GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

## Objective 2.9

The City will maintain its connectivity ratio of 1.45 inside Route 4, and increase its connectivity ratio outside Route 4 from 1.19 to 1.35, by 2040.

### 2.9.1

The City will support connectivity by continuing to create new connections, through new development and by identifying and implementing connectivity opportunities.

### 2.9.2

The City will require that new development provide for public access, ingress, and egress by interconnecting streets within developments and with adjoining developments, consistent with City Code.

### 2.9.3

The City will consider implementing Community Investment Plan (CIP) funded bridges and creek crossings to facilitate connectivity.

### 2.9.4

The City will preserve the existing and future connected street system by protecting individual existing street connections and platted non-existing streets, and will consider restoring appropriate street, bicycle and pedestrian connections that were previously severed.

### 2.9.5

The City will require block length spacing and street connection requirements consistent with City Code.

### 2.9.6

The City will continue to seek connectivity improvements as a part of conditional rezonings to achieve the block length spacing recommended in adopted area plans, Urban Street Design Guidelines (USDG) or City Code.

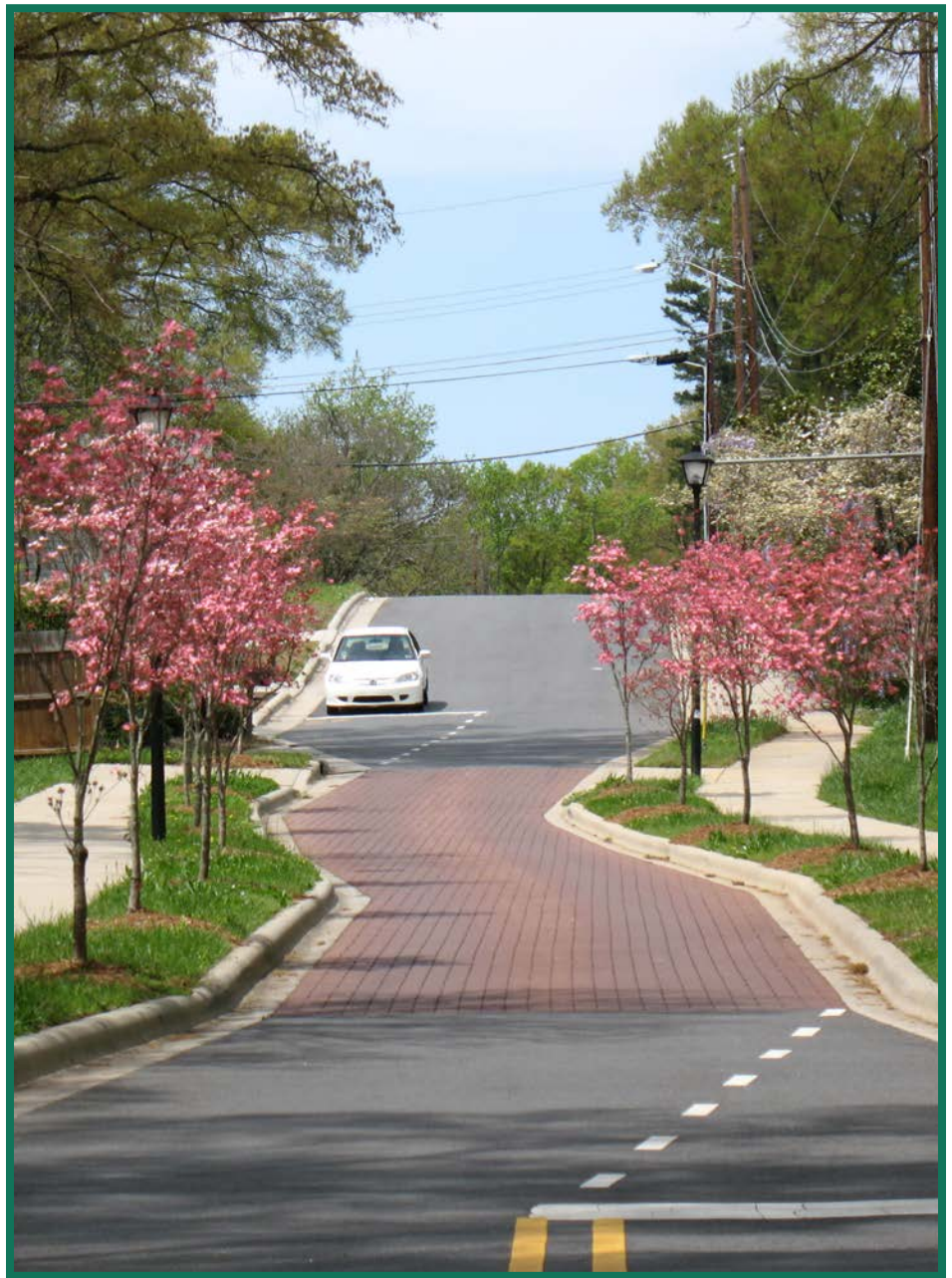
### 2.9.7

The City will discourage gated roadways except in unique circumstances.

### 2.9.8

The City will require new development to provide pedestrian/bicycle connections if the City determines that actual street connections are infeasible.







# GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

## Objective 2.10

The City will adopt policies, guidelines and ordinances that ensure land develops in a manner consistent with achieving Goal 2.

### 2.10.1

The City will use the Comprehensive Transportation Plan (CTP), when adopted by CRTPO, as the official document describing the alignment and condition of existing and future transportation networks for motorists, pedestrians, bicyclists and transit.

### 2.10.2

The City will use the Charlotte Thoroughfare Map, City's Collector Map, CTP Maps, and Area Plan Transportation Maps, for acquisition and reservation of right-of-way and for review of all development proposals and subdivision plats.

### 2.10.3

The City will apply the Urban Street Design Guidelines (USDG) Classification Map and the CTP multimodal maps to help guide the planning and design of existing and future thoroughfares.

### 2.10.4

The City will review and update its right-of-way requirements and ordinances to help ensure the City is preserving thoroughfare rights-of-way, as necessary to accommodate the City's desired multimodal cross-sections for existing and future needs.

### 2.10.5

The City will continue to implement comprehensive access management and context-sensitive sight triangle and site design requirements, consistent with the USDG.

### 2.10.6

The City will continue to consider multimodal transportation impacts when completing a transportation impact analysis.

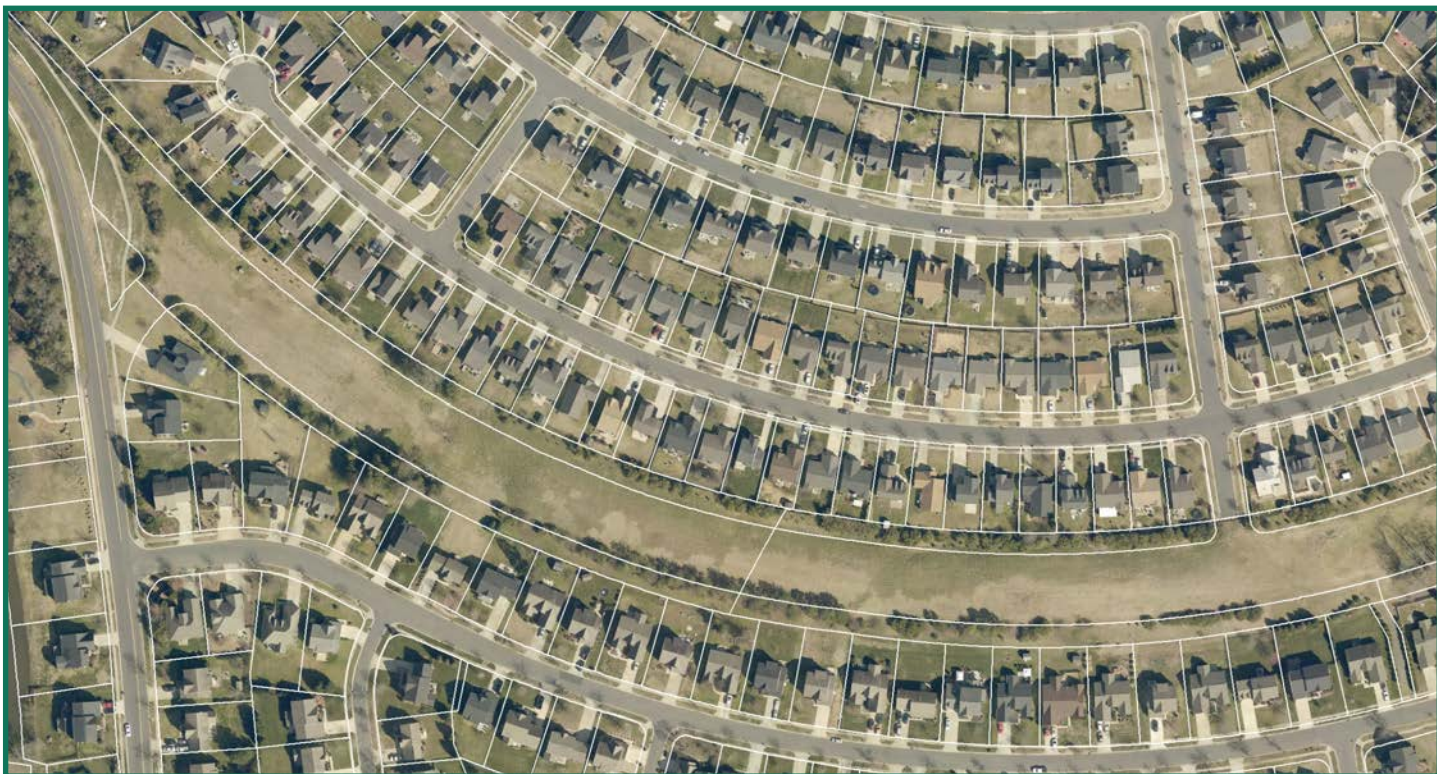
### 2.10.7

The City will reevaluate its development requirements for building new sidewalk and replacing substandard sidewalk in order to provide a more consistent and complete pedestrian network.

### 2.10.8

The City will reevaluate its policies, guidelines and ordinances to implement the recommendations of Charlotte WALKS to create more walkable places in Charlotte.







# GOAL 2

**PRIORITIZE, DESIGN, CONSTRUCT AND MAINTAIN CONVENIENT AND EFFICIENT TRANSPORTATION FACILITIES TO IMPROVE SAFETY AND NEIGHBORHOOD LIVABILITY, FOSTER ECONOMIC DEVELOPMENT, PROMOTE TRANSPORTATION CHOICES AND ACTIVE LIVING, AND MEET LAND USE OBJECTIVES.**

## Objective 2.11

The City will support economic vitality and quality of life by managing public right-of-way in a manner that balances the competing needs of all users for limited public space.

### 2.11.1

The Charlotte Department of Transportation will review all proposals to place items in the public right-of-way.

### 2.11.2

The City will allow for enhancements to the public right-of-way by private entities and individuals through encroachment agreements.

### 2.11.3

Any items proposed in the public right-of-way that generate revenue will only be allowed if the item's primary role is to serve an identified public purpose. Typically, such items will be owned by the City and in all cases the revenue shall belong to the City.

### 2.11.4

The City will manage the use of public right-of-way by utility companies in a manner that minimizes disruption due to construction, protects the City's assets in the right-of-way, minimizes the permanent visual impact of utilities and encourages collocation of utilities wherever possible.

### 2.11.5

The City will approve special events on City streets that promote economic and cultural vitality in a manner that manages impacts to motorists and property owners, and seek to distribute the locations of such events throughout the City.

### 2.11.6

The City will allow for the use of public right-of-way for temporary uses including sidewalk dining, building maintenance, parklets, valet stands, food trucks, Tryon Mall Vendors and other uses that enhance the vitality of City streets, provide a transportation benefit, or are necessary to the day-to-day workings of the City.

### 2.11.7

The City will allow for the temporary leasing of public right-of-way for the construction and staging of private facilities subject to the adopted Right-of-Way Lease policy.









# GOAL 3

**COLLABORATE WITH LOCAL AND REGIONAL PARTNERS ON LAND USE, TRANSPORTATION AND AIR QUALITY TO ENHANCE ENVIRONMENTAL QUALITY AND PROMOTE LONG-TERM REGIONAL SUSTAINABILITY.**

## Objective 3.1

The City will coordinate and collaborate with local and regional partners as needed.

### 3.1.1

The City will coordinate with local and regional partners to ensure that the Metropolitan Transportation Plan (MTP) complements and supports the Transportation Action Plan (TAP).

### 3.1.2

The City will continue to promote intergovernmental coordination with regional and local partners such as NCDOT, MPOs, CRAFT, CCOG, Mecklenburg County and adjacent jurisdictions to address transportation, land use and air quality issues.

### 3.1.3

The City recognizes that reducing vehicle miles traveled (VMT) per capita is critical to improving the region's air quality and will continue to coordinate with regional partners to develop and implement strategies to reduce per capita VMT.

### 3.1.4

The City will continue to collect and analyze data annually regarding local, regional and national trends in transportation, including congestion, population and employment growth, and report this information in the TAP Annual Report.

### 3.1.5

The City will develop plans that include transportation, VMT, economic and air quality impacts, and consider VMT and vehicle trip reduction targets.

### 3.1.6

The City will work cooperatively with NCDOT to ensure that their transportation projects meet the region's transportation and land use vision and air quality objectives.

### 3.1.7

The City will work with its regional partners to ensure that the regional travel model is maintained and utilized to evaluate regional transportation and land use scenarios.

### 3.1.8

The City will coordinate with the Charlotte-Mecklenburg School system to provide children with more opportunities to walk or bicycle to school in an effort to reduce VMT, reduce energy consumption and create more livable neighborhoods.



### 3.1.9

The City will assist in the implementation of regional planning initiatives like the Centralina Council of Governments' "Connect Our Future", Regional Growth Framework and Mecklenburg County's Livable Communities Plan that support the TAP.

### 3.1.10

The City intends to use the Community Investment Plan (CIP) and MTP process, to ensure that transportation projects that promote intermodal freight and goods movement are appropriately prioritized.

### 3.1.11

The City will work with regional partners to promote a regional network of express and local bus service and vanpool facilities to enhance regional air quality and multimodal travel choices.

### 3.1.12

CATS will continue to collaborate with Metropolitan Transit Commission (MTC) member jurisdictions on the adoption and promotion of Joint Development Policies as guidance in implementing the Joint Development Principles that were adopted by all MTC members with jurisdiction over a rapid transit corridor.

### 3.1.13

The City will work with transportation partners to implement the recommendations of the regional Managed Lanes Study and create a regional network of high-occupancy toll (HOT) lanes and/or high-occupancy vehicle (HOV) lanes. CATS will leverage managed lanes to support express transit services.

### 3.1.14

The City will monitor the progress of autonomous vehicle development and implementation in order to begin planning for safe and effective accommodation of autonomous vehicles.





# GOAL 4

## COMMUNICATE LAND USE AND TRANSPORTATION OBJECTIVES AND SERVICES TO KEY STAKEHOLDERS.

### Objective 4.1

The City will communicate and periodically update its land use and transportation objectives to stakeholders.

#### 4.1.1

The City will update the Transportation Action Plan (TAP) every five years, at a minimum, to ensure that Charlotte residents are provided the latest information regarding the City's short-term and long-term transportation conditions, objectives and accomplishments.

#### 4.1.2

The City will develop a TAP Annual Report that details TAP-related accomplishments, as well as current activities and challenges. The report will also detail the status and performance of the existing transportation system (e.g. Transportation Analysis Report).

#### 4.1.3

The City intends for periodic updates of the Community Investment Plan (CIP) to be consistent with the TAP.

#### 4.1.4

The City will continue to implement a biennial survey to determine baseline public awareness and knowledge of the strategies recommended in the TAP, including the Centers, Corridors and Wedges Growth Framework and the City's multimodal transportation approach.

#### 4.1.5

The City intends, for information presented to the public regarding transportation and land use plans, to include a description on how the plans and projects are consistent with and support accomplishing the goals and objectives of the TAP and the Centers, Corridors and Wedges Growth Framework.

#### 4.1.6

The City will seek to engage Charlotte residents and stakeholders in meaningful ways as part of the development of TAP-related plans and projects.

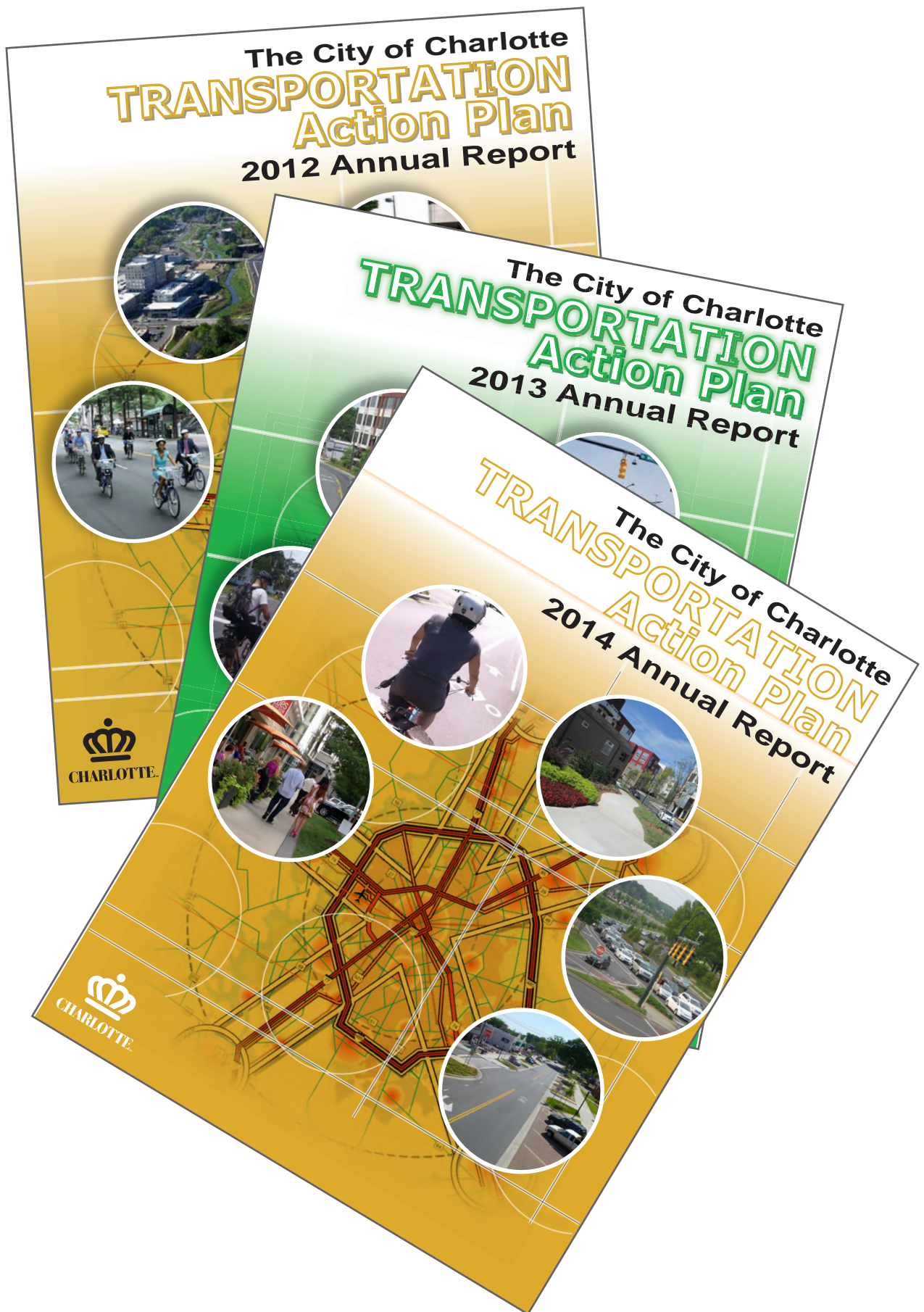


CDOT HOSTED

# 55

**PUBLIC MEETINGS**  
FOR TRANSPORTATION PROJECTS  
IN 2015







# GOAL 5

**SEEK FINANCIAL RESOURCES, EXTERNAL GRANTS AND FUNDING PARTNERSHIPS NECESSARY TO IMPLEMENT TRANSPORTATION PROGRAMS AND SERVICES.**

## Objective 5.1

The City will annually review and update transportation conditions and funding assumptions to assess whether the City is “keeping pace” with transportation demands generated by growth and development.

### 5.1.1

The City will consider all potential funding opportunities to implement the Transportation Action Plan (TAP).

### 5.1.2

The City will update (no less than every five years) its list of financially feasible and proposed transportation projects in five and 10-year increments in conjunction with updates to the Community Investment Plan (CIP) and Transportation Improvement Program (TIP).

### 5.1.3

The City will monitor current transportation funding revenues and expenditures on an annual basis to ensure that they are keeping pace with the assumptions in the TAP.

### 5.1.4

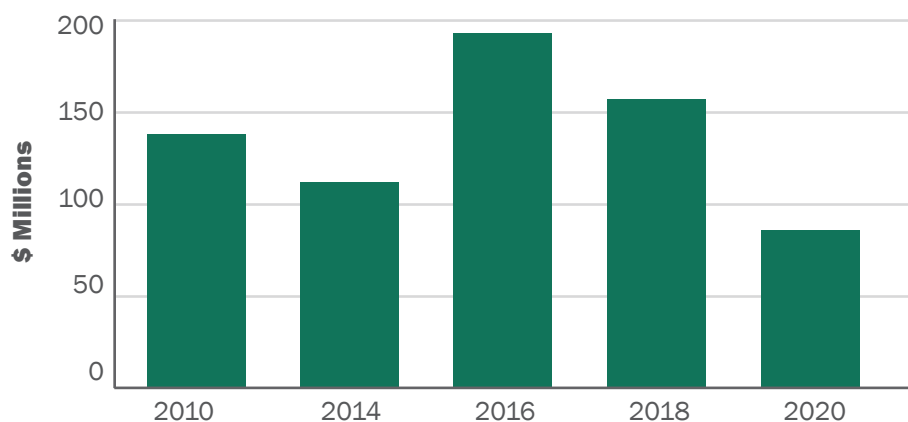
The City will continue to research opportunities to implement alternative transportation funding sources as identified by the Committee of 21 in 2008.

### 5.1.5

The City will work with the Charlotte Regional Transportation Planning Organization (CRTPO) and NCDOT to ensure that funding allocated through North Carolina’s Surface Transportation Investments law is used to implement projects that are consistent with the TAP.



**City Transportation Bonds by Year**













# CHAPTER 4: PROJECT AND PROGRAM RECOMMENDATIONS

Hundreds of thousands of people will be moving to Charlotte in the next 25 years, and they will not bring their streets, sidewalks and bikeways with them. The following transportation-related statistics provide a snapshot of the future challenges facing Charlotte and demonstrate the need to continue to invest in Charlotte's transportation network. To build, maintain, and operate a travel network with safe options for pedestrians, bicyclists, transit riders and motorists in our rapidly growing City, the 2016 TAP Update recommends investing \$5.1 billion in our transportation network over the next 25 years.

This chapter outlines the Recommended Expenditure Plan and describes the funding needed for the recommended projects and programs.

## ***FUTURE CHALLENGES FACING CHARLOTTE: STATISTICAL INDICATORS***

- Charlotte is the second fastest growing large city in the United States.
- By 2040, Charlotte's population is estimated to reach 1,200,000 people.
- The number of daily person trips made within Charlotte is projected to grow from approximately 3 million trips today to 4.5 million in 2040.
- Charlotte maintains over 2,450 miles of streets, and will maintain over 3,100 miles by 2040.
- Today, the City's pavement condition rating is 82.0. Without appropriate funding, this rating will decline significantly in the future.
- The City has an estimated 1,890 miles of sidewalks. Today, approximately 66 percent of thoroughfares have sidewalks on both sides of the street. The proposed funding will complete the pedestrian network along all thoroughfares.
- With the proposed funding, Charlotte would implement over 250 miles of bicycle facilities over the next 25 years.



## TAP RECOMMENDED EXPENDITURE PLAN

To address the ongoing needs of Charlotte's transportation system, the TAP includes a Recommended Expenditures Plan. The Recommended Expenditure Plan is divided into eight categories, each of which outlines the recommended programs and expenditures needed to maintain our existing infrastructure and continue to enhance our transportation system. A brief description of each category is provided below:

- 1. Maintenance** - programs related to maintaining our existing transportation system, including roadways, bridges and sidewalks
- 2. Safety** - programs related to implementing the Vision Zero philosophy and making our transportation system safer for all modes
- 3. Technology** - programs related to improving traffic flow on roadways through innovative signal timing and traffic control upgrades
- 4. Complete Streets** - programs related to planning, designing and constructing roadways for people of all ages and abilities
- 5. Walkability** - programs related to improving the pedestrian environment and creating a safe, useful and inviting pedestrian network
- 6. Bicycle Travel** - programs related to connecting Charlotte through a network of bicycle lanes, off-street paths, cycle tracks and signed routes
- 7. Placemaking** - programs related to enhancing Charlotte's streetscapes and their usability, appearance and identity
- 8. Preserve Opportunities** - programs related to ensuring that opportunities to improve the transportation system are not lost

These eight categories are not meant to be overly strict, but rather a way to group programs. Some programs may be appropriate in several categories, but were grouped based on which category seemed most appropriate. For example, improving the pedestrian environment may be accomplished by several categories, including Complete Streets, Walkability and Placemaking. The following section explains the purposes of the various programs in more detail.

### A city of 1.2 million people requires a complete transportation system.

- For motorists this means that there are adequate numbers of through lanes and turn lanes, an interconnected signal system and well maintained roadways.
- For bicyclists this means that there is a connected network consisting of bicycle lanes, off-street paths, cycle tracks and signed routes.
- For pedestrians this means that there are sidewalks buffered from traffic, safe pedestrian crossings and designated walk signals.

Together, the TAP Update recommends approximately \$5 billion in improvements for pedestrians, bicyclists and motorists.





## What does it take to complete our Transportation Network?

- |  |  |  |
|--|--|--|
| <p><b>1 Maintenance - \$665 Million</b></p> <ul style="list-style-type: none"> <li>• 12-year resurfacing cycle</li> <li>• 160 miles of sidewalk</li> <li>• 100 miles of curb and gutter</li> </ul>   | <p><b>4 Complete Streets- \$3 Billion</b></p> <ul style="list-style-type: none"> <li>• 100 arterial roadway projects designed for motorists, bicyclists and pedestrians</li> <li>• 40 multimodal intersections</li> <li>• Bridge inspections every 2 years and 10 bridge replacements</li> <li>• 200 smaller-scale projects</li> </ul> | <p><b>7 Placemaking- \$300 Million</b></p> <ul style="list-style-type: none"> <li>• Station area projects in two rapid transit corridors</li> <li>• Projects in five mixed-use activity centers</li> <li>• 100-150 traffic calming projects</li> <li>• 20-25 streetscape projects</li> <li>• 20 area plan projects</li> </ul>                          |
| <p><b>2 Technology - \$285 Million</b></p> <ul style="list-style-type: none"> <li>• New equipment at intersections</li> <li>• Operate and upgrade Traffic Management Center</li> <li>• Signs and markings</li> <li>• ITS technology</li> <li>• New streetlights</li> </ul> | <p><b>5 Walkability - \$405 Million</b></p> <ul style="list-style-type: none"> <li>• 250 miles of new sidewalks</li> <li>• Projects at 20 schools</li> <li>• 250 crossings at arterials</li> <li>• ADA retrofit projects</li> </ul>  | <p><b>8 Preserving Opportunities - \$330 Million</b></p> <ul style="list-style-type: none"> <li>• Design/preliminary engineering for selected future projects</li> <li>• Advance acquisition to preserve parcels for right-of-way</li> <li>• Leverage funds with private developers and State to create better projects and travel networks</li> </ul> |
| <p><b>3 Safety - \$130 Million</b></p> <ul style="list-style-type: none"> <li>• Vision Zero philosophy to reduce fatal crashes and serious injuries</li> <li>• 40 projects that improve safety for all users</li> </ul>  | <p><b>6 Bicycle Travel - \$100 Million</b></p> <ul style="list-style-type: none"> <li>• 250 miles of new bikeways, including buffered bike lanes and off-street paths</li> <li>• 80 low-cost bike/ped connections</li> </ul>   |  |







## **MAINTENANCE**

### **STREET RESURFACING - \$638M**

This program provides funding for the street resurfacing budget. CDOT's Street Maintenance Division has worked to keep City roads maintained on a 12-year cycle and an average street condition rating of 90. This ensures that roads are repaired prior to needing more serious reconstruction. Street maintenance and resurfacing are funded primarily through the North Carolina Powell Bill Fund and contributions from the City's General Fund. Due to the implementation of the Strategic Transportation Investments law, the future of Powell Bill funding is unclear, potentially resulting in a larger allocation from the General Fund being needed to make up the funding gap.

The TAP recommends a funding level of \$638 million over the 25-year planning period for Charlotte's roadways. It is anticipated that \$277 million would be derived from Powell Bill and the General Fund during this time period, leaving a \$361 million gap. The full funding of this program will fund approximately 11,000 miles of resurfacing, meeting the 12-year maintenance cycle standard.

### **SIDEWALK MAINTENANCE - \$16M**

This program provides funding to maintain Charlotte's growing sidewalk network. CDOT's Street Maintenance Division has been funding sidewalk maintenance through sidewalk construction funds allocated by the Community Investment Plan. This program will provide a dedicated source of funding to adequately maintain the sidewalk network.

The TAP recommends a funding level of \$16 million over the 25-year planning period. It is anticipated that this program will replace approximately 160 miles of sidewalk at roughly \$90,000 per mile.

### **CURB AND GUTTER MAINTENANCE - \$11M**

This program provides funding for the maintenance of the City's curbs and gutters. Historically, CDOT's Street Maintenance Division has funded an annual curb replacement contract focused on repairing and improving curbs in conjunction with resurfacing streets. These contracts were funded from the resurfacing budget during years of adequate appropriations. Due to the decrease in funds for resurfacing and the increased cost in concrete, there has not been an adequate replacement contract for the last three years. Funding an annual curb replacement program would allow Street Maintenance to once again replace curbs in need of repair, especially in older neighborhoods, without forcing a reduction in resurfacing funds.

The TAP recommends a funding level of \$11 million over the 25-year planning period. It is anticipated that this program will fund the replacement of approximately 100 miles of curb and gutter throughout the City.







## **SAFETY**

### **TRANSPORTATION SAFETY PROJECTS - \$130M**

This program consists of projects that enhance the safety of the transportation network. A key element of this program is the implementation of the Vision Zero philosophy. Projects include engineering improvements to existing facilities; equipment upgrades to enhance the functionality and safety aspects of traffic control devices; evaluation of new and innovative products that could potentially be used to address safety concerns citywide; implementation of annual traffic safety educational campaigns; support to partners in traffic safety efforts (Charlotte-Mecklenburg Police Department, Safe Communities, Safety and Health Council); and development of tools to further enhance the identification and treatment of safety concerns for all transportation system users.

The TAP recommends a funding level of \$130 million over the 25-year planning period. It is anticipated that this program will fund a variety of low-cost safety projects and provide educational opportunities to improve transportation safety.





ROZZELLES FERRY RD 3100

IDAHO DR 3100

W. TRADE ST

7



## TECHNOLOGY

### TRAFFIC CONTROL DEVICE UPGRADES - \$100M

This program provides funding for the scheduled maintenance and replacement of obsolete traffic control devices, such as traffic signals and roadway signs. Eligibility for upgrades will be based on the age of the traffic controllers, and the establishment of a program to address replacement on an annual basis. Replacing obsolete traffic controllers and loop detectors is necessary to maintain an optimal traffic flow and provide a safe travel environment. Today, there are approximately 760 signal-controlled intersections. As development occurs, additional signals will need to be installed.

There is also a need to upgrade traffic signs and markings to meet higher visibility standards. As our population ages, visibility will become more of an issue. Implementing higher visibility standards will support visibility for all users, especially older populations. In addition, Accessible Pedestrian Signal devices (APS) will be installed at key intersections to assist visually impaired citizens to cross safely.

The TAP recommends a funding level of \$100 million over the 25-year planning period. It is anticipated that this program will replace equipment at the existing 760 signalized intersections, as well as upgrade equipment at 325 new signalized intersections over the next 25 years; replace signs and markings to meet higher visibility standards; install APS devices at 500 intersections; and upgrade signage and signals at 600 pedestrian crossings.

### INTELLIGENT TRANSPORTATION SYSTEMS - \$92.5M

This program provides funding for methods to improve traffic flow by using existing streets more efficiently. This will be accomplished through three techniques: (1) optimal signal coordination (2) intelligent transportation systems and (3) incident management.

**Optimal Signal Coordination:** Today, 80 percent of traffic signals operate in a coordinated system. The goal of this program is to have 100 percent of traffic signals operating in a coordinated signal system within five years. This will promote a more efficient operating system and minimize maintenance of signal timing. Coordinated signal systems will also support the development of a fully integrated signal system that can be operated from one central signal control facility.

**Intelligent Transportation System (ITS):** ITS describes various technologies applied to a transportation system to improve efficiency and safety. ITS is currently being applied across the United States to respond to local, regional and national transportation issues. In Charlotte, the application of ITS is used to improve traffic flow through a traffic responsive signal system, which is capable of providing real-time traffic surveillance, traffic counts and travel speed data to the operator. This data can also be used to determine levels of congestion and implement corresponding signal timing plans that take into account variations in daily traffic, thus minimizing travel delay.

Ultimately, ITS can improve traffic management and allow our transportation system to operate more efficiently within existing roadways, and minimize the need for road widening in some cases. ITS can also provide critical travel time information to users through variable message signs. Increased funding is proposed in the next 25 years to support deployment of ITS technologies along critical corridors.







## INTELLIGENT TRANSPORTATION SYSTEMS (CONT'D)

**Incident Management:** This technique would assist Charlotte-Mecklenburg Police Department in the clearance of motor vehicle incidents, serve as first responders to signal outages, provide additional traffic control during special events, and assist disabled motorists during AM and PM rush hours. It would also provide investigative services for road hazard identification and removal where appropriate, and support coordination with appropriate city staff to facilitate necessary changes in travel and minimize disruption to traffic.

The TAP recommends a funding level of \$92.5 million over the 25-year planning period.

## RAILROAD GRADE CROSSINGS - \$73M

This program allocates funding for the replacement of railroad crossings by installing modular-type railroad crossing fittings to increase riding comfort. This program also removes rails at abandoned crossings. The intent of this program is to improve riding comfort and to reduce congestion at track locations.

This program also provides funds for the City's share of installing railroad warning flashers. Railroad warning flashers are required at hazardous or potentially hazardous rail highway grade crossings, as identified through a statewide safety analysis. This program is designed to correct high accident locations by reducing the probability of train-car collisions at unprotected grade crossings. The Federal Government, through the Federal Highway Safety Program, provides 90 percent of the funds for this program. The State provides the remaining 10 percent matching funds if the project is on a State system roadway. This program provides funding for the roadways that are not maintained by the State and therefore require a 10 percent City match. This program also allocates funding for new crossing infrastructure to implement "quiet zones", which will limit train horn noise through residential areas.

The TAP recommends a funding level of \$73 million over the 25-year planning period.

## STREET LIGHTING - \$20M

As roads are upgraded to City standards, street lighting is not always installed. To provide a safer environment for all users, it is recommended that the City add lighting on thoroughfares where they are needed. This program would install lights on the 125 miles of thoroughfares that are not presently illuminated.

The TAP recommends a funding level of \$20 million over the 25-year planning period.







## COMPLETE STREETS

### MAJOR STREET PROJECTS - \$2.5B

This program provides funding to construct 100 multimodal arterial roadway projects by adding travel lanes, bicycle facilities and sidewalks. Based on evaluation criteria (congestion, access to employment and safety), a prioritized list of local roadway needs was developed. See Appendix B for a description of each project and its estimated cost.

The TAP recommends a funding level of \$2.5 billion over the 25-year planning period for major street projects. It is anticipated that \$700 million would be derived from State transportation funds during this time period, leaving a \$1.8 billion need for other funding sources.

### INTERSECTION PROJECTS - \$250M

This program improves travel conditions for vehicles, pedestrians, bicyclists and transit users at existing intersections. Many of Charlotte's intersections are deficient for motorists. Many intersections in Charlotte are also not pedestrian- or bicycle-friendly due to a number of factors, including but not limited to: a lack of pedestrian signals or crosswalks, signal timing issues, excessive crossing distances, no sidewalk or wheelchair ramps, no bicycle lanes and miscellaneous intersection design features. This program would provide funding to increase capacity at intersections and make intersections more multimodal.

Under this program, intersections would be ranked to determine their level of accommodations for pedestrians, bicyclists and motorists. Prioritization will be based on criteria such as the number of accidents, congestion levels, and pedestrian and bicyclist level of service. The intersections which rank highest each fiscal year will be programmed for multimodal modifications to enhance safety for all users.

The TAP recommends a funding level of \$250 million over the 25-year planning period. It is anticipated that this program will fund approximately 40 intersection projects.

### SPOT CAPACITY PROJECTS - \$100M

This program provides relatively low-cost improvements to the roadway system that will increase traffic capacity and reduce accident potential. Projects within this program will provide (a) small-scale safety improvements, (b) turn lanes at intersections, (c) widening of roads that have been partially widened through the subdivision process and (d) construction of additional intermittent lanes to allow for uninterrupted traffic flow where left turns are frequent. This program is needed to relieve traffic congestion, improve safety, and reduce energy consumption by providing "quick fix" and longer-term solutions to traffic problems where feasible.

The TAP recommends a funding level of \$100 million over the 25-year planning period. It is anticipated that this program will fund approximately 200 projects.

### BRIDGES - \$88M

This program provides for the timely inspection, repair and replacement of substandard bridges throughout the City. This program's purpose is to maintain a safe bridge system by repairing and replacing bridges that do not meet structural capacity and width standards. Locations for bridge repairs and replacements will be identified through the State's biennial inspection program, and by the City's annexations.

The TAP recommends a funding level of \$88 million over the 25-year planning period. It is anticipated that this program will fund the continued inspection of all bridges in the City on a biennial basis, and make repairs as needed. It would also fund the replacement of 10 bridges over the same period.

### INVESTING IN A NETWORK FOR ALL MODES









## **WALKABILITY**

### **SIDEWALKS AND PEDESTRIAN SAFETY PROJECTS - \$355M**

This program provides funding for the construction of new sidewalks throughout the City, as well as new pedestrian crossings along thoroughfares. Priorities for sidewalks and pedestrian crossings are determined by surveys of the roadway networks along thoroughfares and residential streets. The current policy states that every thoroughfare should have sidewalks on both sides of the road, while residential streets should have sidewalk on at least one side of the road. Sidewalks are prioritized for construction based on a set of criteria developed by CDOT. This program will encourage pedestrian use, improve safety, and provide connections within the existing sidewalk network.

The TAP recommends a funding level of \$355 million over the 25-year planning period. It is anticipated that this program will fund approximately 250 miles of new sidewalks and 250 crossings at arterials.

### **ADA IMPLEMENTATION - \$30M**

This program will fund improvements for compliance with the Americans with Disabilities Act (ADA) standards. In 2012, the City conducted an ADA Compliance Assessment in preparation for the Democratic National Convention. The report revealed deficiencies in the accessibility and usability of City services, programs and activities, and recommended actions to comply with ADA standards.

This program will sponsor projects that ensure citizens have equal access to City facilities, outdoor spaces, public right-of-way and effective communication. Specifically, the ADA Program will enable the City to develop a system-wide inventory to identify barriers to ADA compliance (referred to as Self-Evaluation); prioritize the necessary improvements and create a financially feasible schedule for retrofits (referred to as the Transition Plan); implement improvements defined in the Transition plan; and maintain an ongoing inventory of improvements.

The TAP recommends a funding level of \$30 million over the 25-year planning period.

### **SAFE ROUTES TO SCHOOL PROJECTS - \$20M**

This program provides funding to implement pedestrian and bicycle facility improvements in school areas. As part of the development of the City's sidewalk policy, it was found that numerous school areas lack sufficient sidewalks. This program would support planning efforts to improve pedestrian and bicycle networks in school areas and surrounding neighborhoods.

The TAP recommends a funding level of \$20 million over the 25-year planning period. It is anticipated that this program would implement projects at 20 schools.







## ***BICYCLE TRAVEL***

### **BICYCLE AND PATHWAY PROJECTS - \$100M**

This program provides funding to implement the projects and initiatives identified in the Charlotte BIKES Plan. These projects and initiatives address the six essential elements for making a bicycle-friendly city, including engineering, education, encouragement, enforcement, evaluation/planning and equity.

Engineering projects make up the majority of the proposed funding, with the goal to develop a safe, comfortable and convenient network of bicycle facilities that aid and encourage cycling for people of all ages, abilities and interests. Engineering projects will include:

- Construction of bicycle lanes and protected bicycle facilities;
- Implementation of a bicycle wayfinding system;
- Construction of bicycle boulevard treatments;
- Installation of pavement markings such as shared lane and green lane markings;
- Installation of bicycle-specific signal detection;
- Construction of bicycle-pedestrian connectivity projects; and
- Construction of shared-use paths where feasible and appropriate.

This program also provides funding for the bicycle program to implement numerous initiatives under the education, enforcement, evaluation/planning and equity components of bicycling, such as:

- Providing bicycle rack parking;
- Supporting bicycle education classes through equipment and staffing;
- Producing and marketing bicycle encouragement events such as Bike! Charlotte;
- Developing and publishing educational and encouragement materials such as the Charlotte Cycling Guide; and
- Measuring bicycle use through dedicated bicycle/pedestrian counting equipment.

The TAP recommends a funding level of \$100 million over the 25-year planning period. It is anticipated that this program will add approximately 250 miles of bicycle facilities to the City's emerging bicycle network and 60-80 bike/ped connections.







## PLACEMAKING

### NEIGHBORHOOD LIVABILITY - \$120M

This program would fund improvements to the physical elements installed within and along the street right-of-way that impact its usability, functionality, appearance and identity. Good streetscapes enhance the community environment by providing access to land uses, locations for social interaction, and sites for locating and maintaining infrastructure and amenities.

This program also provides funding for new traffic control devices or other “traffic calming” improvements, such as speed humps and traffic circles. Need is determined based on neighborhood requests to control travel speeds through neighborhoods.

The TAP recommends a funding level of \$120 million over the 25-year planning period. It is anticipated that this program will fund approximately 20-25 streetscape/pedscape projects and 100-150 traffic calming/placemaking projects.

### AREA CAPITAL PLANS - \$20M

This program provides funding to implement improvements specified in adopted Area Plans. CDOT staff has been involved in the Charlotte- Mecklenburg Planning Department Area Plan process in the past, which has allowed staff to identify both short-term and long-term transportation improvements within areas. Currently, there is no funding source to implement many of the transportation recommendations in Area Plans.

Staff recommends allocating funds for this program so that staff can work with Area Plan stakeholders to prioritize near-term improvements in the study area and move forward to implement these improvements. The recommended transportation improvements would help sustain, stabilize and enhance neighborhoods by providing a more efficient and safer multimodal transportation system within Area Plan locations.

The TAP recommends a funding level of \$20 million over the 25-year planning period. It is anticipated that this program will fund projects in 20 areas covered by adopted Area Plans.

### CENTERS AND CORRIDORS IMPLEMENTATION: CORRIDORS - \$140M

This program will provide funding for station area infrastructure upgrades for the remaining transit corridors. Building on work completed for the South Corridor Infrastructure Program (SCIP) and Northeast Extension Corridor Infrastructure (NECI), station areas will be examined based on the types of infrastructure improvements needed to make the areas more accessible.

The TAP recommends a funding level of \$140 million over the 25-year planning period. It is anticipated this program will fund station area projects in two rapid transit corridors.

### CENTERS AND CORRIDORS IMPLEMENTATION: CENTERS - \$50M

This program will fund transportation improvements within Activity Centers as defined by the Centers, Corridors and Wedges Growth Framework. An emphasis will be placed on alternative transportation improvements to make the Activity Center more bicycle- and pedestrian-friendly, as well as more economically competitive and livable. An example would be the study currently underway in the South Park area. By focusing on these Activity Centers, internal vehicle trips and vehicle miles of travel may be reduced due to the provision of alternative transportation facilities and complementary mixture of land uses.

The TAP recommends a funding level of \$50 million over the 25-year planning period. It is anticipated that this program would fund projects in five mixed-use activity centers.







## ***PRESERVE OPPORTUNITIES***

### **ADVANCE PLANNING AND RIGHT-OF-WAY ACQUISITION - \$115M**

This program would provide funding to prepare design/preliminary engineering for specified future projects so better cost estimates can be prepared and included in future Community Investment Plans (CIP). These improved cost estimates would lead to fewer cost overruns. This program would also allow the City to purchase right-of-way for future projects so opportunities are not lost prior to the project's inclusion in the CIP.

The TAP recommends a funding level of \$115 million over the 25-year planning period.

### **PUBLIC - PRIVATE PARTICIPATION - \$40M**

During the development process, opportunities arise to have a project improved beyond what can normally be required from a developer. This program allows developers and the City to cost-share in these improvements. Need is based on proceeding with road improvements where development is occurring, so that thoroughfares are developed in a timely manner and in accordance with their planned alignment.

The TAP recommends a funding level of \$40 million over the 25-year planning period. It is anticipated this program will leverage these funds to create better projects.

### **STATE TRANSPORTATION PARTICIPATION - \$40M**

This program provides funding to review the planning and design of State highway projects and to ensure that sidewalks, landscaping, and other amenities are constructed as part of a State projects and conform to City standards. Currently, NCDOT will only construct sidewalks if requested by the City, and if the City agrees to contribute 50 percent of the cost of construction. The need for this program is based on City Council's policy that states the City will participate in State road projects when significant benefits to local pedestrian and vehicular traffic can be realized.

The TAP recommends a funding level of \$40 million over the 25-year planning period. It is anticipated this program will leverage these funds to create better projects.







# CHAPTER 5: FINANCING THE TAP

**M**oving a plan from concept to reality requires both a significant commitment and sufficient funding to deliver the plan's recommended programs and projects. The transportation programs and projects described in the 25-year TAP Expenditure Plan total \$5.1 billion. This chapter examines how transportation projects have been funded in Charlotte over the past 50 years and discusses existing and potential revenue sources for funding the TAP.

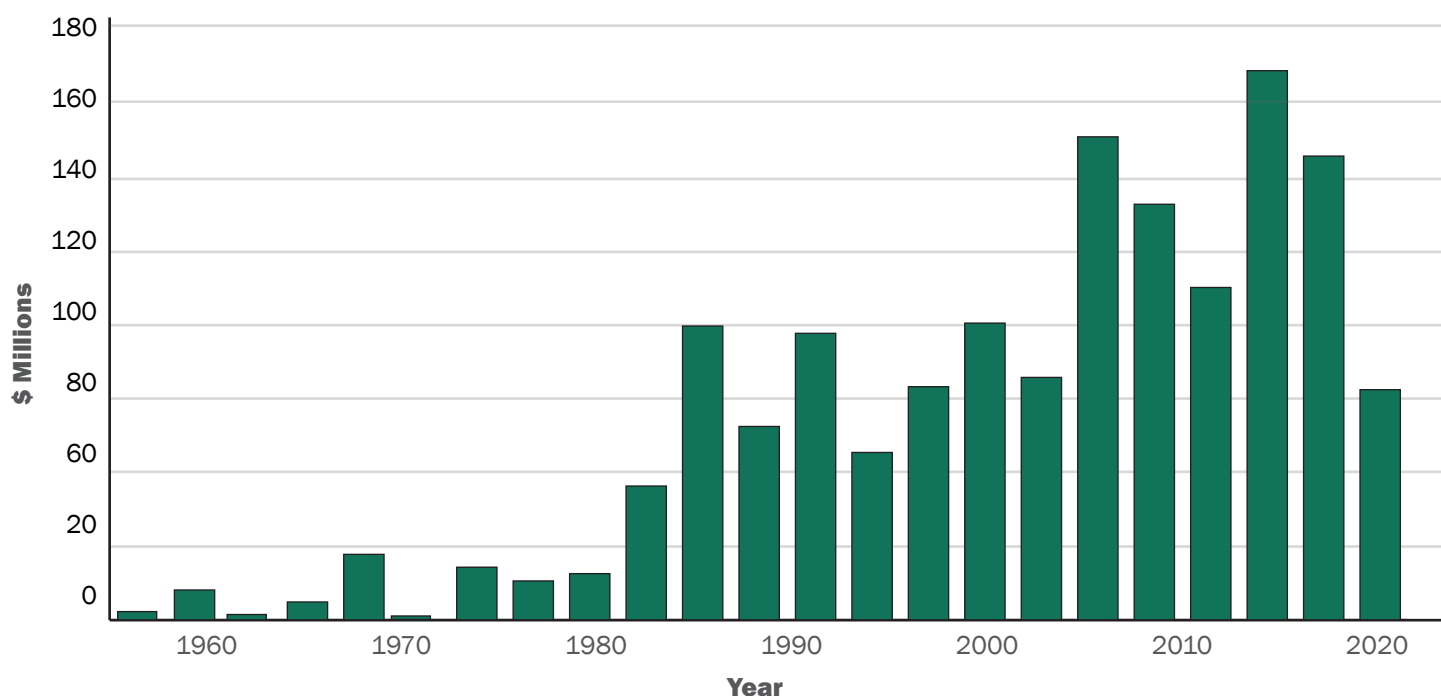
## HOW HAVE TRANSPORTATION PROJECTS BEEN FUNDED IN THE PAST?

For over 50 years, the City of Charlotte has been using voter approved bonds to invest in transportation programs and projects, backed by property tax- funded revenues. A property tax increase in 2013 is projected to generate enough revenue to issue transportation bonds in 2016, 2018 and 2020. Figure 14 summarizes the history of transportation bonds in Charlotte.

The City has also relied on Powell Bill funds from the State. Powell Bill funds are allocated to incorporated municipalities, per North Carolina General Statute (136-41.1 through 136-41.4), to fund street maintenance activities. In Charlotte, Powell Bill funds do not cover the entire cost of street maintenance, and are supplemented by City funds. Recent legislation may affect the amount of Powell Bill funding provided to local municipalities and may require a greater share of street maintenance to be funded by the City.

North Carolina's new Strategic Transportation Investments law (STI), passed in 2013, changed the method of how NCDOT allocates funding for transportation infrastructure. The 2016-2025 State Transportation Improvement Program (STIP), developed under the 2013 STI law, identifies which projects will receive funding over the next 10 years. The latest STIP has provided funding for several freeway projects in the Charlotte region. This TAP Update assumes that the State would continue to fund some of the major arterial projects identified in the TAP.

**Figure 14. Transportation Bond History**





## WHAT ARE THE EXISTING REVENUE SOURCES?

Existing revenue sources assumed as part of the TAP Update include Powell Bill and General Funds, State and Federal transportation funds, Community Investment Plan funds based on 2016, 2018, and 2020 bonds, and future bonds beyond 2020.

- 1. Projected revenues from Powell Bill & General Fund** – Staff has estimated that over the next 25 years, approximately \$277 million from the State's Powell Bill and the City's General Fund will be allocated to street resurfacing.
- 2. Projected State and Federal revenues** – Staff has estimated that approximately \$700 million in State and Federal transportation funds could be allocated to Charlotte over the next 25 years to fund arterial projects within the TAP's Complete Streets Program. These projects would have to be included in the upcoming Metropolitan Transportation Plan and submitted through the Strategic Transportation Investments (STI) prioritization process for eventual inclusion in a future State Transportation Improvement Plan (STIP).
- 3. Projected revenues from the Community Investment Plan (CIP)** – Based on the proposed City bonds (2016, 2018, 2020), staff has estimated that approximately \$400 million will be spent on transportation programs and projects identified in the TAP.
- 4. Projected revenues from the continuation of transportation bonds** – Staff has assumed that transportation bonds will continue to provide a source of funding in the future, as they have historically done so, at a rate of approximately \$80 million per year. Based on this assumption, staff has estimated that City bonds (beyond 2020), could fund approximately \$1.6 billion in transportation programs and projects identified in the TAP.

## WHAT IS THE PROJECTED FUNDING GAP BASED ON EXISTING REVENUES?

The four existing revenues sources discussed above do not require authorization or enabling legislation from the North Carolina General Assembly. These sources of revenues exist today and have been assumed to continue to exist into the future. Staff estimates that existing revenues will provide approximately \$2.97 billion for the expenditure categories outlined on pages 99-115.

Up to this point, the analysis has been based on a 25-year time frame for expenditures and revenues. However, for the remainder of this analysis, staff will present information about 20 years of expenditures. The reasons for this shift are as follows:

- New funds from City bonds are expected to become available after 2020, the time frame of the current Community Investment Plan.
- Spending funds for the construction of arterial and intersection projects will require 4-5 years of "ramping up" time. During this time, staff and consultants will complete pre-construction activities – planning, design, right-of-way acquisition and utility relocation – for a number of priority projects.
- The City cannot spend funds faster than revenues will allow.

Over the years, the City of Charlotte has been quite successful in securing voter-approved bonds to fund transportation programs and projects. Such bonds are repaid through the City's property tax. While an important source of funding, keeping pace with growth will require more than a bonds-only approach. Over time, bond-funded capital investment programs have not been able to keep up with population growth and related demands on the City's transportation facilities. Further, the City's reliance on voter-approved bonds creates uncertainty about future funding available for transportation projects, which presents problems for long-term planning.



Figure 15. Existing Revenues and Funding Gap

<b>Funding Sources</b>	<b>Amount</b>
<b>Existing Sources</b>	
Powell Bill & General Fund	\$277 Million
State and Federal revenues	\$700 Million
Projected revenues from the CIP	\$400 Million
Projected revenues from transportation bonds (beyond 2020)	\$1.6 Billion
<b>Total Funding</b>	<b>\$2.97 Billion</b>
<b>Funding Gap Based on Existing Sources</b>	
20 Years of Expenditures	\$4.1 Billion
Total Funding from Existing Sources	\$2.97 Billion
<b>Funding Gap with Existing Sources</b>	<b>\$1.13 Billion</b>

The results of applying existing revenues sources to the likely expenditures are presented in Figure 15. At the end of the 25-year period, the funding gap, based on existing revenues, would be approximately \$1.1 billion or 20% of the recommended expenditures.

## WHAT ARE POTENTIAL SOURCES OF NEW REVENUES TO CLOSE THE FUNDING GAP?

The following section describes additional funding sources that could be considered by the City to reduce the funding gap projected from existing revenue sources. Additional funding sources include recommendations by the Committee of 21 and a review of taxes and fees levied by other cities and states.

## WHAT DID THE COMMITTEE OF 21 RECOMMEND?

First convened in May 2008, the Committee of 21 was tasked with examining ongoing transportation needs, identifying long-term funding options and advocating for proposed funding sources. After considering a wide range of funding options, along with estimates of potential revenues associated with each option, the Committee recommended four main transportation revenue sources for bridging the funding gap projected in the 2006 Transportation Action Plan. These sources include increasing the vehicle registration fee, dedicating a half-cent sales tax to roadway improvements, adding tolls on interstates, and implementing a vehicle miles travelled fee. Both the vehicle registration fee and half-cent sales tax would require State approval, while adding tolls on interstates and implementing a vehicle miles traveled fee would require State and Federal approval.

## HOW ARE OTHER CITIES AND STATES FUNDING TRANSPORTATION IMPROVEMENTS?

In addition to reviewing recommendations by the Committee of 21, staff surveyed how peer cities are funding transportation improvements today. After a review of peer cities (see Figure 16 on page 120), potential revenues were calculated for property tax, sales tax, payroll tax, transportation impact fees, transportation utility fees, gas taxes and vehicle registration fees (see Figure 17 on page 122). Each revenue option lists the assumptions used in the calculation. These revenue calculations do not represent a recommendation from CDOT staff. Any possible funding recommendation would likely consist of some combination of revenue sources and rates.



## Property Tax

Property taxes are typically the largest source of revenue for municipalities. Property taxes may be allocated to capital funding through the general fund or dedicated to capital or bond issues through a separate ad valorem property tax levy.

A property tax offers a broad based revenue stream. However, property tax is not charged specifically to motorists. Charlotte would not require legislative authority to raise the property tax rate. A 1 cent property tax increase would generate approximately \$9 million annually in Charlotte. The TAP assumes the City will continue to use transportation bonds in the future backed by adjusted property tax rates.

## Sales Tax

Sales taxes are a widely-used revenue source and are typically used to support the general fund in municipalities. Some cities have dedicated sales taxes for transportation improvements, depositing such revenue into segregated transportation fund accounts for the construction and maintenance of transportation facilities. Local sales taxes are part of the general fund revenue mix in cities such as Austin, Atlanta, Seattle, San Diego and Fort Worth. In Charlotte, a one-half cent local sales tax is currently used to fund transit investments through Charlotte Area Transit Systems (CATS).

A sales tax offers a broad based revenue stream and voter approval denotes support. However, a sales tax is not charged specifically to motorists and Mecklenburg County already has one of the highest sales tax rates in the State. Charlotte would require legislative authority to raise the sales tax rate.

This calculation assumes that a county wide one-half cent sales tax (generating approximately \$81 million annually) would be enacted with the proceeds being distributed by population. Charlotte currently makes up 83.5% of Mecklenburg County's population. A one-half cent sales tax would generate approximately \$68 million annually in Charlotte.

**Figure 16. Peer Cities Transportation Revenue Sources**

City	Property Tax	Sales Tax	Payroll Tax	Impact Fee	Vehicle Registration Fee	Gas Tax (Flat)
Atlanta, GA	X	X		X		
Austin, TX		X				
Charlotte, NC	X	X			X	
Dallas, TX	X	X				
Denver, CO	X	X				
Fort Worth, TX	X	X		X		
Indianapolis, IN	X		X			
Minneapolis, MN	X	X				
Nashville, TN	X	X				
Orlando, FL	X			X		X
Phoenix, AZ				X	X	X
Portland, OR	X			X		
Raleigh, NC	X	X		X		
San Diego, CA	X	X		X		X
San Jose, CA	X	X		X	X	X
Seattle, WA	X	X			X	X
Tampa, FL	X			X		X



## **Payroll Tax**

Payroll taxes are a form of income tax on all employees working within a jurisdiction. A payroll tax offers a constant revenue stream, and can be a good option when there is a large stream of nonresidents working in a city. A potential downside to this tax is that it could make Charlotte less competitive in attracting and retaining jobs. Charlotte would require legislative authority to levy such a tax.

There are approximately 675,000 people working within the City of Charlotte's sphere of influence. The average salary within the City is \$31,556. Assuming a 0.5% payroll tax rate, an individual making an average salary of \$31,556 would pay approximately \$157.78 per year or \$3.03 per week in payroll taxes. A 0.5% payroll tax would generate approximately \$107 million annually in Charlotte.

## **Transportation Impact Fee**

Impact fees are one-time charges to developers and builders. Impact fees are determined based on trip generation rates of land use, and are specified in the local city or county's adopted impact fee schedule. Impact fee revenues are used to pay for infrastructure improvements to support the demand for transportation facilities generated by new development. Impact fees are based on the principle that new growth areas should be required to pay a pro rata share of the costs.

A transportation impact fee can be used to alleviate the impacts of growth, however impact fees are narrow in their base of payers and are susceptible to the development cycle. Charlotte would require legislative authority to implement an impact fee.

Assuming a fee schedule cited in the most recent update of the National Impact Fee Survey for Roads, by Duncan Associates, and applying it to Charlotte's 2015 building permit data, a transportation impact fee would generate \$30 million annually in Charlotte.

## **Transportation Utility Fee**

A transportation utility fee is a charge to property owners for access to the road system. Utility fees are levied upon property owners based on factors such as motor vehicle trip generation estimates, the number of parking spaces, the number of employees, front footage or a flat fee, depending on land use.

## **Transportation Utility Fee Cont'd**

A transportation utility fee offers a broad-based revenue stream and a direct connection between payers and beneficiaries. However, one downside of requiring a transportation utility fee is that it could possibly make Charlotte less competitive in attracting and retaining jobs and residents. Charlotte would require legislative authority to implement this fee.

Assuming Charlotte adopted a fee schedule similar to Austin Texas, a transportation utility fee would generate \$65 million annually based on Charlotte's existing land use data.

## **Vehicle Registration Fee**

Many states provide authority to local governments to levy local vehicle registration fees that can be used for local transportation needs.

A vehicle registration fee offers a broad based revenue stream and a strong connection between payers and beneficiaries. However, a downside of vehicle registration fees is that Charlotte already charges the maximum fee allowed under State law. Charlotte would require legislative authority to raise the vehicle registration rate.

Assuming a doubling of the \$30 fee, the vehicle registration fee would generate \$18 million annually in Charlotte, based on approximately 600,000 registered vehicles in Charlotte.

## **Gas Tax (Flat Rate)**

The second method for charging a gas tax is using a flat rate per gallon. This method has the advantage of being charged specifically to motorists, but the disadvantage of being less sustainable over time and not being indexed for price inflation. Charlotte would require legislative authority to implement a flat rate-based motor fuel tax.

Based on the volume of motor fuel sold in Charlotte, a flat rate-based motor fuel tax of one cent/gallon would generate approximately \$4 million annually in Charlotte.



## Gas Tax (Percentage)

In general, gas taxes are an excise tax levied on a per-gallon basis. Gas taxes are widely used by State governments to fund transportation, however only 15 states currently authorize local-option gas taxes. There are two methods for charging a gas tax. The first method is to apply a percentage-based tax rate.

The advantage of a percentage-based tax rate is that revenue changes as the gas price changes, indexing the revenues to price inflation. It is also charged specifically to motorists. A downside is that as automobiles have become more fuel-efficient (e.g. hybrids and electric vehicles), the gas tax has become a less sustainable revenue source. Charlotte would require legislative authority to implement a percentage-based motor fuel tax.

Based on the volume of gas sold in Charlotte, a percentage-based motor fuel tax of 1% would generate approximately \$8 million annually in Charlotte.

## SUMMARY

Figure 17 summarizes potential revenue sources that the City of Charlotte could consider in addressing the 25-year funding gap for this TAP Update. The potential revenue sources are based on a suite of options discussed throughout the Chapter. The City could potentially use one or more of these revenues options to bridge the funding gap. For example, if the City was to select one of the recommendations from the Committee of 21, a half-cent sales tax increase for transportation programs and projects, the City could eliminate the funding gap as presented in Figure 18.

The potential revenue sources discussed in this section are not available to North Carolina jurisdictions because specific authority to use them has not been granted by the General Assembly. Local units of governments thus are restricted in their ability to employ new sources of revenue for transportation or any other public purpose. Charlotte's ability to accommodate its anticipated growth requires a comprehensive transportation investment through 2040. The recommended programs and projects within the TAP Expenditure Plan will help to build, maintain, and operate a travel network with safe options for pedestrians, bicyclists, transit riders, and motorists in our rapidly growing city. Addressing legislative constraints will be critical to securing additional sources of revenue to fund unmet transportation needs identified in this Plan.

**Figure 17. Potential Revenues**

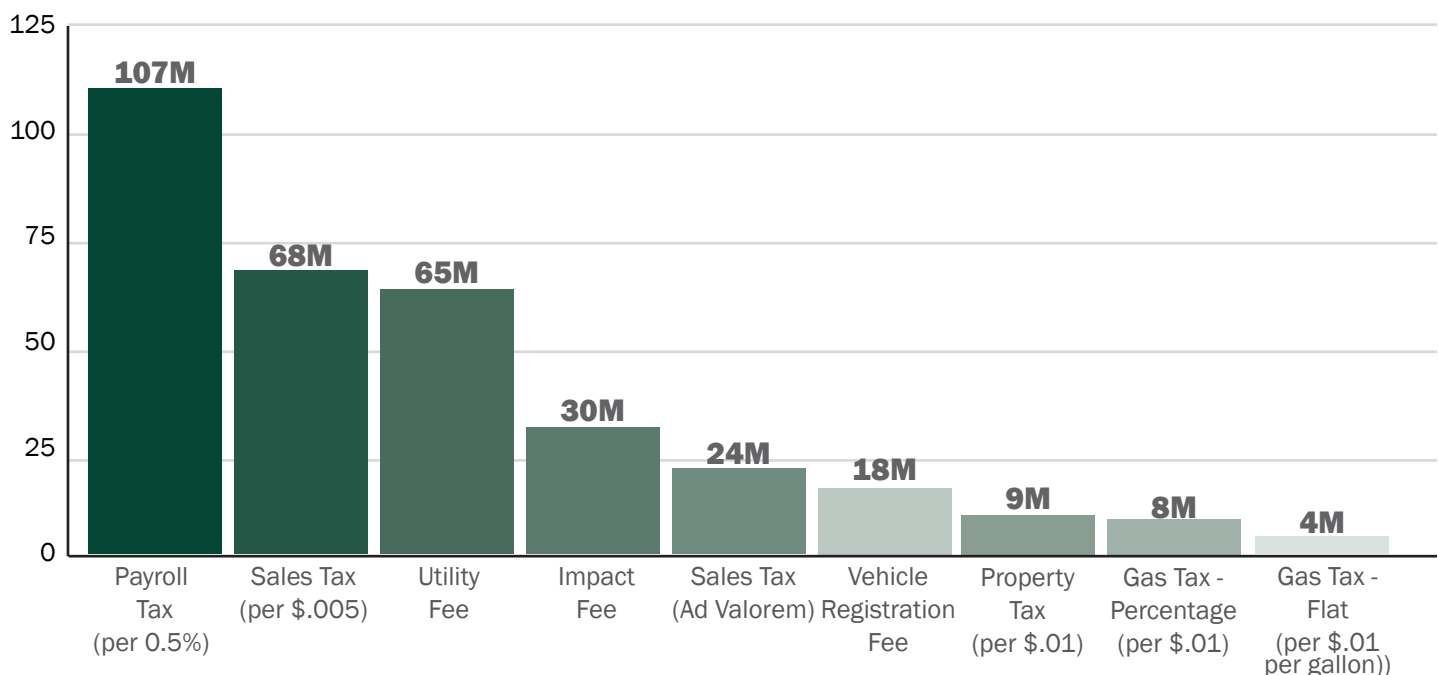




Figure 18. Bridging the Gap: Scenario Analysis

<b>Funding Sources and Gaps</b>	<b>Amount</b>
<b>Existing Sources</b>	
Powell Bill & General Fund	\$277 Million
State and Federal revenues	\$700 Million
Projected revenues from the CIP	\$400 Million
Projected revenues from transportation bonds (beyond 2020)	\$1.6 Billion
<b>Total Funding</b>	<b>\$2.97 Billion</b>
<b>Funding Gap Based on Existing Sources</b>	
20 Years of Expenditures	\$4.1 Billion*
Total Funding from Existing Sources	\$2.97 Billion
<b>Funding Gap with Existing Sources</b>	<b>\$1.13 Billion</b>
<b>Potential Additional Sources Recommended by the Committee of 21</b>	
Half-Cent Sales Tax Increase	\$1.36 Billion*
Doubling of Vehicle Registration Fee	\$360 Million*
<b>Total Additional Funding</b>	<b>\$1.72 Billion</b>
<b>Funding Gap Based on Existing Sources + Potential Additional Sources Scenarios</b>	
Scenario 1: Half-Cent Sales Tax Increase	No Gap
Scenario 2: Doubling of Vehicle Registration Fee	\$770 Million**

\* Assumes no new revenues for next five years. See page 118.

\*\* To close the funding gap for Scenario 2, additional sources would be needed. See pages 191-121.







TRACK  
2



TRACK  
2



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# APPENDIX A: ADOPTED FIGURES

- **APPENDIX A-1: USDG STREET CLASSIFICATION MAP (FUTURE CONDITIONS)**
- **APPENDIX A-2: EXISTING PEDESTRIAN FACILITIES MAPS**
- **APPENDIX A-3: EXISTING BICYCLE FACILITIES MAP**
- **APPENDIX A-4: CHARLOTTE THOROUGHFARE MAP**
- **APPENDIX A-5: EXISTING AND PROPOSED MAJOR COLLECTORS**
- **APPENDIX A-6: 2030 CORRIDOR SYSTEM PLAN**

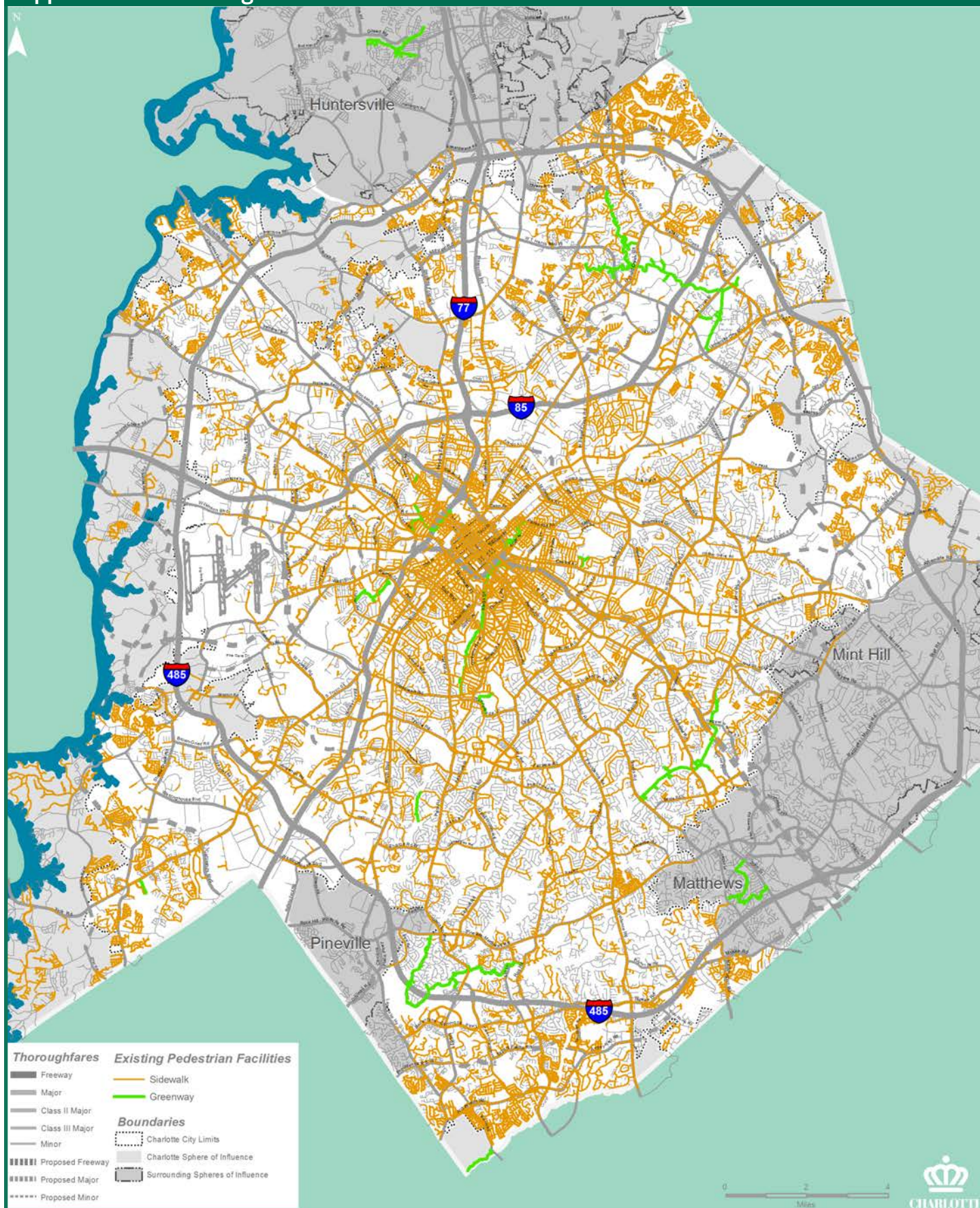


## Appendix A-1 : USDG Street Classifications (Future Conditions)



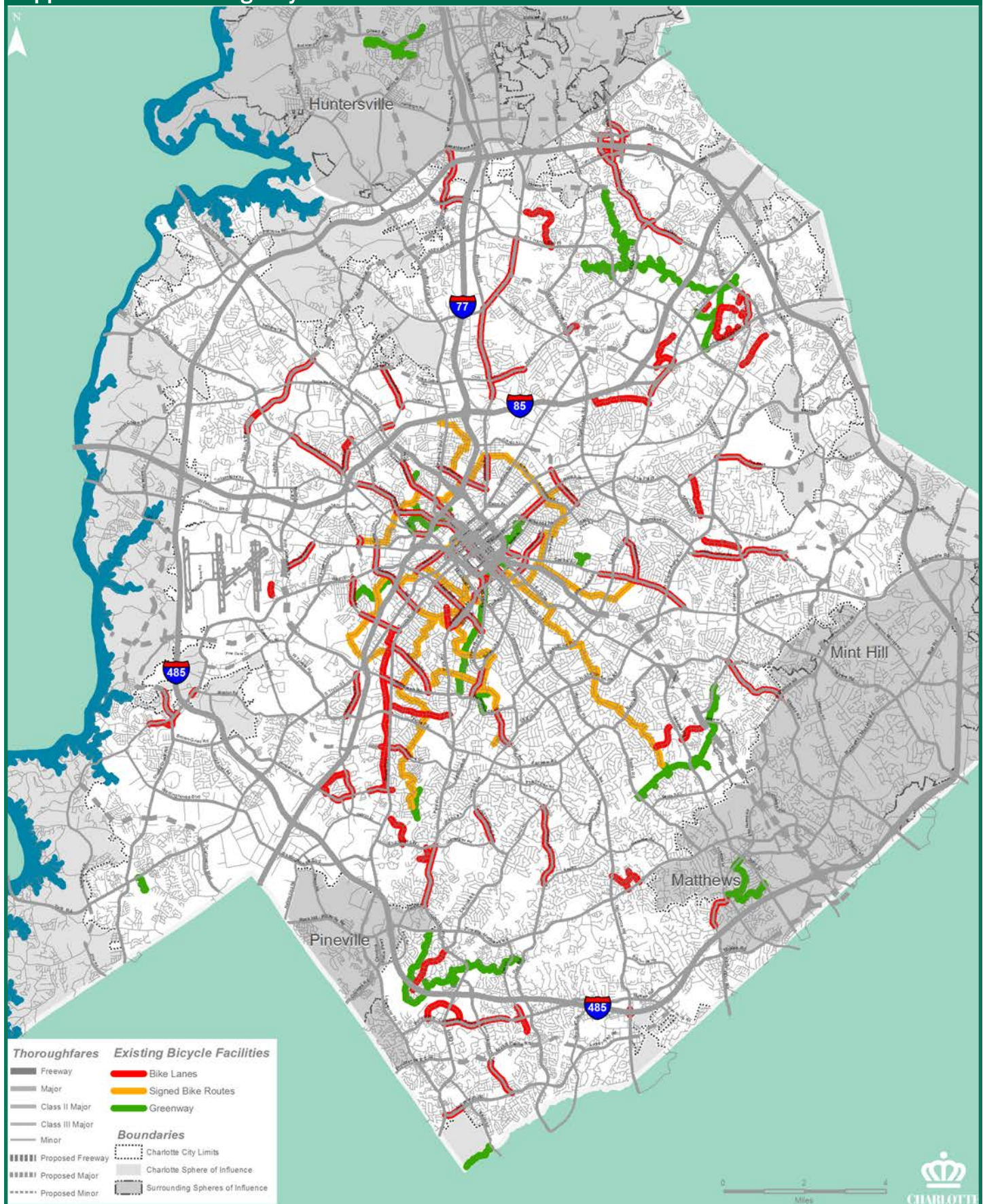


## Appendix A-2 : Existing Pedestrian Facilities



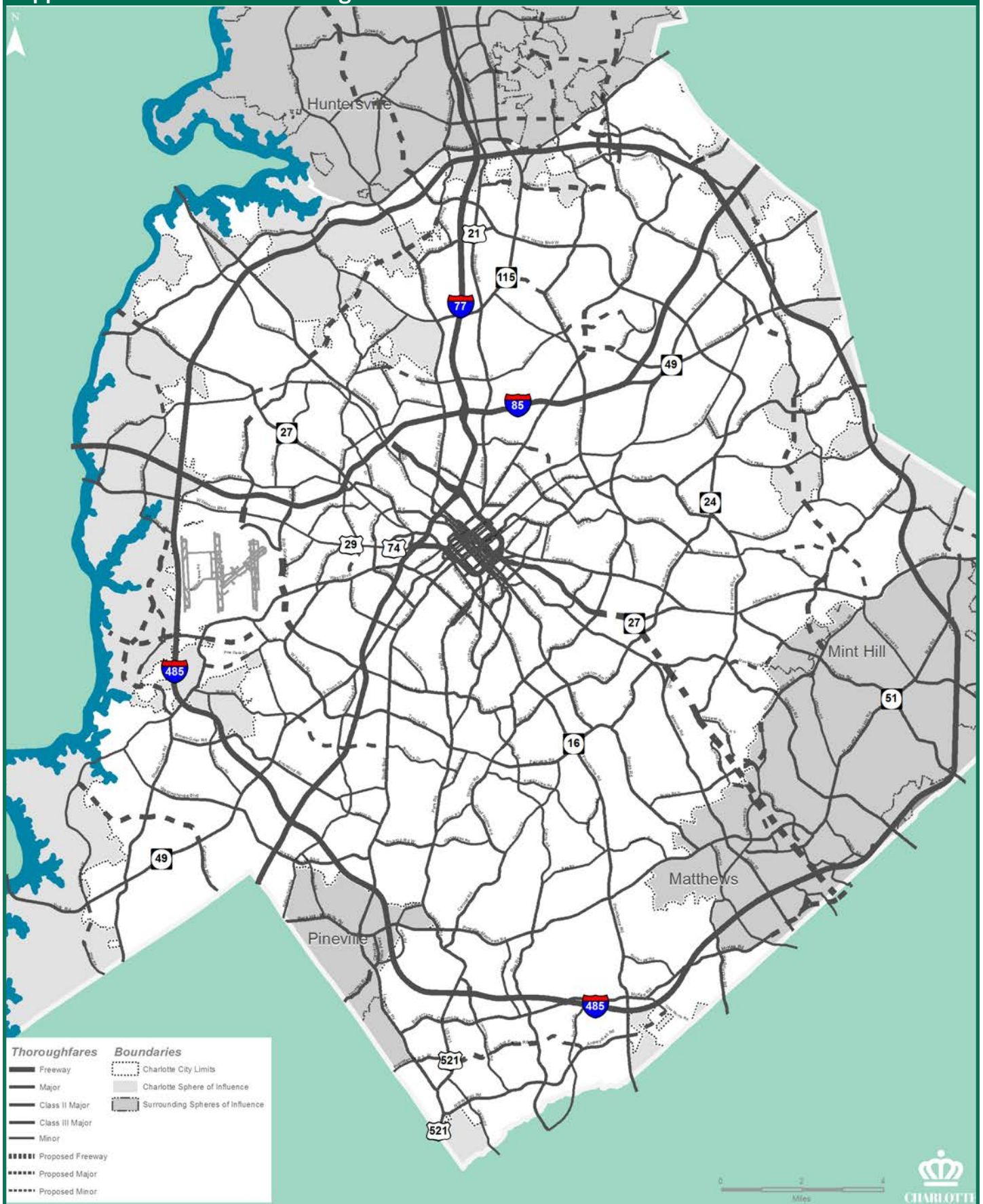


## Appendix A-3 : Existing Bicycle Facilities





## Appendix A-4 : Charlotte Thoroughfares



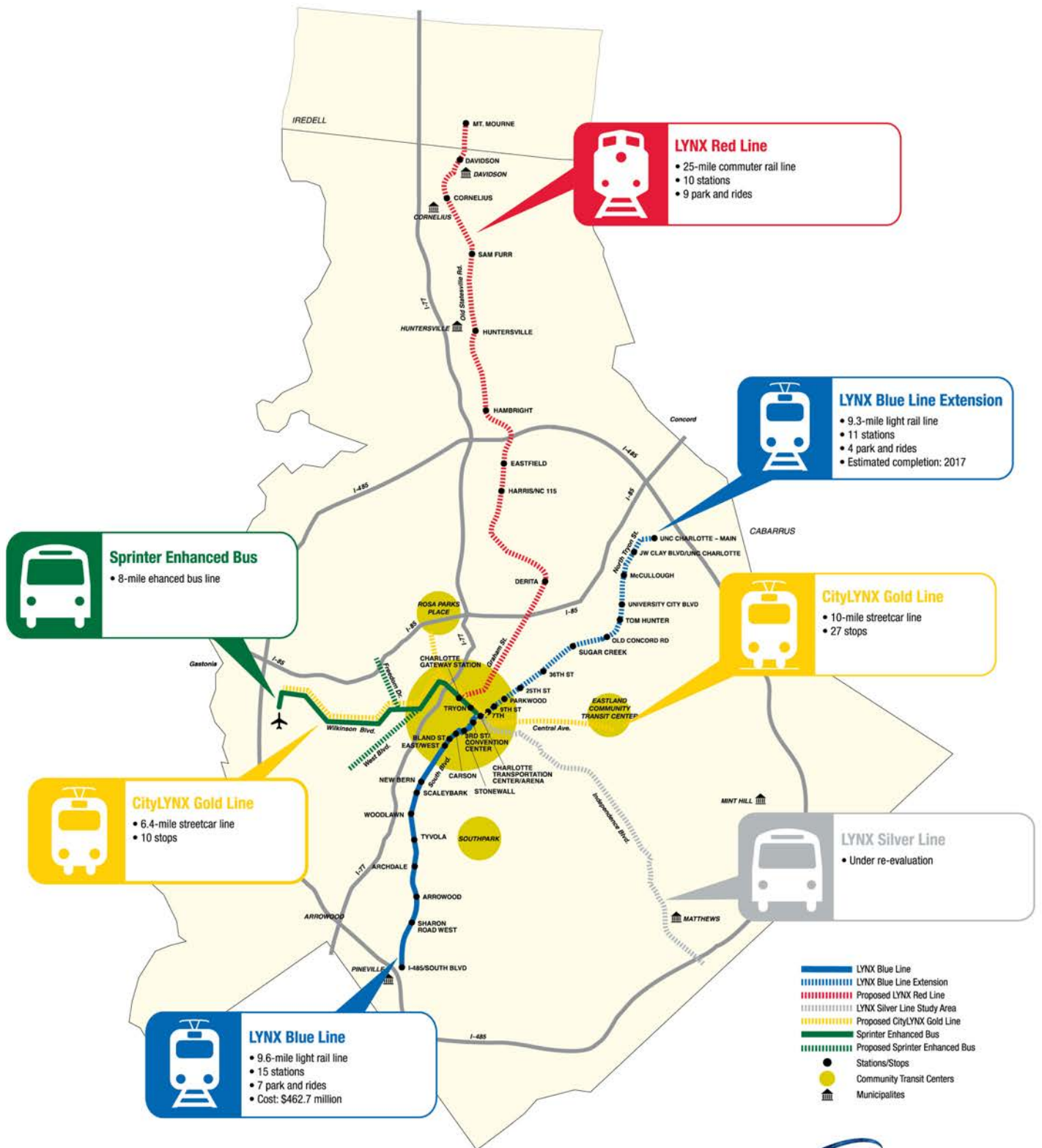


## Appendix A-5 : Existing and Proposed Major Collectors



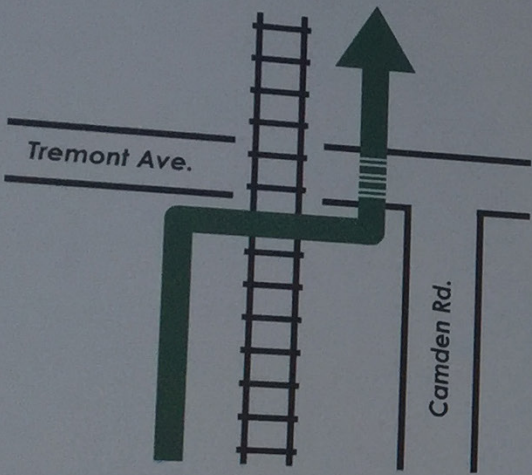


# LYNX SYSTEM MAP





# RAIL TRAIL CONTINUES



Rail Trail



CHARLOTTE





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# **APPENDIX B: RECOMMENDED TRANSPORTATION PROGRAM**

- **APPENDIX B-1: LOCALLY FUNDED TRANSPORTATION PROGRAMS AND IMPROVEMENTS LIST**
- **APPENDIX B-2: LOCALLY FUNDED ROADWAY PROJECTS (LISTED IN ALPHABETICAL ORDER)**
- **APPENDIX B-3: LOCALLY FUNDED ROADWAY AND INTERSECTION PROJECTS MAP**
- **APPENDIX B-4: TAP PRIORITIZATION CRITERIA FOR ROADWAY PROJECTS**



## Appendix B-1 : Locally Funded Transportation Programs and Projects

<b>Action Category</b>	<b>Outcome to be accomplished during 25-year TAP time frame</b>	<b>Expenditures</b>
<b>Maintenance</b>		
Street Resurfacing	Maintain 12-year resurfacing cycle	\$638,000,000
Sidewalk Maintenance	Replace 160 miles of sidewalk	\$16,000,000
Curb and Gutter Maintenance	Replace 100 miles of curb & gutter	\$11,000,000
	<i>Maintenance Total</i>	<i>\$665,000,000</i>
<b>Safety</b>		
Transportation Safety Projects and Strategies	Implement Vision Zero philosophy (engineering, enforcement, education) to reduce fatal crashes and serious injuries; Construct 40 projects that enhance the safety of motorists and other travelers	\$130,000,000
	<i>Safety Total</i>	<i>\$130,000,000</i>
<b>Technology</b>		
Traffic Control Device Upgrades	Replace equipment at existing signalized intersections (760), and install new equipment at additional 325 intersections; Upgrade Traffic Management Center technology; Replace signs and markings to meet higher visibility standard; Install Accessible Pedestrian Signal devices for visually impaired persons at 500 intersections; Upgrade signage and signals at 600 pedestrian crossings	\$100,000,000
Intelligent Transportation Systems	Improve traffic flow on arterials by using management and operations techniques including signal coordination, ITS deployment, and upgrading and replacing system components	\$92,500,000
Railroad Grade Crossings	Implement projects on priority locations of railroad grade crossings. Install new crossing infrastructure to implement "quiet zones"	\$73,000,000
Street Lighting	Install new streetlights on the 125 miles of thoroughfares not presently illuminated	\$20,000,000
	<i>Technology Total</i>	<i>\$285,500,000</i>
<b>Complete Streets</b>		
Major Street Projects	Construct 100 multimodal arterial roadway projects by adding travel lanes, bicycle facilities and sidewalks	\$2,500,000,000
Intersection Projects	Upgrade 40 intersections by adding lanes and crosswalks	\$330,000,000
Spot Capacity Projects	Construct 200 low-cost projects such as turn lanes, pedestrian refuge islands, and bicycle infrastructure	\$100,000,000
Bridges	Inspect city-maintained bridges (currently 208) every two years and make re-pairs as necessary; replace 10 bridges	\$88,000,000
	<i>Complete Streets Total</i>	<i>\$3,018,000,000</i>



## Appendix B-1 : Locally Funded Transportation Programs and Projects

Action Category	Outcome to be accomplished during 25-year TAP time frame		Expenditures
Walkability			
Sidewalk and Pedestrian Safety Projects	Construct 250 miles of new sidewalks and 250 crossings at arterials		\$355,000,000
ADA Implementation	Build ADA retrofit projects		\$30,000,000
Safe Routes to School Projects	Implement projects at 20 schools		\$20,000,000
	Walkability Total		\$405,000,000
Bicycle Travel			
Bicycle and Pathway Projects	Construct 250 miles of new bikeways and 60-80 bike/ped connections; Fund bicycle initiatives related to engineering, education, encouragement, enforcement, and evaluation.		\$100,000,000
	Bicycle Travel Total		\$100,000,000
Placemaking			
Centers and Corridors Implementation: Corridors	Complete station area projects in 2 rapid transit corridors		\$140,000,000
Neighborhood Livability Projects	Construct 100-150 traffic calming/placemaking projects; Construct 20-25 streetscape/pedscape projects		\$120,000,000
Centers and Corridors Implementation: Centers	Implement projects in 5 mixed-use activity centers		\$50,000,000
Area Plan Capital Projects	Implement projects in 20 areas with recent Area Plans		\$20,000,000
	Placemaking Total		\$330,000,000
Preserve Opportunities			
Advance Planning & Right-of-Way Acquisition	Prepare design/preliminary engineering for specified future projects and use advance acquisition to preserve parcels necessary for ROW		\$115,000,000
Public-Private Participation	Leverage public funds with private developers to create better projects		\$40,000,000
State Transportation Participation	Leverage public funds with State funds to create better travel networks, including railroad projects, sidewalks and street lighting		\$40,000,000
	Preserve Opportunities Total		\$195,000,000
	PROPOSED GRAND TOTAL		\$5,128,500,000



## Appendix B-2 : Locally Funded Roadway Projects

The 2016 TAP Expenditure Plan recommends funding to construct 100 multimodal arterial roadway projects by adding travel lanes, bicycle facilities and sidewalks. Based on three evaluation criteria (congestion, access to employment and safety), this list of 128 potential roadway locations was developed.

The locations described below provide a starting point for the City to provide roadway projects based on the most recent information on project feasibility and funding availability. This list will be updated to respond to the ever changing conditions of Charlotte's transportation network.

Project Name	Project Limits
Airport Parkway	Billy Graham Parkway to I-485
Albemarle Road (NC 24/ NC 27)	Central Avenue to Harris Boulevard
Albemarle Road (NC 24/ NC 27)	Circumferential Road to I-485
Albemarle Road (NC 24/ NC 27)	East WT Harris Boulevard to Circumferential Road
Archdale Drive	South Boulevard to Park South Drive
Ardrey Kell Road	Marvin Road to Tom Short Road
Ardrey Kell Road	US 521 to Marvin Road
Arrowood Road-Shopton Road Connector	Arrowood Rd to Shopton Road
Ballantyne Commons Parkway	Annalexa Lane to Williams Pond Lane
Beam Road	Yorkmont Road to South Tryon Street
Brevard Street	5th Street to 12th Street
Brevard Street	Stonewall Street to Trade Street
Brevard Street	Parkwood Avenue to Connector
Brookshire Freeway (NC 16)	I-77 to Hoskins Road
Caldwell Street	5th Street to 12th Street
Caldwell Street	12th Street to CSX Bridge
Carmel Road	Fairview Road to Colony Rd
Carowinds Boulevard Extension	South Tryon Street to Steele Creek Road
Choate Circle Realignment	Choate Circle to South Tryon Street
Church Street	Stonewall Street to I-277 WB Ramp
East Stonewall Street	South Caldwell Street to South McDowell Street
East WT Harris Boulevard	Idlewild Road to Albemarle Road
East WT Harris Boulevard (NC 24)	North Tryon Street (US 29) to University City Boulevard (NC 49)
East WT Harris Boulevard (NC 24)	University City Boulevard (NC 49) to The Plaza
East Woodlawn Road	Park Road to South Boulevard
Eastern Circumferential	Pence Road Extension to Albemarle Road
Eastern Circumferential	Albemarle Road (NC 24/27) to Lawyers Road
Eastfield Road	Prosperity Church Road to Cabarrus County Line
Eastfield Road	Alexandriana Road to Prosperity Church Road
Eastway Drive	Kilborne Drive to Sugar Creek Road
Elm Lane	Pineville-Matthews Road to Ballantyne Commons Parkway

\* Projects highlighted in dark green are expected to be recommended for funding through the 2045 Metropolitan Transportation Plan (MTP)



## Appendix B-2 : Locally Funded Roadway Projects

Project Name	Project Limits
Euclid Avenue Extension	East Morehead Street to Stonewall Street
Fairview Road	Carmel Road to NC 16 (Providence Road)
Fairview Road	Sharon Road to Carmel Road
Fifth Street Extension	McDowell Street to Kings Drive
Graham Street (US 29/NC 49)	I-277 to 6th Street
Hickory Grove Road	East WT Harris Boulevard to Pence Road Relocation
Hucks Road Extension	Statesville Road (US 21) to Northlake Center Parkway
Hucks Road Extension	Old Statesville Road (NC 115) to Statesville Road (US 21)
IBM Drive	Mallard Creek Road to Neal Road
Idlewild Road	Drifter Drive to Margaret Wallace Road
J. West Clay Boulevard	North Tryon Street to West WT Harris Boulevard
John Kirk Drive	University City Boulevard to Mallard Creek Church Road
Johnston Road (US 521)	Ballantyne Commons Parkway to State Line
Lancaster Highway	Carolina Place Parkway to Ballantyne Commons Parkway
Lancaster Highway	Providence Road West to Johnston Road
Lancaster Highway	Ballantyne Commons Parkway to Providence Road West
Lawyers Road	Albemarle Road to Lebanon Road
Mallard Creek Road	Prosperity Church Road to Breezewood Drive
Mallard Creek Road	West Sugar Creek Road to Graham Street Extension
McCullough Drive	North Tryon Street to West WT Harris Boulevard
McKee Road	Tilley Morris Road to Kuykendall Road
McKee Road	Kuykendall Road to Weddington Road
Mint Street	2nd Street to 6th Street
Mount Holly-Huntersville Road	Brookshire Boulevard to Oakdale Road
Mount Holly Road (NC 27)	I-485 to Belmeade Drive
Mulberry Church Road	Tuckaseegee Road to I-85
North Davidson Street	12th Street to Matheson Avenue
North Tryon Street (US 29/NC 49)	Old Concord Road to Tom Hunter Road
North Tryon Street (US 29/NC 49)	Brookside Lane to I-485
North Tryon Street (US 29/NC 49)	Matheson Avenue to East 36th Street
Old Concord Road	North Tryon Street to Newell-Hickory Grove Road
Old Concord Road	East WT Harris Boulevard to University City Boulevard
Park South Drive	Fairview Road to Park Road
Pineville-Matthews Road (NC 51)	I-485 to Rea Road
Pineville-Matthews Road (NC 51)	Providence Road to Sardis Road
Pineville-Matthews Road (NC 51)	Rea Road to Providence Road
Poplar Street	2nd Street to 6th Street
Prosperity Ridge Road (SE arc)	Johnston Oehler Road to Prosperity Church Road

\* Projects highlighted in dark green are expected to be recommended for funding through the 2045 Metropolitan Transportation Plan (MTP)



## Appendix B-2 : Locally Funded Roadway Projects

Project Name	Project Limits
Providence Road (NC 16)	Pineville-Matthews Road to Ballantyne Commons Parkway/McKee Road
Providence Road (NC 16)	Alexander Road to Pineville-Matthews Road
Providence Road (NC 16)	Ardrey Kell Road to Union County Line
Providence Road (NC 16)	Ballantyne Commons Parkway/McKee Road to Ardrey Kell Road
Providence Road West	South Carolina State Line to Johnston Road
Reames Road	Fred D. Alexander Boulevard to West WT Harris Boulevard
Reames Road	Lakeview Road to Sunset Road
Remount Road Extension	Greenland Avenue to Camp Green Street
Research Drive	David Taylor Drive to W WT Harris Boulevard
Ridge Road	Prosperity Church Road to Mallard Creek Road
Ridge Road Extension	Prosperity Church Road to Eastfield Road
Rocky River Road	Grier Road to Eastern Circumferential
Rocky River Road	WT Harris Boulevard to Grier Road
Rocky River Road	University East Extension to East WT Harris Boulevard
Rozzelles Ferry Road	Hovis Road to I-85
South Tryon Street (NC 49)	I-485 to Steele Creek Road
South Tryon Street (NC 49)	I-77 to Yorkmont Road
South Tryon Street (NC 49)	Yorkmont Road to Tyvola Road
South Tryon Street (NC 49)	West Arrowood Rd to I-485
South Tryon Street (NC 49)	Shopton Road to West Arrowood Road
South Tryon Street (NC 49)	Tyvola Road to Shopton Road
Sandy Porter Road	Brown-Grier Road to South Tryon Street
Scaleybark Road Complete Street Project	South Boulevard to Woodlawn Road
Sharon Amity Road	Providence Road to Randolph Road
Sharon Road	Quail Hollow Road to Park Road
Sharon View Road	Carmel Road to Old Providence Road
Shopton Road West	Berewick Commons Parkway to Westinghouse Boulevard
Statesville Road (US 21)	Harris Boulevard to Gilead Road
Steele Creek Road (NC 160)	I-485 to West Boulevard
Stonewall Street Extension	South Graham Street to South Cedar Street
Sugar Creek Road	Graham Street to NC 115-Sugar Creek Road Connector
Sunset Road	Oakdale Road to Beatties Ford Road
The Plaza	Barrington Drive to East WT Harris Boulevard
The Plaza	Parkwood Avenue to Matheson Avenue
Thirty Sixth Street	Atando Avenue to North Tryon Street
Tuckaseegee Road	Little Rock Road to Mulberry Church Road
Tyvola Road	South Tryon Street to I-77
Tyvola Road	Wedgewood Drive to Park Road

\* Projects highlighted in dark green are expected to be recommended for funding through the 2045 Metropolitan Transportation Plan (MTP)

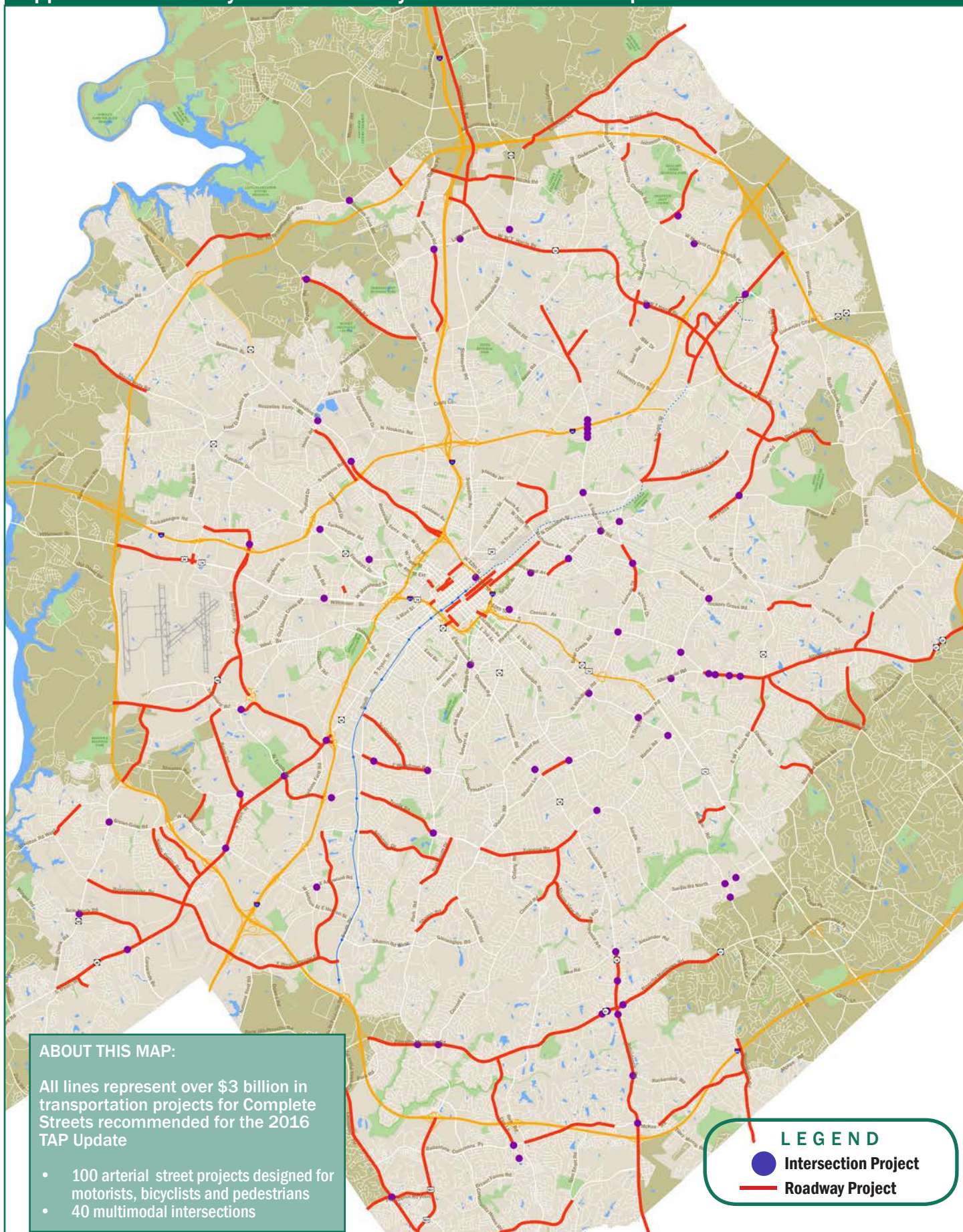


## Appendix B-2 : Locally Funded Roadway Projects

Project Name	Project Limits
Tyvola Road	South Boulevard to Wedgewood Drive
Village Lake Drive	Independence Boulevard to Monroe Road
West WT Harris Boulevard	I-485 to Mt Holly-Huntersville Road
West WT Harris Boulevard (NC 24)	I-77 to Sugar Creek Road
West WT Harris Boulevard (NC 24)	North Tryon Street to Sugar Creek Road
West Woodlawn Road	South Tryon Street to I-77
Weddington Road	I-485 to County Line
Westinghouse Boulevard	Nations Ford Road to South Boulevard
Westinghouse Boulevard	Steele Creek Road to South Tryon Street
Westinghouse Boulevard	South Tryon Street to Nations Ford Road
Westpark Drive Extension	Archdale Road to Westinghouse Boulevard
Whitehall Park Drive	Brown-Grier Road to South Tryon Street
Wilkinson Boulevard (US 29-74)	Little Rock Road to I-485
Wilkinson Boulevard/Airport Entrance Road Grade Separation	Grade Separation
Yorkmont Road	South Tryon Street to Tyvola Road

\* Projects highlighted in dark green are expected to be recommended for funding through the 2045 Metropolitan Transportation Plan (MTP)

## Appendix B-3 : Locally Funded Roadways and Intersections Map





## Appendix B-4 : TAP Project Prioritization Criteria - Roadways

The major arterial roadway projects within the Complete Streets category of the TAP were prioritized using a composite score made up of points from congestion, employment, and safety criteria.

Many roadway projects in the TAP would be eligible for submittal into the CRTPO's Metropolitan Transportation Plan (MTP) where they would compete for Federal and State funding with projects from other jurisdictions in the metropolitan planning area. The CRTPO's first tier of evaluation for projects includes the same criteria as the TAP (Congestion, Safety, and Accessibility to Employment Centers) but uses slightly different formulas for calculating points. These three criteria were chosen for the TAP to prioritize projects with multiple benefits and to inform what projects might also be competitive for Federal and State funds.

### CONGESTION

Projects are assigned congestion points using a volume-to-capacity ratio (V/C). V/C measures traffic congestion based on ratios of traffic counts (or projected volumes for new alignments) to the capacity of each road segment.

This criterion is based on the following 10-point scale shown in Table 1.

### EMPLOYMENT

Projects are assigned employment points based on the total number of jobs that are in Traffic Analysis Zones (TAZs) within a half-mile of each project. This criterion is based on the following 5-point scale.

This criterion is based on the following 10-point scale shown in Table 2.

### SAFETY

Projects are assigned safety points based on the number of crashes per mile for each segment. This criterion is based on a 5-point scale.

Table 1. Project Scoring: Congestion

V/C Ratio	Points
≥ 2.0	10
1.8	9
1.6	8
1.4	7
1.2	6
1.0	5
0.8	4
0.6	3
0.4	2
≤ 0.2	1

Table 2. Project Scoring: Employment

Number of Jobs	Points
≥ 80,001	5
60,001 - 80,000	4
40,001 - 60,000	3
20,001 - 40,000	2
10,001 - 20,000	1
≤ 10,000	0





DO NOT  
BLOCK  
INTERSECTION



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# **APPENDIX C: SUPPORTING DOCUMENTS**

- **APPENDIX C-1: THE TAP AND VARIOUS PLANNING EFFORTS**



## THE TAP AND THE CENTERS CORRIDORS AND WEDGES GROWTH FRAMEWORK

Charlotte developed a solid transportation and land use foundation in the initial 1994 Centers and Corridors growth strategy, which was updated and adopted as the Centers, Corridors and Wedges (CCW) Growth Framework in 2010. The CCW Growth Framework uses a simple and clear development pattern to provide a foundation for Charlotte's economic growth, while protecting its quality of life. By intensifying development within existing Activity Centers and key parts of Growth Corridors, consistent with area plans, the Centers, Corridors and Wedges approach helps to improve employment opportunities and housing choices and make the best use of existing infrastructure and transportation resources. This TAP Update includes policies and recommended transportation programs to support this growth strategy.

Charlotte needs a comprehensive transportation plan that identifies, plans, implements and monitors the transportation system to ensure that we are accomplishing the Centers, Corridors and Wedges vision as well as keeping pace with transportation demands. Through the Transportation Action Plan Update, Charlotte will further define, refine and implement transportation policy that is consistent with the Centers, Corridors and Wedges characteristics.

The TAP relies on two key growth policies being implemented:

- TAP Policy 1.1.2 - The City will encourage a minimum of 70% of new multi-family units, 75% of new office development and 75% of new total employment to be in Activity Centers and Growth Corridors, consistent with adopted area plans.
- TAP Policy 1.1.3 - The City will encourage a minimum of 63.5% of Charlotte residents to reside within ¼ mile of transit service.

## THE TAP AND OTHER TRANSPORTATION PLANS

The Transportation Action Plan (TAP) Update is the City's multimodal transportation plan. It sets Charlotte's overall transportation vision and recommended levels of transportation investments over the next 25 years. However, there are a number of other local and regional plans that relate to and complement the TAP.

### ***Charlotte Regional Transportation Planning Organization Efforts***

Regional transportation planning and project coordination is performed by the Charlotte Regional Transportation Planning Organization (CRTPO). This Federally required transportation planning organization prioritizes projects for Federal and State funding. The CRTPO is comprised of voting members from throughout the region, with the City of Charlotte comprising 31 of the 68 votes.

The CRTPO produces and adopts the Comprehensive Transportation Plan (CTP). The CTP consists of four maps that illustrate the current assessment of the travel networks for motorists, bicyclists, pedestrians, transit riders and freight. The CTP, as a long-range regional plan and compilation of segment-by-segment conditions, is a complement to the TAP.

As an assessment of current conditions and potential projects, the CTP feeds into CRTPO's Metropolitan Transportation Plan (MTP). The MTP is essentially the multimodal transportation plan for the entire Charlotte region, and defines the policies, programs and projects to be implemented over the following 25 years. The MTP is updated and adopted every four years.

The MTP is used to feed projects into the CRTPO and NCDOT's Transportation Investment Program (TIP), a 10 year look at anticipated capital investments by the CRTPO based on a clear set of short-term transportation priorities. The TIP is updated every two years.

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City of Charlotte staff participate in the development of CRTPO plans, including the CTP and MTP, and ensure that the City's vision is incorporated into the transportation vision for the entire region. In addition, the TAP's adopted policies are reflected in the assessment of travel networks in the CTP, as well as the priorities and specific project recommendations in the MTP.

### ***North Carolina Department of Transportation Planning Efforts***

NCDOT takes the lead in developing the State Transportation Improvement Program (STIP), which is a listing of projects to be completed within an upcoming 10 year work program. The CRTPO's TIP is included as part of the NCDOT's STIP. City of Charlotte staff, working in conjunction with CRTPO staff, is involved in the nomination of projects for scoring by NCDOT, and the application of local input points based upon its methodology. The NCDOT Strategic Prioritization Office of Transportation (SPOT) leads this process by providing oversight to MPOs, RPOs and Divisions throughout the State as well as scoring the projects.

### ***City of Charlotte Transportation Planning Efforts***

While the TAP sets the City's overall transportation vision and policies, other transportation planning efforts provide the details necessary to fulfill the multimodal vision of the TAP. The Urban Street Design Guidelines (USDG), adopted in 2007, is the implementation tool for the planning and design of Charlotte's streets. The USDG provides design guidance, from recommended block length spacing to sidewalk widths, to create context-sensitive complete streets.

The TAP Update recommends levels of investment and overall policies for walking and bicycling, while the Charlotte WALKS and Charlotte BIKES are the City's modal-specific plans. These plans reflect the overall vision of the TAP, but address the specific strategies necessary to create a walk- and bike-friendly City, respectively.