



June 2024

Greenville Metropolitan Transportation Plan

2050 Update 

DRAFT



Acknowledgments

On behalf of the project team, the Greenville Urban Area MPO thanks the diverse group of participants whose input was instrumental to creating the blueprint for a safe, multimodal, and interconnected transportation system for the region. The Greenville 2050 Metropolitan Transportation Plan reflects the collaborative efforts of the public, stakeholders, local staff and officials, the North Carolina Department of Transportation (NCDOT), the Federal Highway Administration (FHWA), and the steering committee. The efforts of everyone are greatly appreciated.

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Photos throughout the document provided courtesy of Aaron Hines, City of Greenville photographer.



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Chapter 1

Introduction & Plan Overview



Introduction

The Greenville Metropolitan Transportation Plan (MTP) is the 2050 plan update for the Greenville Urban Area Metropolitan Planning Organization (GUAMPO). It defines the vision for creating a mode-inclusive, regional transportation system that accommodates the current and future mobility needs of its citizens through the identification of projects, policies, and action steps. The plan acknowledges that transportation is a critical component of daily life that residents and visitors rely on for access to education, health care, jobs, and entertainment throughout the region.

How is the plan used?

The Greenville MTP will serve as a blueprint for guiding transportation investments and directing federal, state, and local dollars toward projects that the community needs and values.

On a broader level, the MTP is governed by the Infrastructure Investment and Jobs Act (IIJA), otherwise known as the Bipartisan Infrastructure Law (BIL). This federal transportation legislation preserves the following federal planning factors established in the previous legislation referred to as the Fixing America's Surface Transportation Act, or FAST Act:

- ▶ Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
- ▶ Increase the safety of the transportation system for motorized and non-motorized users
- ▶ Increase the security of the transportation system for motorized and non-motorized users
- ▶ Increase the accessibility and mobility of people and freight
- ▶ Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns
- ▶ Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
- ▶ Promote efficient system management and operation
- ▶ Emphasize the preservation of the existing transportation system
- ▶ Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation
- ▶ Enhance travel and tourism

In addition, the IIJA introduced new or reinforced areas of focus for consideration within the metropolitan transportation plan:

- ▶ Improve the environmental resiliency of the transportation system
- ▶ Reduce carbon emissions from transportation
- ▶ Progress equity in the transportation planning process by not disproportionately burdening historically marginalized groups and communities
- ▶ Consider the link between the role of transportation and housing
- ▶ Promote transportation technology in metropolitan planning

Planning Process

How people move through their environment is a key factor for the success of any urban area. It is important to remember that transportation includes not just road and vehicular travel but biking, walking, public transit, freight, and any other method that one might use to move people or goods from one place to another.

What's in the plan?

The following describes the chapters included in this plan and the content included within each:

Chapter 1 – Vision and Framework

- ▶ Chapter 1 outlines the framework of the plan and introduces the planning process.

Chapter 2 - Public Engagement

- ▶ Chapter 2 provides an overview of the public engagement process.

Chapter 3 – Existing Conditions

- ▶ Chapter 3 presents a review of existing conditions including a review of demographics and existing transportation assets.

Chapter 4 – Multimodal Recommendations

- ▶ Chapter 4 outlines the development of bicycle, pedestrian, and transit projects identified through the MTP, building on the currently adopted Greenville Active Transportation Plan.

Chapter 5 – Roadway Recommendations

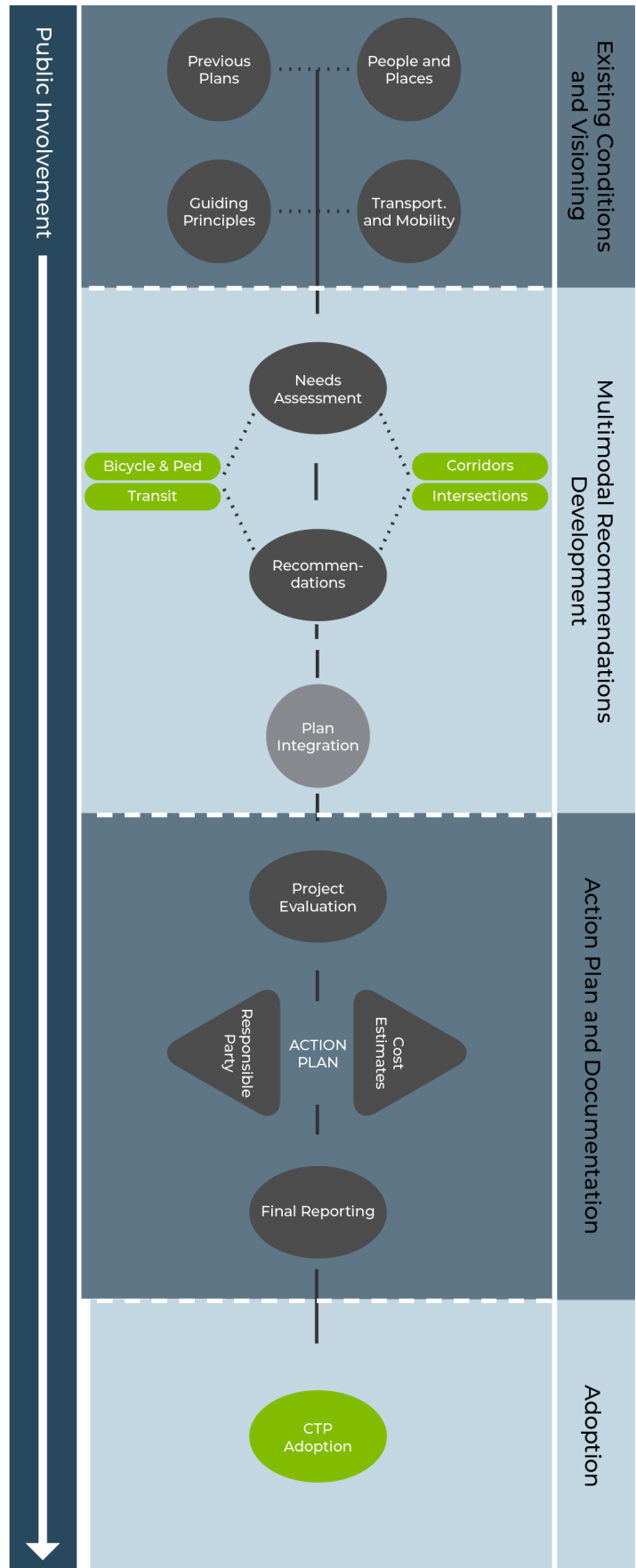
- ▶ Chapter 5 outlines the development of roadway projects identified through the MTP and introduces the methodology used to identify priority projects.

Chapter 6 – Performance Measures

- ▶ Chapter 6 discusses the role of performance-based planning and requirements for monitoring and evaluation.

Chapter 7 – Investing in Transportation

- ▶ Chapter 7 explores available funding mechanisms at the federal, state, and local levels and offers an action plan for implementing projects.



Guiding Principles

Vision

The guiding principles identified for the MTP reflect the regional vision for a future transportation system, as well as integrate the federal planning factors. These statements play a significant role in ensuring that project recommendations represent the region's intentions for the transportation system. The Greenville MTP includes six guiding principles as shown below.



Congestion & Travel Time Reliability

Consistently manage the transportation system to mitigate traffic congestion and ensure reliable travel times across the network.



Economic Vitality

Support the economic vitality of the entire Metropolitan Area by enabling competitiveness, productivity, and efficiency.



Equitable Quality of Life

Protect and enhance the environment, preserve local character, and provide equitable levels of access to affordable and reliable transportation options to improve the quality of life for all people in the region.



Mobility & Accessibility

Create a balanced transportation system across all modes that encourages enhanced accessibility and connectivity for all people, regardless of socioeconomic status or physical ability.



Network Preservation & Enhancement

Sustain and enhance the transportation system by promoting efficient management and operations and integrating transportation technologies.



Safety, Security, & Resiliency

Promote a safe and secure transportation system for all users that is resilient to incidents, inclement weather, disasters, and emergencies.

Federal Planning Factors

Because the 2050 MTP is a federally-required plan, a direct link is needed between the plan's guiding principles and federal planning factors carried forward in the Infrastructure Investment and Jobs Act (IIJA), the most recent federal transportation planning legislation. The following table illustrates how each of the 2050 MTP guiding principles addresses one or more of the federal planning factors.

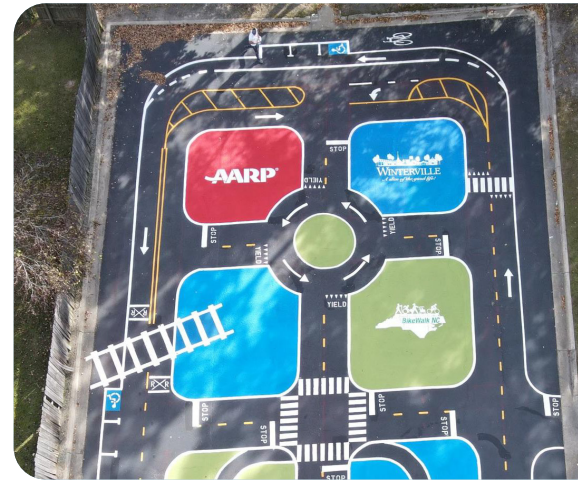
Table 1. Relationship Between Federal Planning Factors and MTP Guiding Principles

		2050 MTP Guiding Principles					
							
Federal Planning Factors	 Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency		✓	✓			
	 Increase the safety of the transportation system for motorized and non-motorized users				✓		✓
	 Increase the security of the transportation system for motorized and non-motorized users						✓
	 Increase the accessibility and mobility of people and freight	✓			✓		
	 Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns		✓	✓			
	 Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight				✓		✓
	 Promote efficient system management and operation	✓				✓	
	 Emphasize the preservation of the existing transportation system				✓	✓	
	 Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation	✓		✓			
	 Enhance travel and tourism		✓		✓		



Chapter 2

Existing Conditions

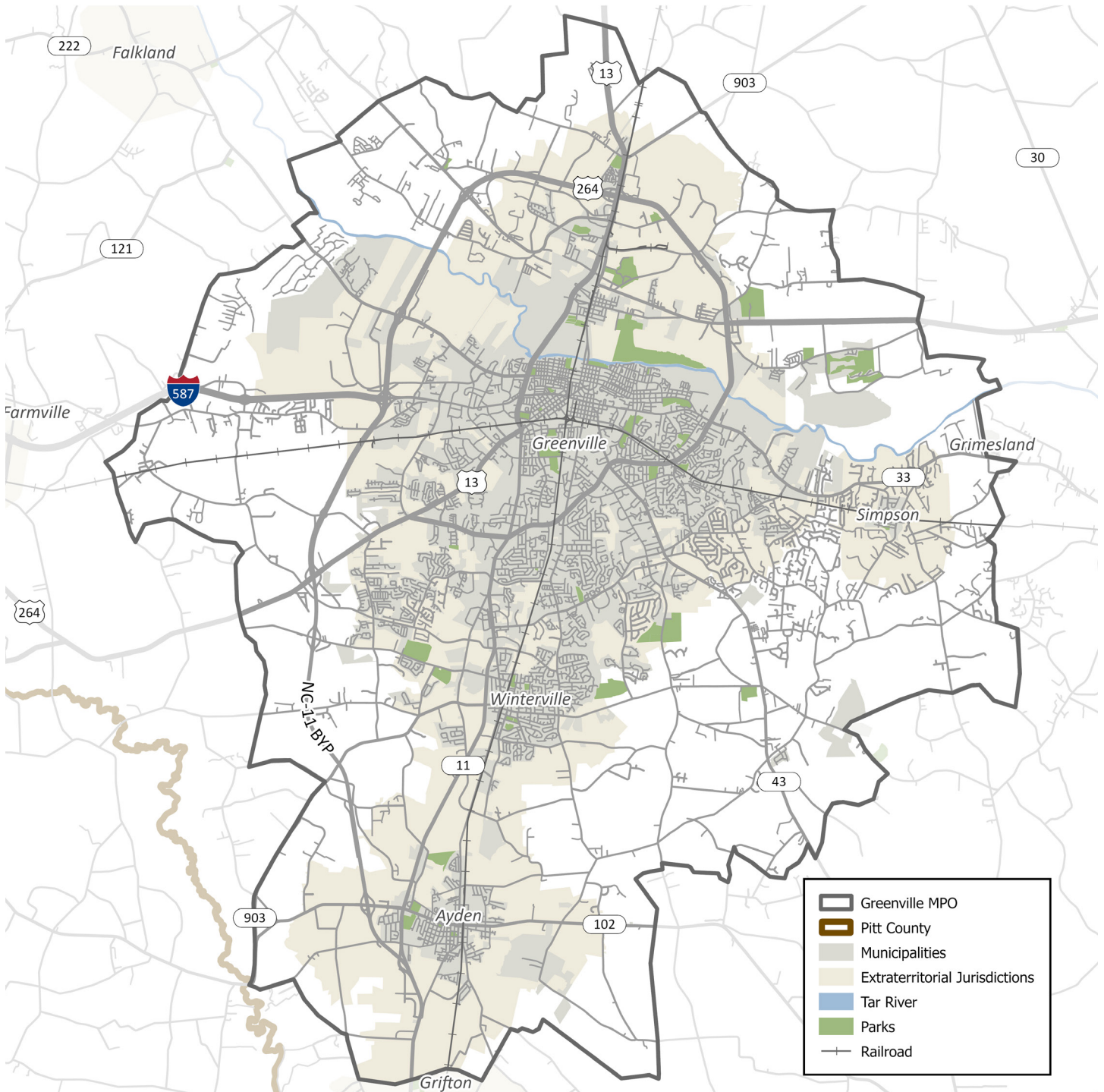


Introduction

The 2050 MTP defines the strategy for creating an MPO-wide transportation system that accommodates the current mobility needs of its residents and looks to the future to anticipate where needs may arise. This chapter examines the current conditions, travel and development trends, and existing plans and visions for the future of the planning area to create a regional transportation strategy that can meet both present and future needs.

As part of its focus on long-term solutions, the MTP provides guidance for the entire Greenville Urban Area. The study area is approximately 655 square miles and incorporates portions of Pitt County and fully encompasses the City of Greenville, the Towns of Winterville and Ayden, and the Village of Simpson.

Figure 1. Study Area



Building Blocks

The 2050 MTP is an opportunity to revisit the groundwork that has already been laid for the future of transportation and growth in the Greenville MPO. The 2050 MTP will act as a direct update to the previous 2045 MTP. To build upon the last MTP, various plans from the MPO, Pitt County, and local municipalities were compiled and reviewed. While not a comprehensive list, all of the plans summarized in the table below were collected because they are relevant to the 2050 MTP. These plans are the building blocks of transportation and land use decision making and are important considerations when identifying investments over the coming years. The findings from the following plans informed the development of the 2050 MTP's recommendations.

Table 2. Previous Plans

Plan	Year	Summary
Integrated Mobility and Enhancement Plan	2024	Analysis on Greenville Area Transit (GREAT) to overhaul operations. Includes review and recommendations on routes and operation hours.
Pitt County Comprehensive Transportation Plan 2.0	2024	Long range plan that identifies transportation improvement needs for Pitt County.
10th Street Pedestrian Crossing Feasibility Study	2023	Feasibility assessment for creating a pedestrian crossing at 10th Street to improve pedestrian safety. This project aims to address pedestrian safety concerns along one of Greenville's busiest roadways.
2024 - 2033 Statewide Transportation Improvement Program (STIP)	2023	Multi-year capital improvement document which denotes the scheduling and funding of construction projects across the state over a minimum four year time period.
Envision Pitt County 2045 Comprehensive Land Use Plan	2023	Land use plan analysis on development, transportation, and environmental resiliency throughout Pitt County.
Playbook 2033: Recreation & Parks Comprehensive Master Plan	2023	Park master plan with analysis on park usage, active transportation trends, and areas of improvement. Includes a list of project priorities and funding strategies.
Climate Resilience Projects for Mid-East Region	2022	Analysis of climate resilience at a regional level.
Village of Simpson Land Use Plan	2022	Update to previous land use plan including new goals and objectives, existing and future land use maps, and implementation strategies.
NC Moves 2050 Plan	2021	Strategic multimodal transportation plan aimed at connecting communities and supporting NC's economy and quality of life. Focused on creating a more responsive, diverse, and inclusive transportation system.
Pitt County Community Health Needs Assessment	2021-2022	Revealed that a lack of active transportation facilities and a sedentary lifestyle were among the barriers/challenges named by the communities. Identified solutions to improve community health. More details can be found on pages 17 & 18.
Eastern NC Regional Freight Mobility Plan	2020	Study was created to support and streamline development of the eastern North Carolina multimodal freight network centered on NCDOT Divisions 1, 2, and 3 and the planning organizations contained within.
Greenville Floodplain Management Plan	2020	Analysis on the impact of flood hazards in Greenville. Identifies transportation infrastructure susceptible to flooding hazards and proposes mitigation actions and improvements.
NC 43 South Corridor Study	2020	Study assessing impact of NC 43 on surrounding areas. Includes specific goals and objectives for maintaining optimum traffic circulation and to ensure appropriate development along the corridor.
2045 Metropolitan Transportation Plan	2019	Vision for creating a mode-inclusive regional transportation system that accommodates the current and future mobility needs of its residents through identification of project, policies, and action steps.
Winterville Greenway Master Plan	2019	Analysis on the development of a high-quality network of trails to strengthen alternative transportation options in Winterville. Includes project proposals and implementation recommendations.

Plan	Year	Summary
Worthington Road Corridor Study	2020	Analysis of the Worthington Road with the goal of developing a vision for what the corridor can become in the future. Includes a multimodal transportation approach that complements existing and future land uses and aligns with the long-term goals of Winterville.
Active Transportation Plan	2019	Analysis of non-motorized methods of transportation around the MPO. Includes a review of the MPO's bike, pedestrian, and multiuse path networks and proposes future project recommendations.
Greenville Watershed Master Plans	2016	Includes analysis on the seven basins located within the City of Greenville. The master plans are used to assist with maintenance activities, assess capital improvement project needs, meet state and federal stormwater requirements, and aid in quality assurance of new/re-development efforts in the City of Greenville.
Town of Winterville Comprehensive Land Use Plan	2019	This update to the Town's plan will serve as a framework for accommodating growth and development while maintaining the character of the Town and the livability of the area.
Town of Ayden Land Use Plan	2019	The Town of Ayden Land Use Plan updates the 2030 Ayden Community Vision. Marked by community engagement and data analysis, this plan is intended to be used as a guideline for community decision making into the future.
Corridor X Study	2020	Analysis of the highway corridor between Jacksonville and Greenville, including routes US 258, NC 11, and US 13. The purpose of the plan is to develop a consistent transportation vision for the corridor, based on stakeholder input and technical analysis. Includes assessment of statewide economic development objectives and regional planning efforts.

People

Population and Demographic Trends

Since the 2045 MTP, adopted in 2019, the study area's population grew by 3.66% from 2010 to 2020. Compared to North Carolina's growth rate of 9.48%, the study area is growing significantly slower. The study area's median age is 35.6, slightly younger than North Carolina's median age of 39. Men have a slightly lower median age than women within the Greenville area, at 34.8 and 37.2, respectively.

The study area is a predominately white community (54.8%), with the Black and African American population making up 35.3% of the total. The remaining 9.9% of people represent another race or are biracial. The study area's racially

underrepresented, or minority community, accounts for 45.2% of the population, whereas the state's total minority share is 35.0%.

Approximately 89.7% of the study area's population has obtained, at the least, a high school diploma, and 34.7% of people have a bachelor's degree or higher. While these rates are lower than the state's rates of educational attainment, they still reflect an educated population well-equipped for skilled employment. The study area is poorer than North Carolina as a whole, with a median household income of 18.3% less than the state and a poverty rate of 6.7% higher than the state.

Population

149,920▲
Total
Population



Diversity



54.8%
White



35.3%
Black or African American



9.9%
Other Race
or Biracial

6.2%
Hispanic or
Latino

Income and Poverty

 **Greenville MPO**  **North Carolina**



\$55,961
Median
Household
Income

\$66,186
Median
Household
Income



19.8%
Households
in Poverty

13.1%
Households
in Poverty

Age

Median
Age
35.6



Median
Male Age
34.8



Median
Female
Age
37.2

Education



89.7%
High School
Grad or higher



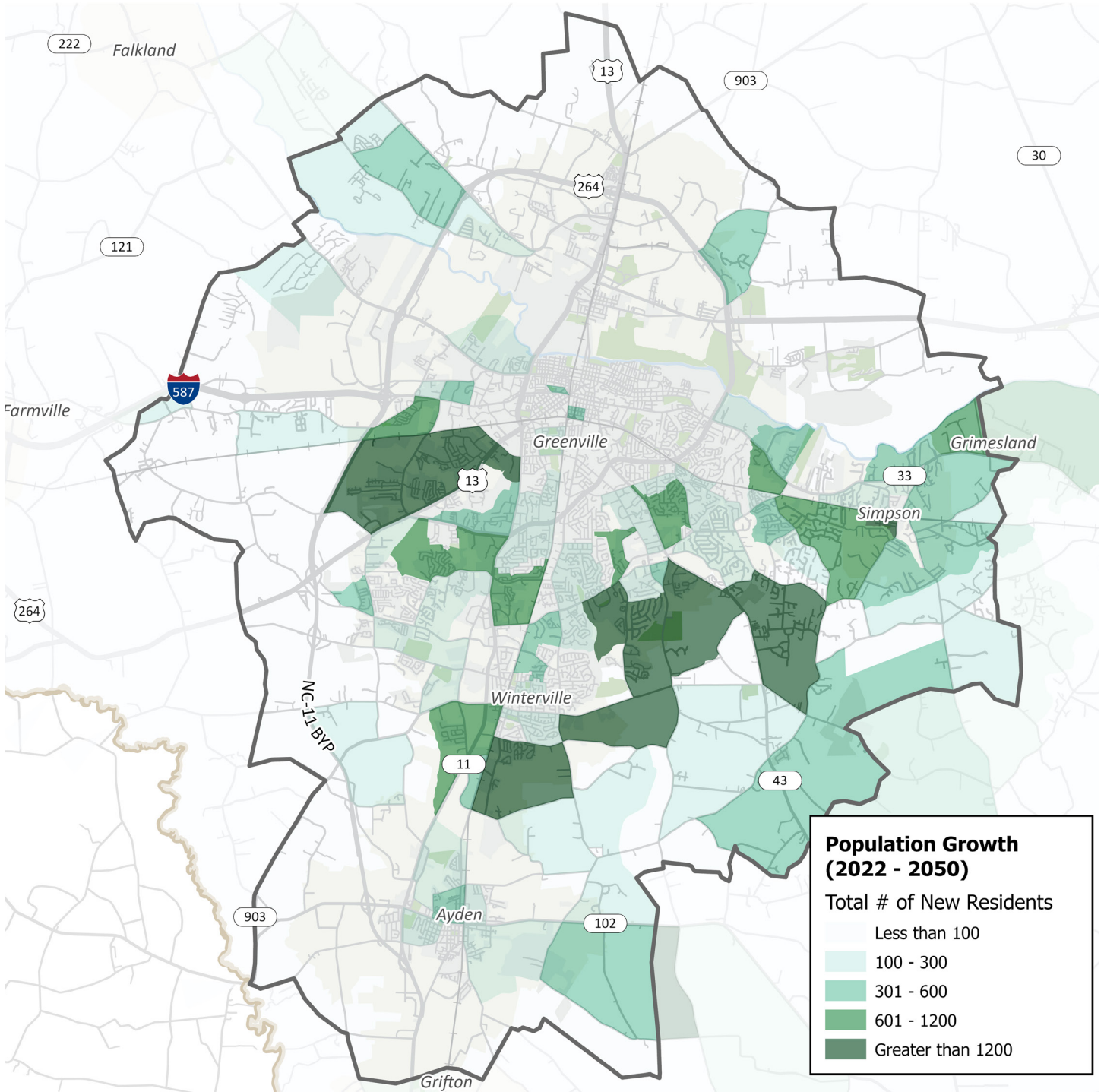
34.7%
Bachelor's
or higher

Data sourced from 2022 ACS 5-year estimates and 2010 & 2020 Bicentennial Data.

Population Growth

Population growth plays a significant role in changing traffic patterns, therefore, analyzing population growth can help to indicate where improvements in the transportation system may be needed. Based on projections from the regional travel demand model, the majority of population growth is expected to occur in the southeastern regions of the MPO. Heavy population growth is expected in the unincorporated areas between Greenville, Simpson, and Winterville. Additionally, Downtown Simpson and the area northwest of Downtown Greenville are two high growth areas.

Figure 2. Population Growth



Data sourced from NCDOT GUAMPO Travel Demand Model.

Employment Growth

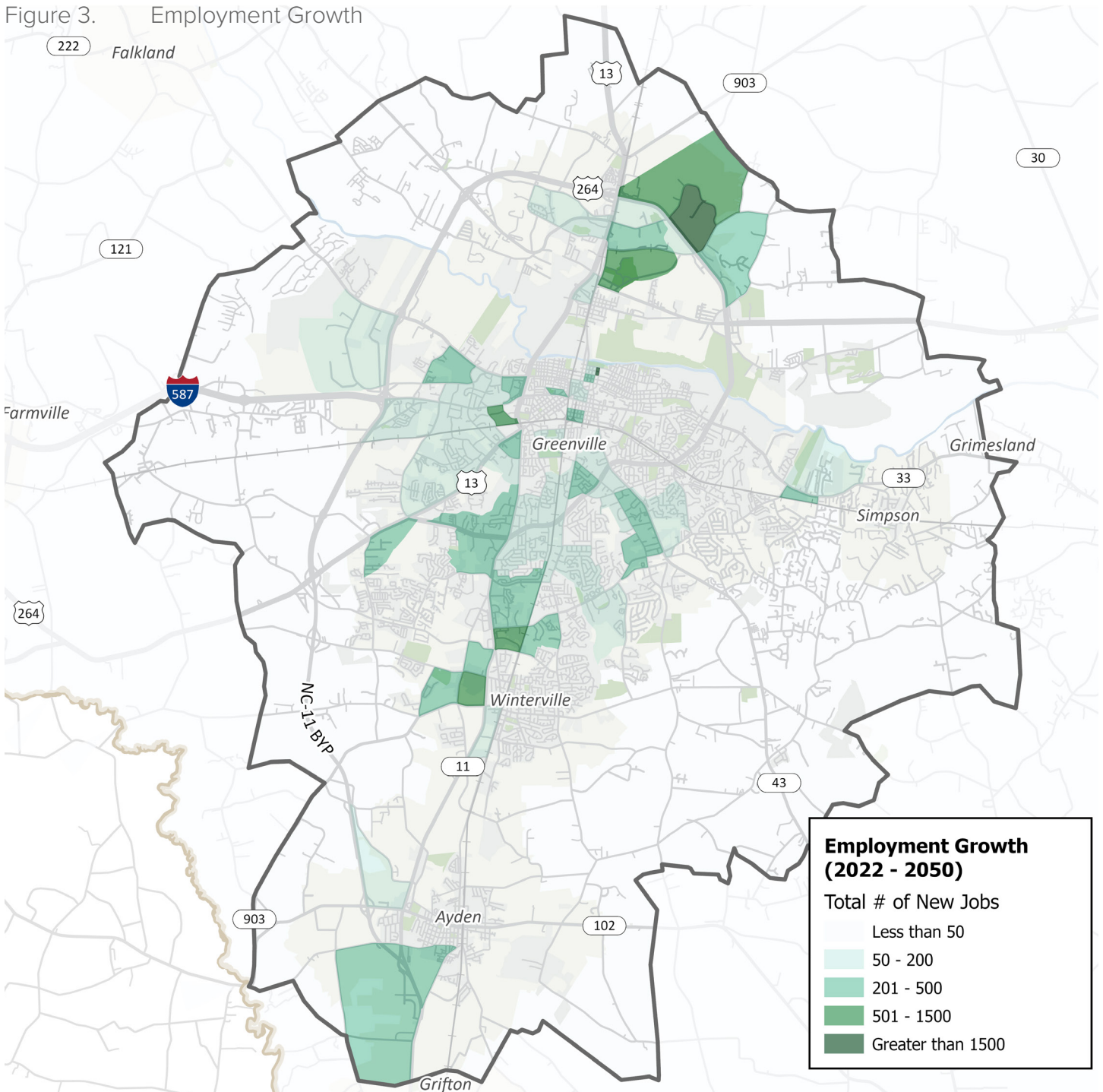
Expanding job markets in the region will significantly impact traffic patterns in the MPO; therefore, analyzing employment growth can help indicate where improvements in the transportation system may be needed. Based on projections from the regional travel demand model, the majority of employment growth is expected to occur in the northeastern regions of the MPO near US 264. Employment growth is also expected along US 13 and NC 11 between Greenville and Winterville. The area south of Ayden is also anticipated to experience an increase in jobs.



Federal Planning Factor: Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.

The Greenville Urban Area MPO worked hand-in-hand with member jurisdictions to fully integrate local land use decisions and anticipated employment growth within the update to the regional travel demand model. This effort allows the MPO to better plan transportation to support growth across the region.

Figure 3. Employment Growth

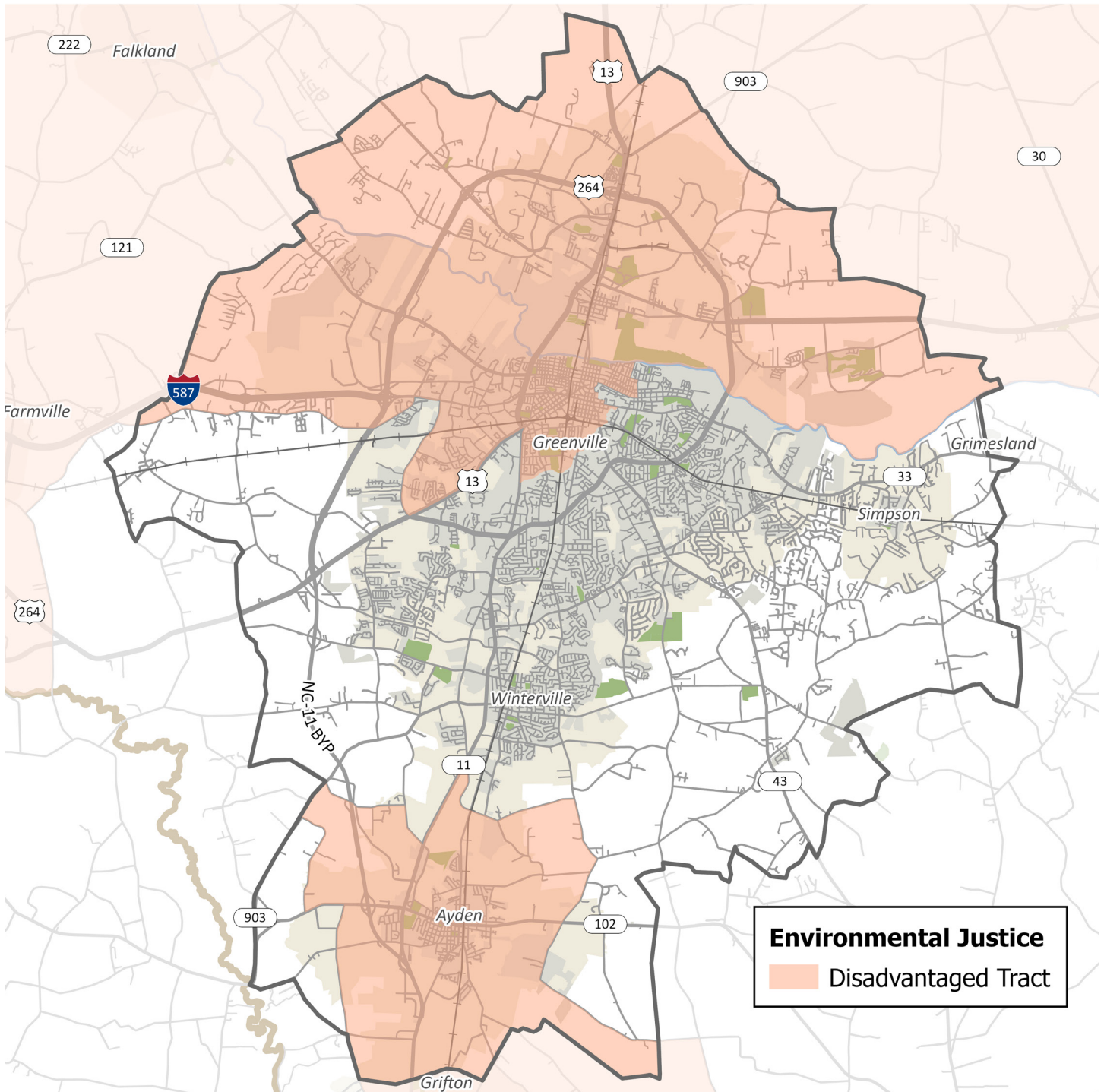


Data sourced from NCDOT GUAMPO Travel Demand Model.

Environmental Justice

The Climate and Economic Justice Screening Tool (CEJST) was created by the Council on Environmental Quality to identify communities that are overburdened and underserved in relation to climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. Eleven census tracts within the study area are identified as disadvantaged. Nine tracts in the northern region of the study area are considered disadvantaged due to high rates of unemployment, low income, poverty, and low life expectancy. The two census tracts in Ayden and the southern tip of the study area are disadvantaged due to high rates of unemployment, low income, low education rates, and high counts of diabetes.

Figure 4. Disadvantaged Areas

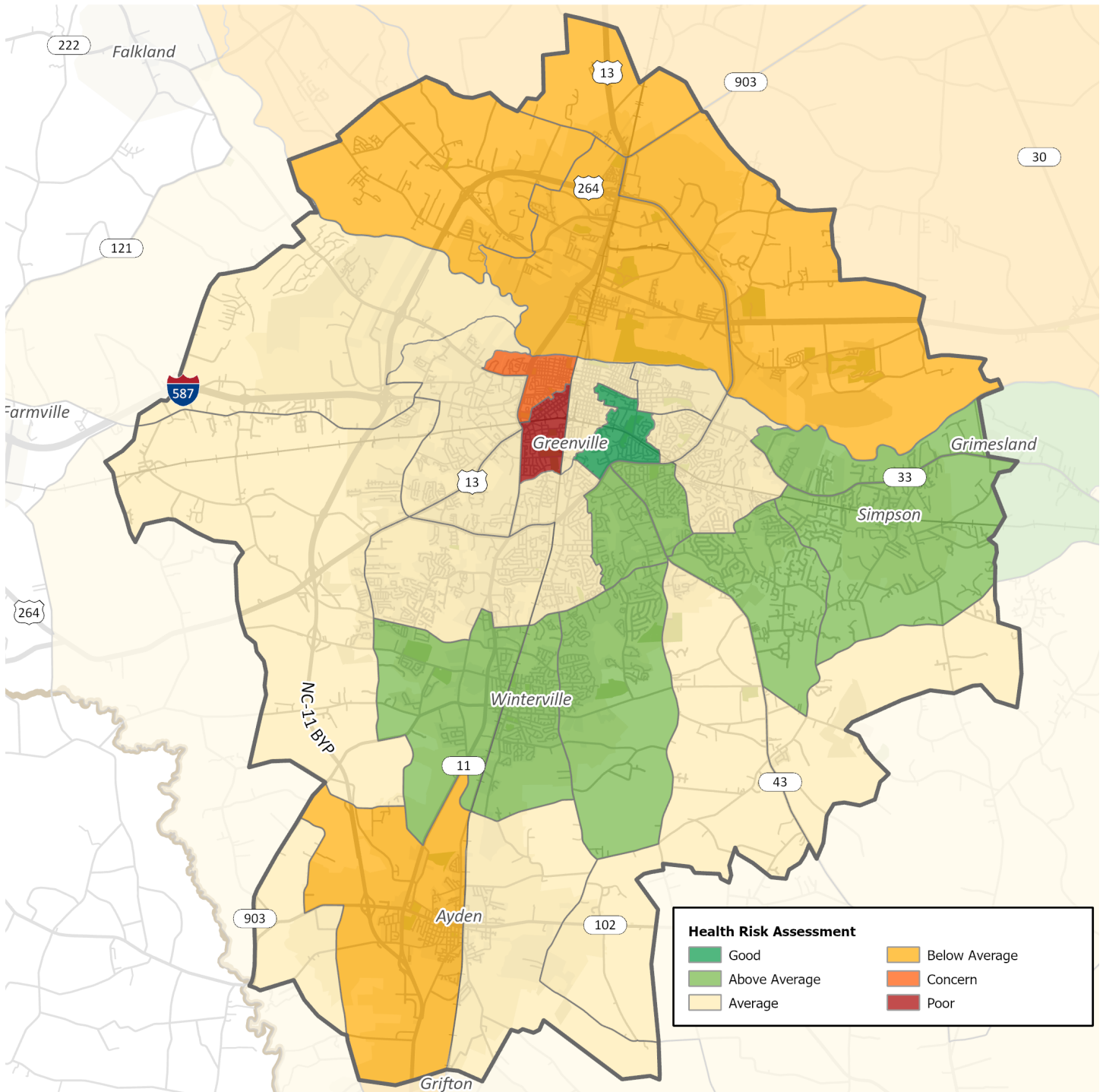


Data sourced from CEJST.

Health Risk

A Health Risk and Equity Community Assessment was created for the MPO to identify areas with health disparities, which are often heavily influenced by the built environment, transportation options, and accessibility of services. The assessment looks at nine health outcome indicators at the census tract and county levels, including chronic diseases like asthma, heart disease, and diabetes; risk factors like obesity, high blood pressure, and high cholesterol; and measures of physical inactivity and mental health. Nine census tracts in the study area (in the north, near Downtown Greenville, and around Ayden) have health risk scores worse than the county average, overlapping closely with the eleven disadvantaged tracts previously identified. Areas around Winterville, Simpson, and the East Carolina University campus have good or above average risk scores.

Figure 5. Combined Health Risk Assessment

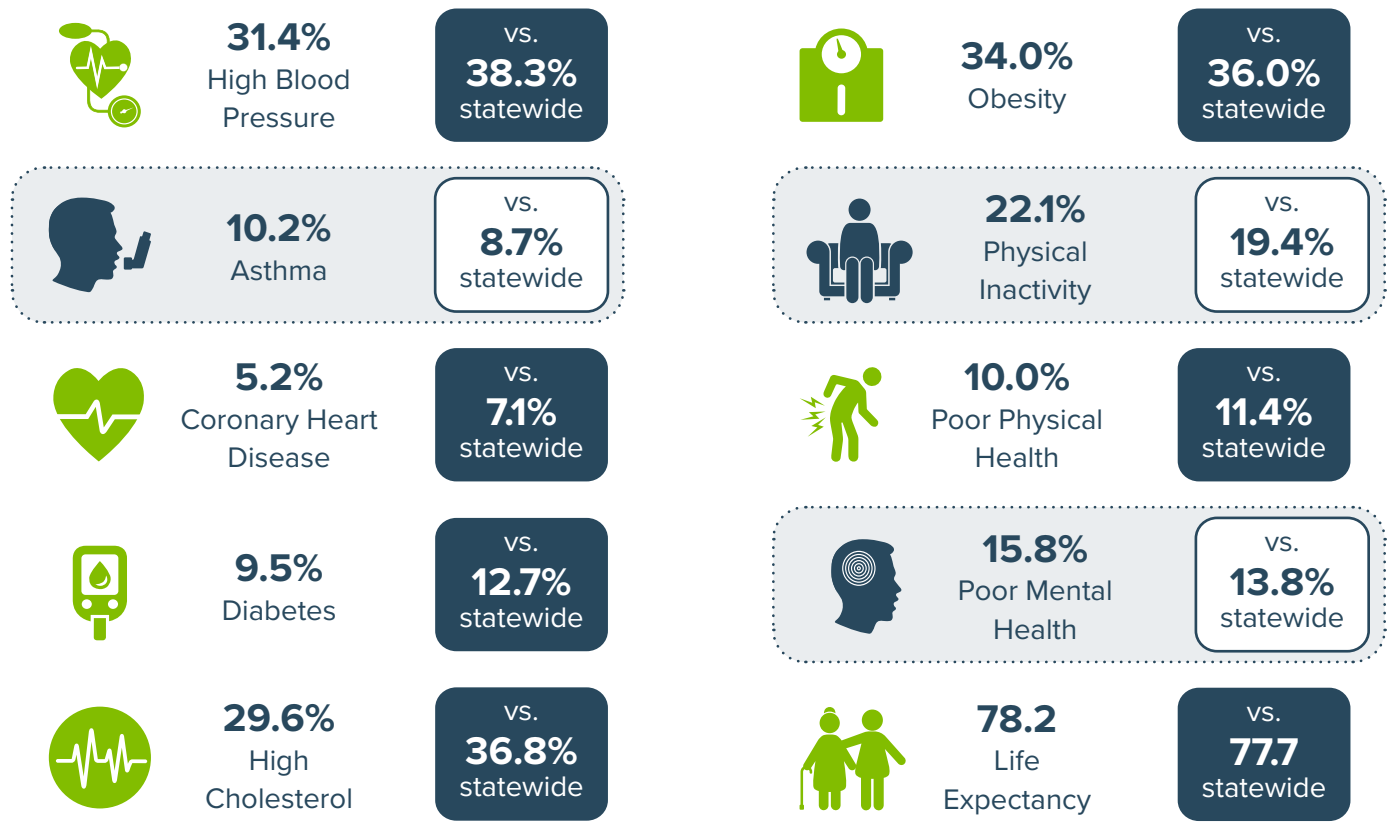


Data sourced from GUAMPO.

Health Trends

The Health Risk and Equity Community Assessment also uses the same nine health outcome indicators along with life expectancy to compare the health of the study area's population to North Carolina as a whole. For most indicators, the study area has better outcomes and lower rates of chronic disease and risk factors than the statewide numbers. However, the study area population sees higher rates of asthma, physical inactivity, and poor mental health than the state.

Health



Federal Planning Factor: *Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.*

The project prioritization, discussed in Chapter 4, included an assessment of the Health Risk Assessment data discussed here, as well as access to critical services such as medical services, childcare, and grocery stores. These elements are critical to equitably improving the quality of life for the residents of the Greenville region.



Data sourced from 2021 CDC PLACES Data, CDC BRFSS Prevalence and Trends Data, 2010-2015 CDC Life Expectancy Data.

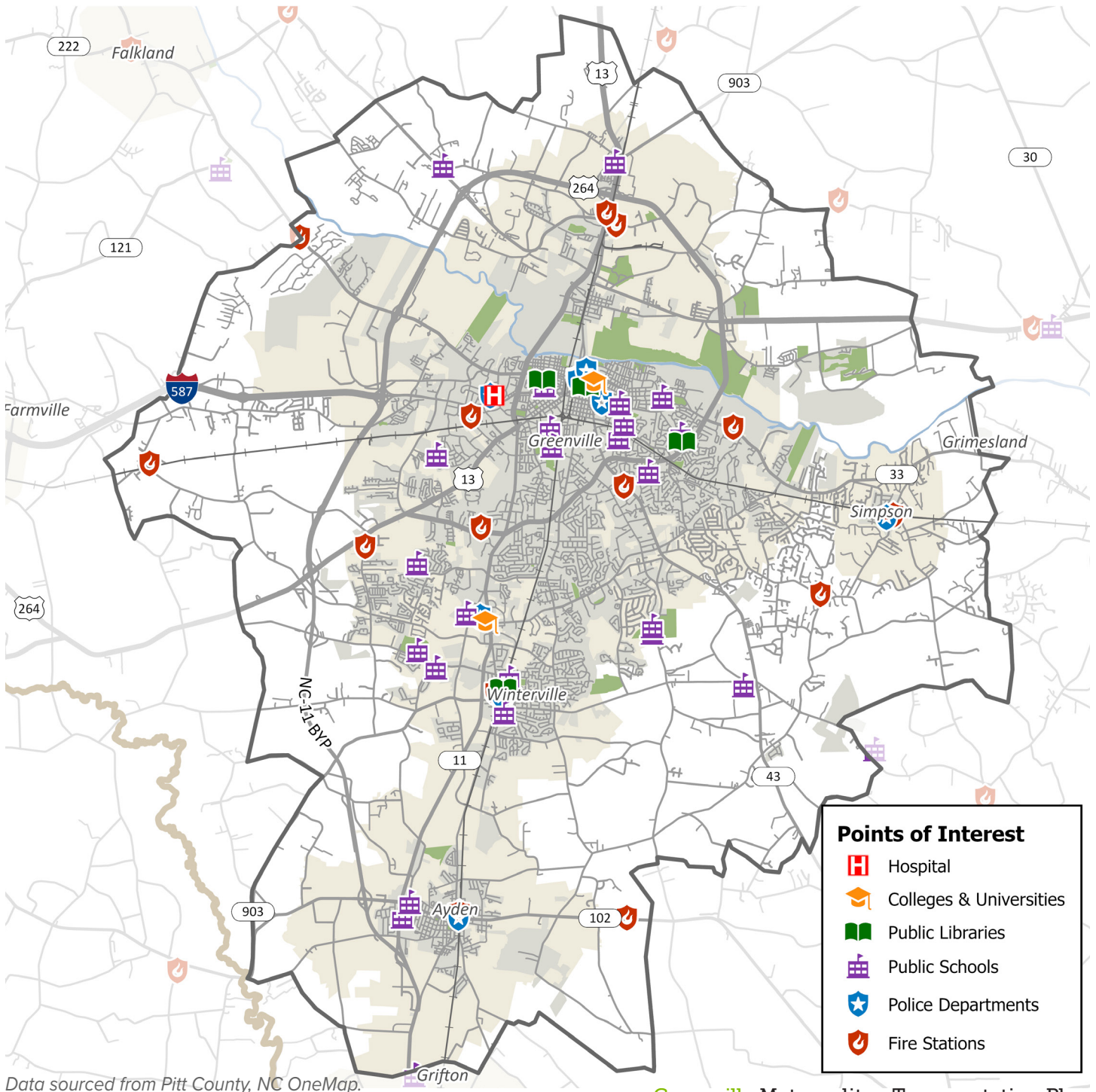
Places

Community Assets

The greater Greenville area has a variety of assets supporting community health and education. There are 23 public schools ranging from primary to high school within the MPO, as well as two universities, Eastern Carolina University (ECU) and Pitt Community College (PCC). There are four public libraries: three in Greenville and one in Winterville. The Town of Ayden runs a municipality-owned library named Quinerly-Olschner Library. Emergency services can be found throughout each of the jurisdictions. Vidant Medical Center, located in Greenville, is the central Hospital for the MPO and County.

Emergency services can be found throughout each of the jurisdictions. Vidant Medical Center, located in Greenville, is the central Hospital for the MPO and County.

Figure 6. Local Community Facilities



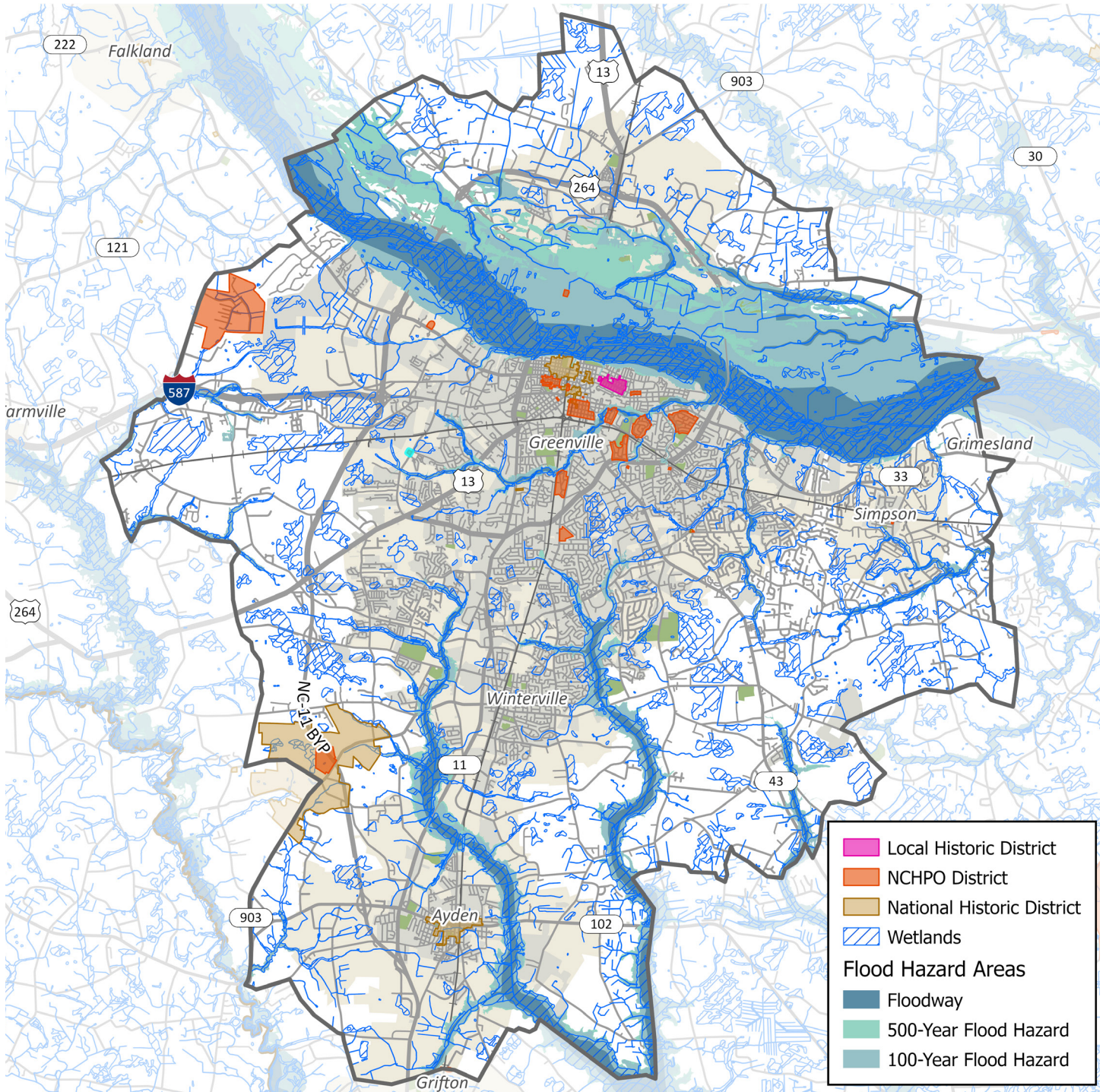
Data sourced from Pitt County, NC OneMap.

Environmental and Historic Features

The Greenville MPO is in the Tar River Watershed. It is classified as WS-IV, being highly developed and nutrient-sensitive. The Tar River is 215 miles in total, with approximately 18 miles running through the Greenville urban area. Much of the area along the Tar River is within a 100-year or 500-year flood hazard area, including large portions of US 264 and US 13. The wetlands and flood hazard areas throughout the region pose serious threat the health of the transportation system.

The study area contains 16 national historic districts and sites, 20 NC Historic Preservation (HPO) districts and sites, and one local historic district. The majority of the historic districts are concentrated in Downtown Greenville and around East Carolina University's campus, with other historic districts located in Ayden, Simpson, and non-incorporated areas.

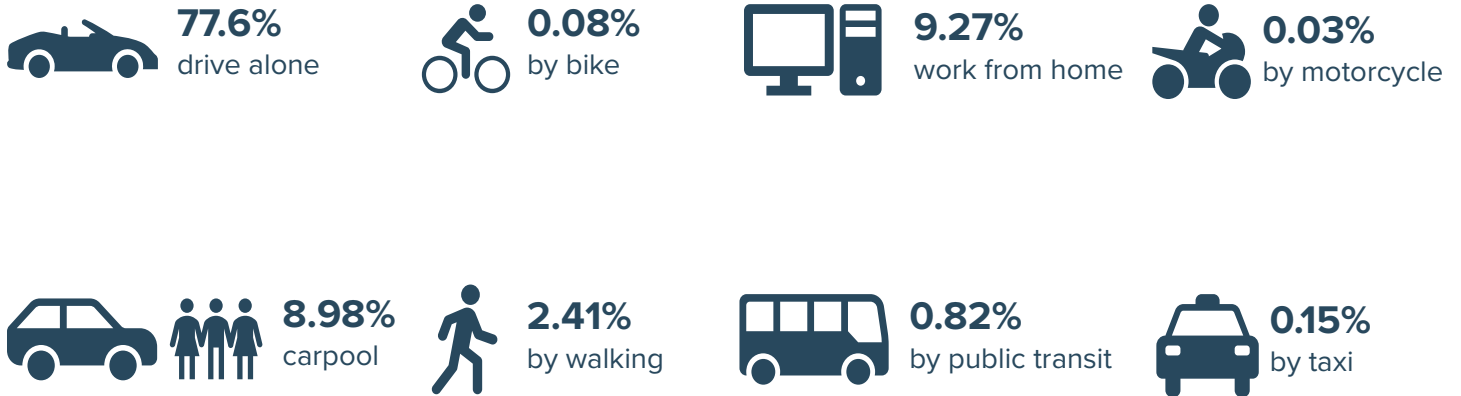
Figure 7. Environmental and Historic Features



Mobility

Commuting Patterns

Mode to Work



Vehicle Access



2%
of households
have no access to
a vehicle



11%
of households can
only access one
vehicle

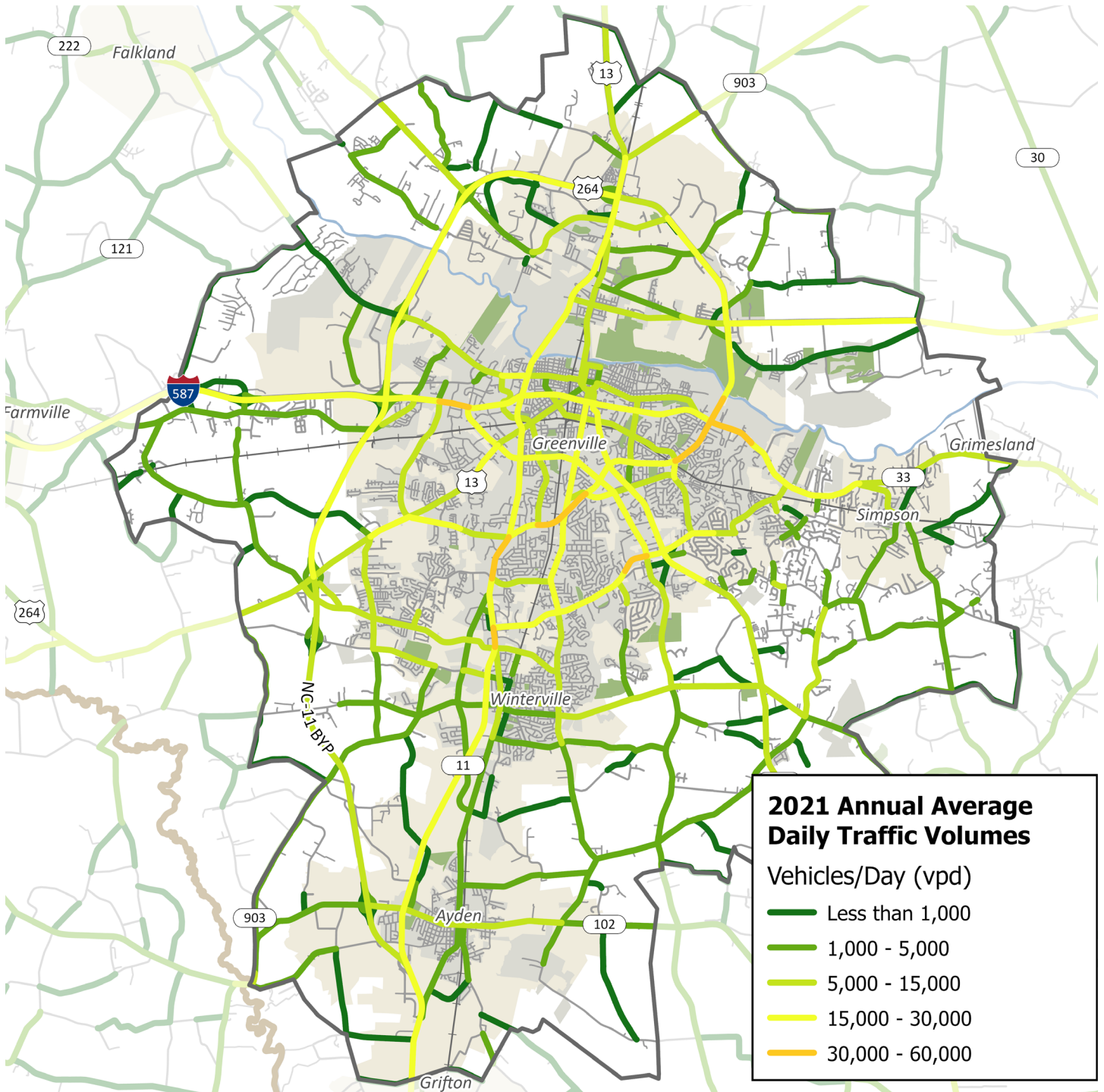
Data sourced from 2022 ACS 5-year Estimates.

Annual Average Daily Traffic

Annual average daily traffic (AADT) measures the average daily traffic passing through a specific location along a roadway. Traffic volumes typically correspond to the function, design, and location of the roadway, where larger roadways serving long-distance travel generally have higher traffic volumes. AADT volumes help to identify areas with a high demand for travel, such as commercial hubs, schools, hospitals, etc. AADT volumes, in some cases, can also highlight roadways that may experience a higher level of pass-through traffic.

As the largest highway through the area, US 264 has the highest traffic volumes in the study area, followed by NC 11. Among roads primarily serving the local community, Fire Tower Road has the highest traffic volumes, with sections carrying over 31,500 vehicles per day. East 10th Street and US 13 also contain higher traffic volumes, with sections carrying over 27,500 and 24,500 vehicles per day, respectively.

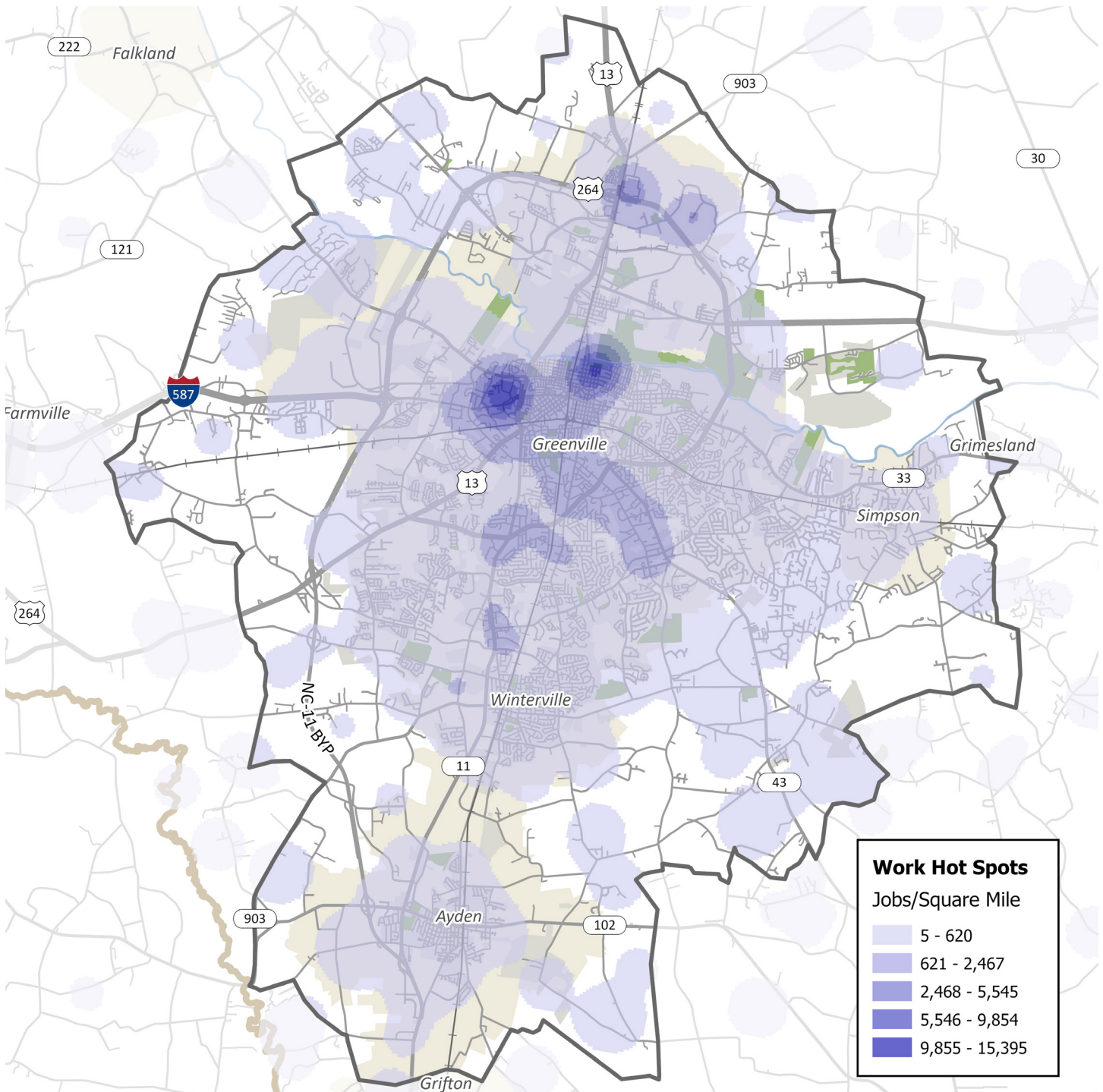
Figure 8. Annual Average Daily Traffic



Travel Flows

The maps on this and the following page show the workplaces and homes of workers in the MPO (people living in the study area who are employed, people who are employed in the study area but live elsewhere, or people who live and work in the study area), respectively. For workers living in the MPO, 45.9% work in Greenville and Winterville. Popular locations outside of the MPO include Raleigh, Kinston, and Garner. The majority of workers who commute into the MPO come from Raleigh, Rocky Mount, the City of Wilson, and the City of Washington. Workplace hot spots are concentrated around the Greenville Medical District, Downtown Greenville, and the Pitt-Greenville Airport. Households of those who live and work within the MPO planning area are primarily concentrated in incorporated areas of Greenville, Winterville, Simpson, and Ayden.

Figure 9. Travel Flows

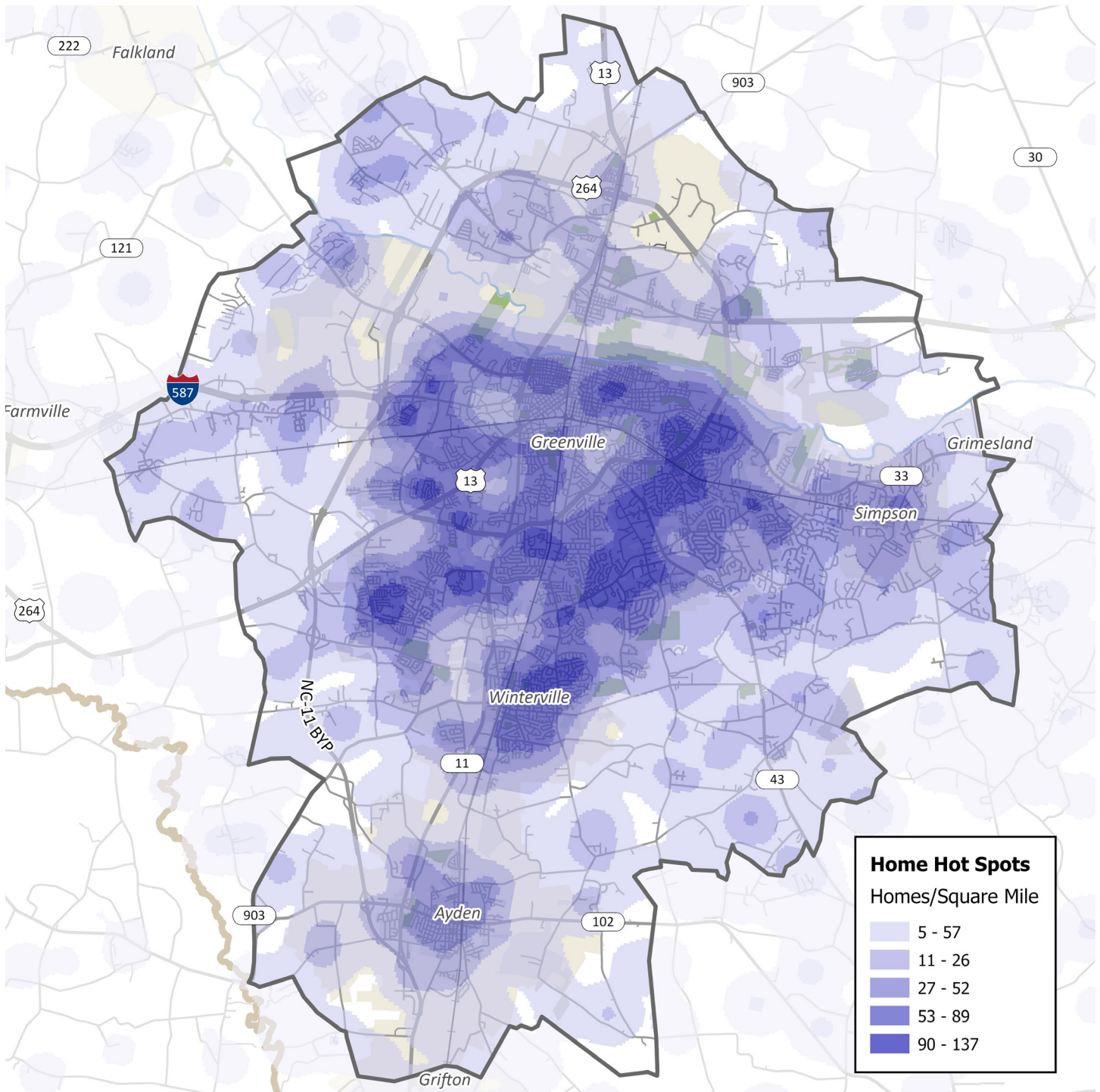


Data sourced from 2020 Longitudinal Employer-Household Dynamics (LEHD)

Travel Flow



Figure 10. Households of Greenville Workers - Travel from Work to Home

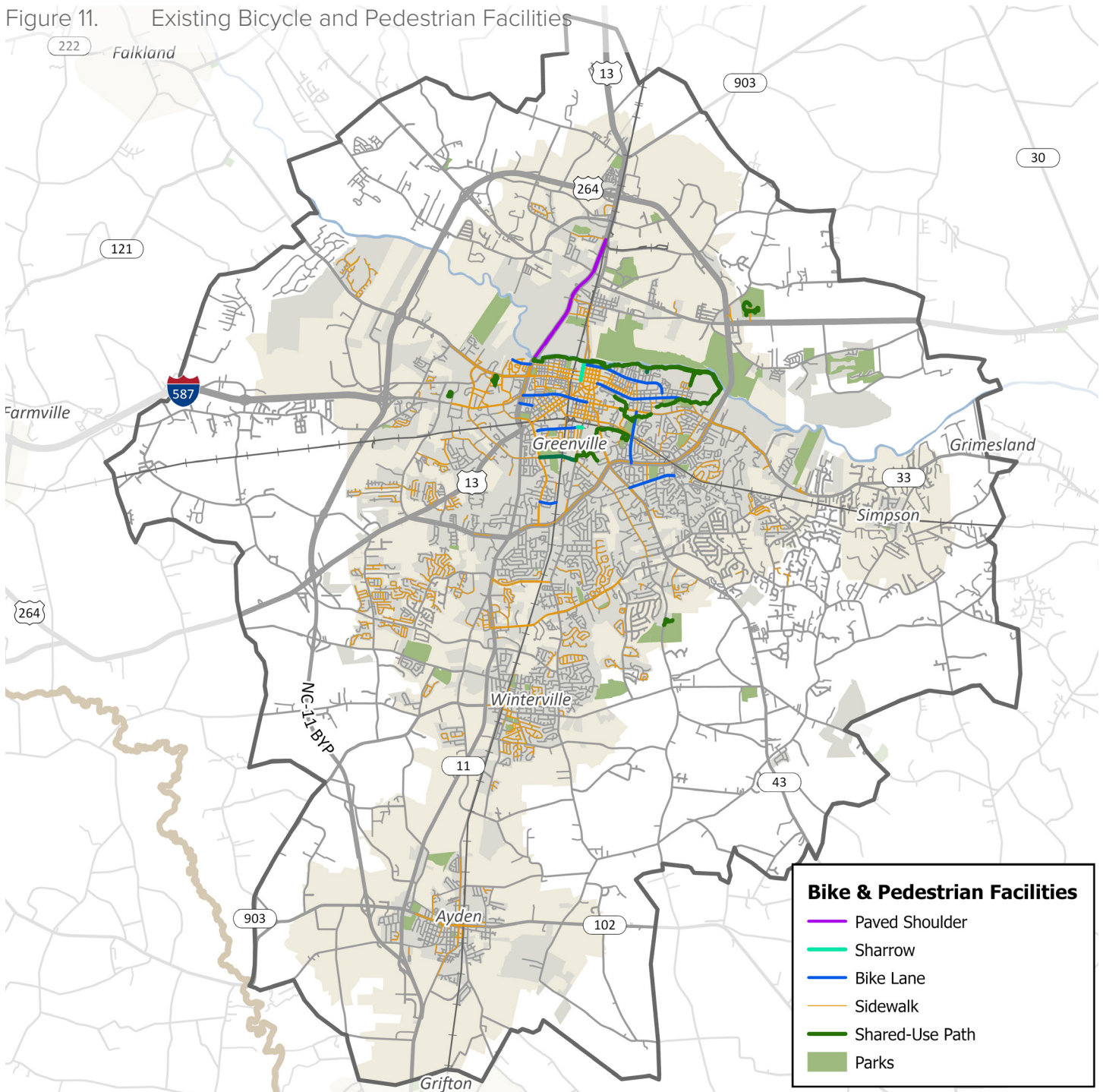


Bicycle and Pedestrian

The most complete sidewalk networks are within Downtown Greenville and ECU's campus. Portions of Winterville, and Ayden also contain developed sidewalk networks. Large gaps in sidewalk infrastructure exist in the southeastern region of Greenville and throughout Simpson. Greenville has multiple shared-use paths that connect downtown to local parks and ECU's campus. The shared-use paths are primarily concentrated within Greenville with no paths extending to Winterville, Simpson, or Ayden.

Bike infrastructure is also concentrated within Greenville and includes standard bike lanes, sharrows, and paved shoulders. The majority of standard bike lanes connect ECU to Downtown Greenville. Sharrows are also located within Downtown Greenville on S Pitt Street and Howell Street. The paved shoulder is along the segment of US 13 that connects the Pitt-Greenville Airport to Downtown Greenville. Simpson, Winterville and Ayden do not currently contain any bike infrastructure.

Figure 11. Existing Bicycle and Pedestrian Facilities



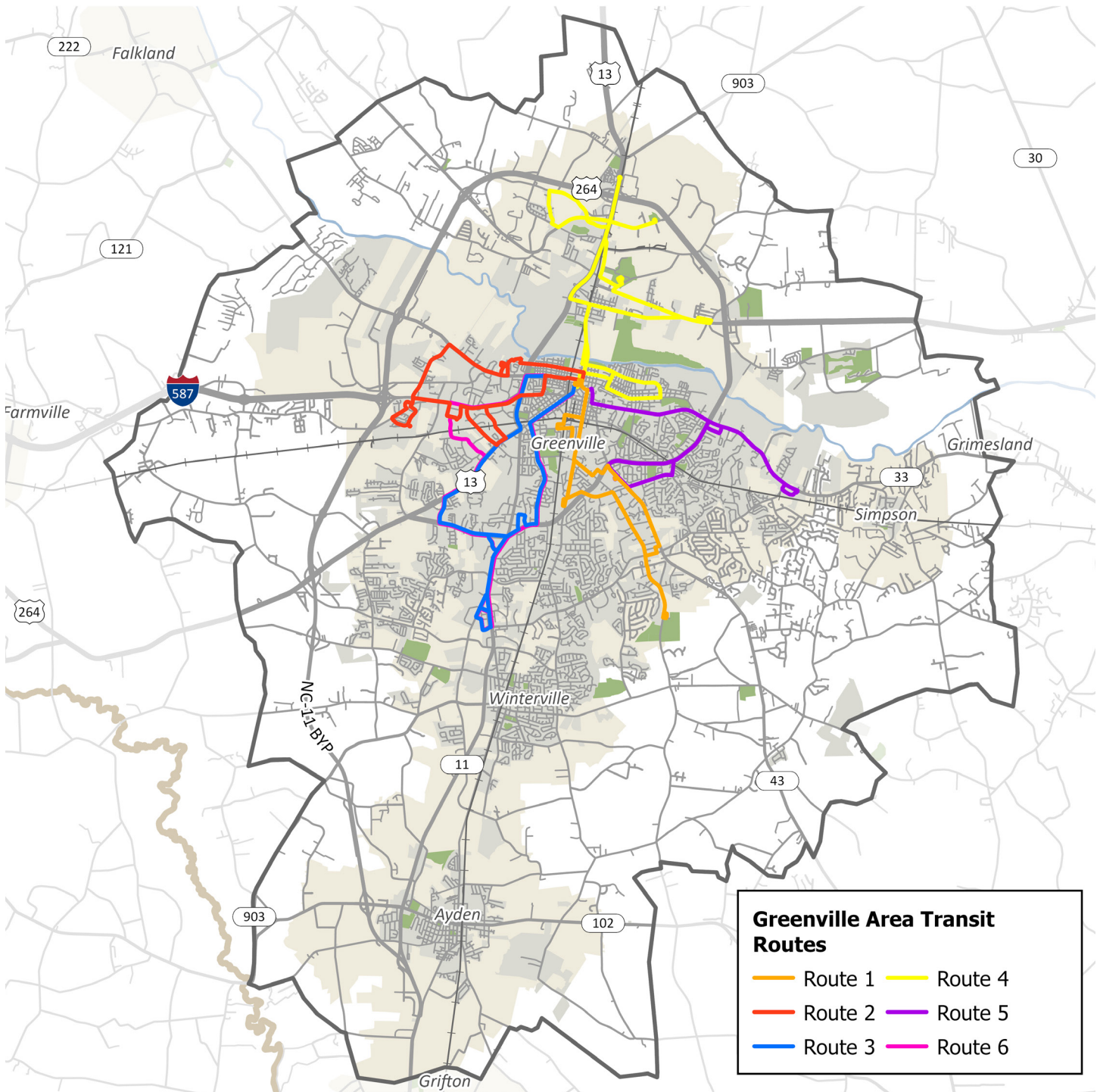
Data sourced from NCDOT Pedestrian & Bike Infrastructure Network.

Transit

The City of Greenville is served by Greenville Area Transit (GREAT), a public transit service with six fixed bus routes that serve the city and a portion of northern Winterville. Ayden and Simpson are currently not served by any fixed-route public transit. In addition to local public transit, Amtrak and Greyhound have stations in Downtown Greenville, that provide intercity transportation.

The Pitt Area Transit System (PATS) is open to all people living outside of the city limits of Greenville. According to Pitt County, the service provides nearly 400,000 miles of service, over 40,000 trips annually, and consists of a fleet of 20 vehicles. ECU operates a bus system to transport students to and from campus and various student-living communities. The service offers 11 routes including, four campus routes and seven off-campus routes.

Figure 12. GREAT Routes

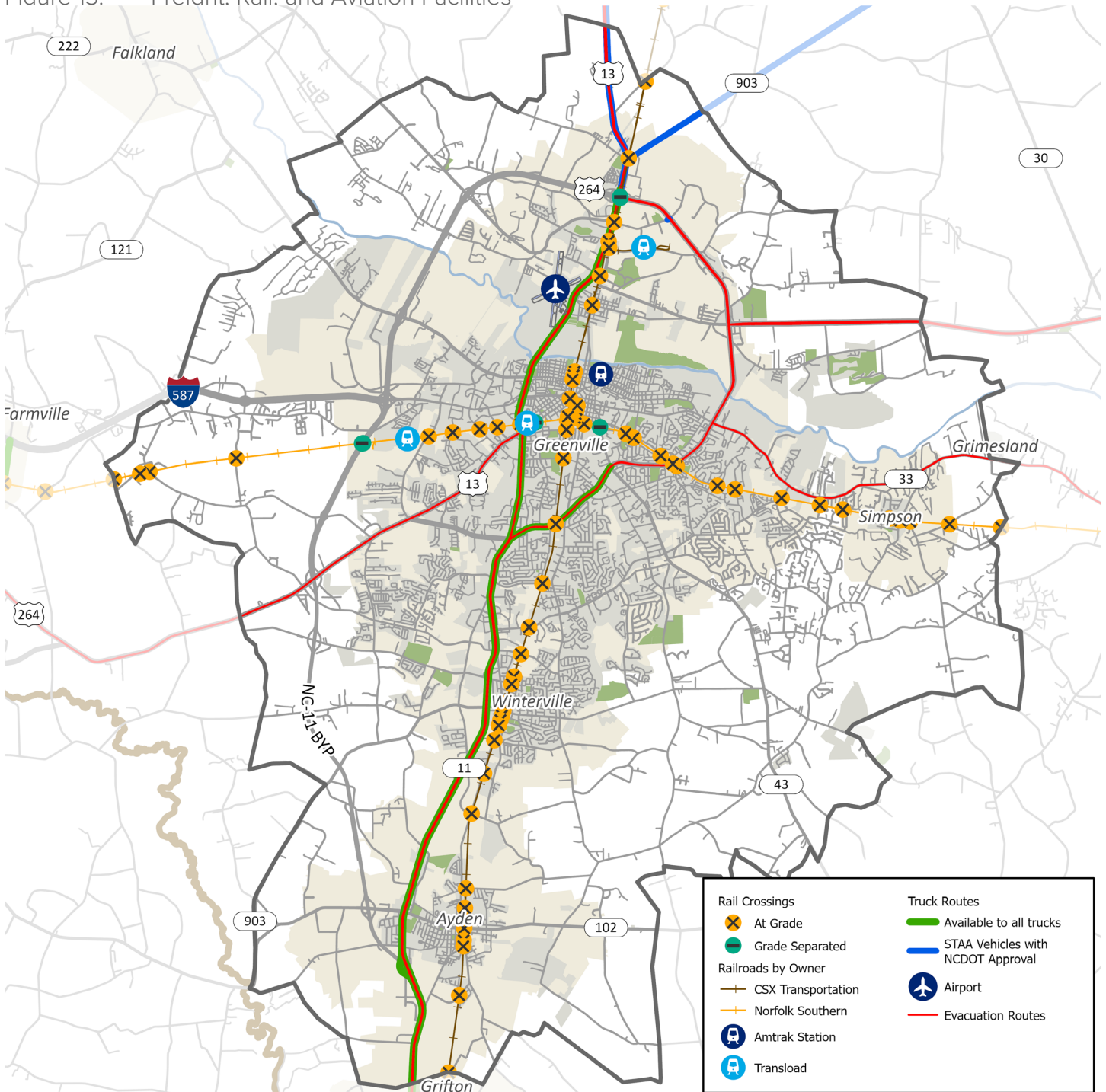


Freight, Rail, and Aviation

Norfolk Southern and CSX own and operate railways through the MPO. Norfolk Southern also has three transload facilities for rail and truck freight. Most rail crossings in the study area are at-grade, with grade-separated crossings at US 264, US 13, Charles Boulevard and Dickinson Avenue. Rail lines can sometimes be viewed as a barrier. However the 74 rail crossings allow for continued traffic flow for vehicles, as well as bicyclists and pedestrians. NC 11, NC 903, US 13, and US 264 Alt are major freight truck routes through the planning area.

The Pitt-Greenville Airport, located in the northern part of Greenville along US 13, is served by American Airlines, which operates commuter service to Charlotte. Emergency evacuation routes also run through the study area and include NC 11, NC 33, US 13, and US 264.

Figure 13. Freight, Rail, and Aviation Facilities



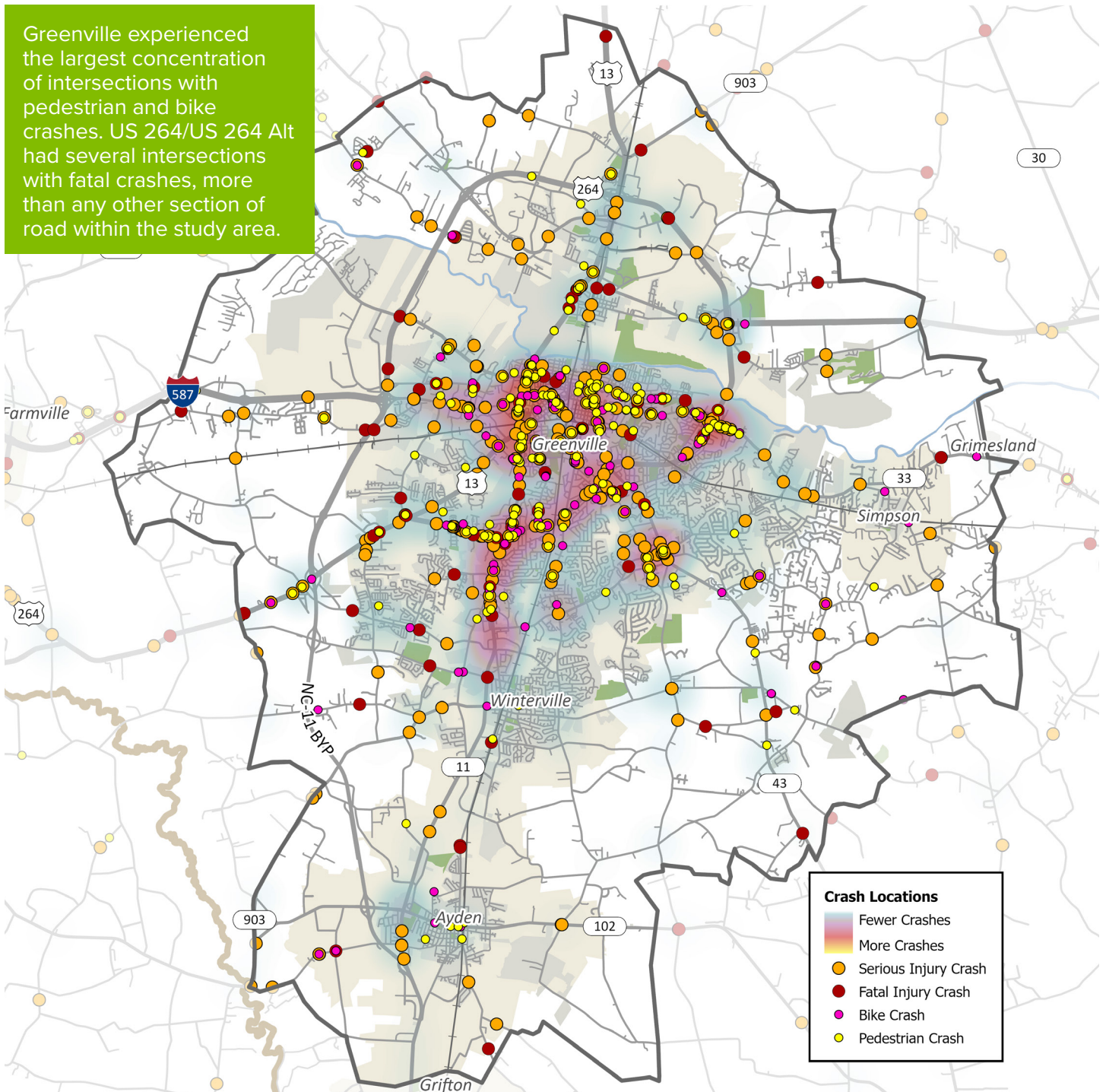
Data sourced from NCDOT GIS Unit, NCDOT North Carolina Truck Network, NCDOT Division of Aviation Airports, GMO Hurricane Evacuation Routes.

Safety Trends

Improving the safety of the transportation system is a high priority for the Greenville MPO, and analyzing crash data is a key way to identify problem areas or “hot spots” for crashes. Between 2017 and 2021, crashes were predominately concentrated in Greenville and Winterville along 10th Street/Stantonsburg Road, NC 11, US 264, E Fire Tower Road, and E Evans Street. The study area contains a high frequency of crashes, with 14 intersections experiencing over 100 crashes from 2017 to 2021. Four specific intersections stood out as crash hot spots:

- ▶ Evans St & US 264, with 162 crashes
- ▶ W Fire Tower Rd & S Memorial Dr, with 144 crashes
- ▶ E Fire Tower Rd & E Arlington Blvd, with 152 crashes
- ▶ US 264 & NC 11/S Memorial Dr, with 138 crashes

Figure 14. Crash Hot Spots

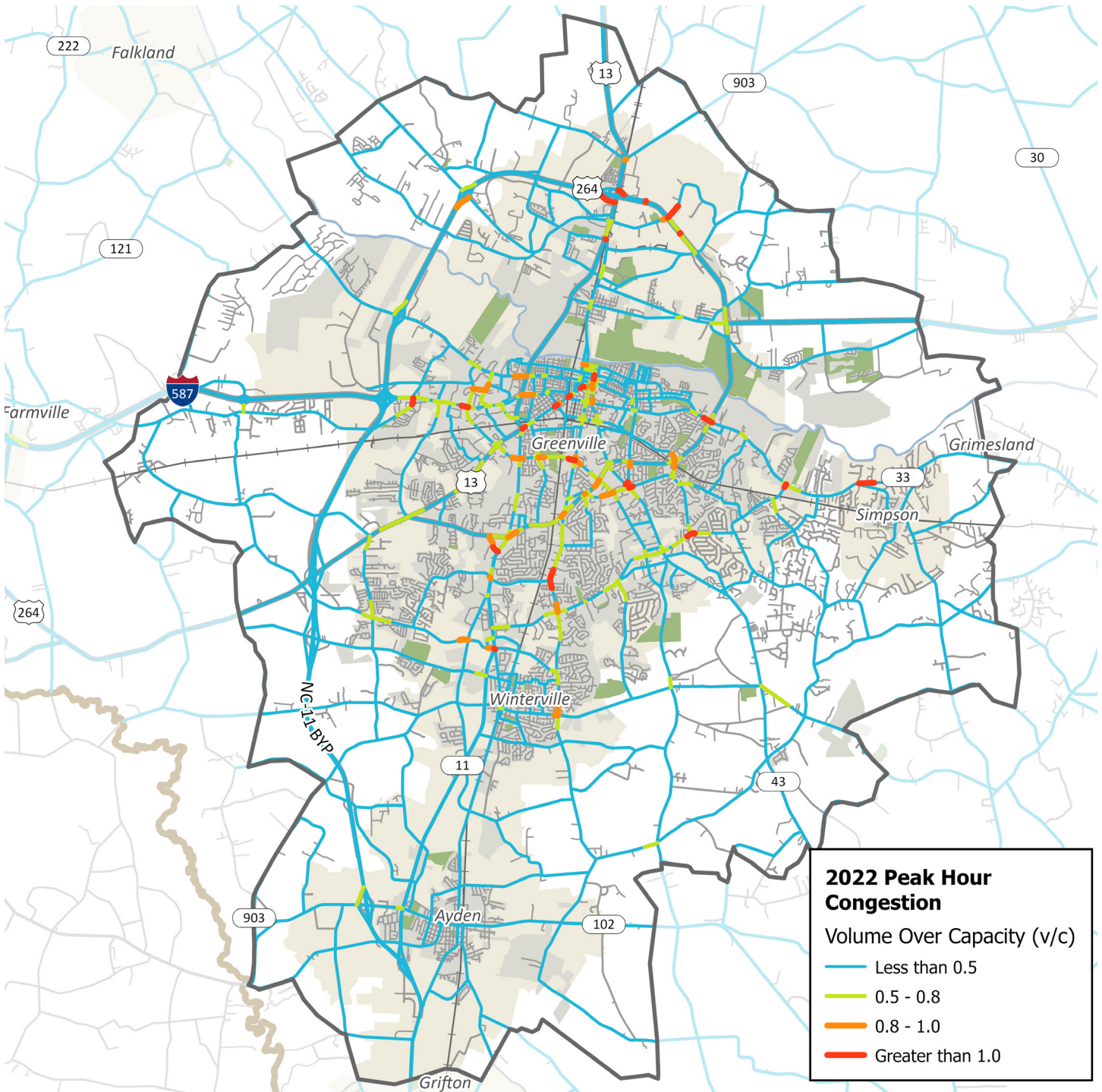


Data sourced from NCDOT Crash Frequency By Intersection (2018 -2022), NCDOT Fatal & Serious Injury Crash Locations (2017 - 2023), NCDOT Bicyclist & Pedestrian Crash Map (2007-2022).

Existing Congestion

Travel demand models simulate the interaction of estimated demand and available supply at a regional scale. Modeled traffic congestion provides system-level insights into congestion issues and can indicate corridors that warrant higher levels of study and analysis or capacity improvements. The Greenville MPO Travel Demand model covers the entirety of Pitt County. For the purposes of this document, current congestion levels are derived from the 2022 Base Year version of the Greenville MPO Travel Demand Model and are symbolized based on volume-to-capacity (V/C) ratios. Roads are approaching capacity at a V/C of 0.8 and above, considered at capacity at a V/C of 1.0, and considered over capacity at a V/C above 1.0. Very few roadways are approaching or are above capacity, and those that are represent key intersections or locations that act as bottlenecks where congestion is expected.

Figure 15. 2022 Peak Hour Congestion

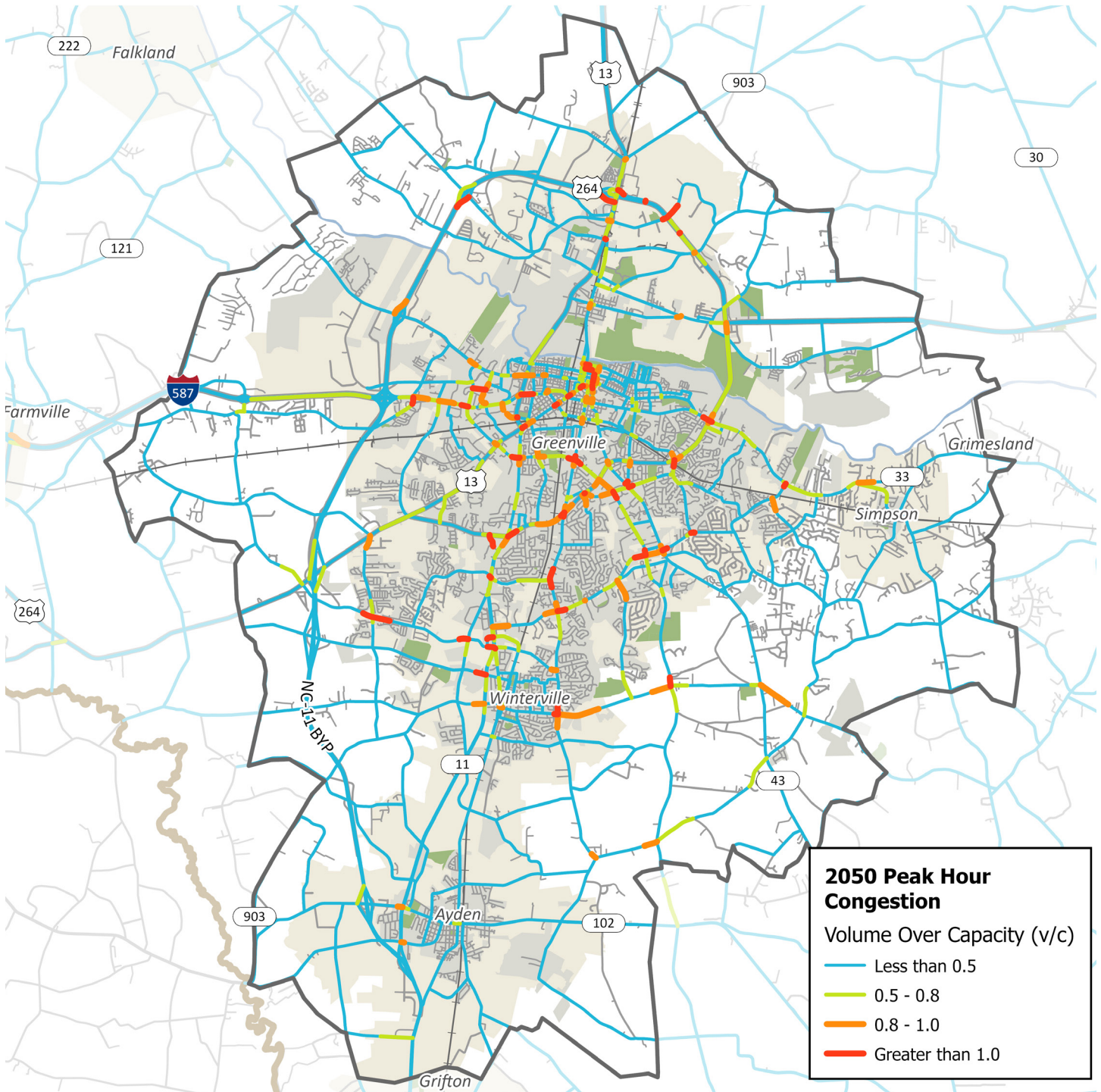


Data sourced from NCDOT GUAMPO Travel Demand Model v2.

Future Congestion

The map below depicts the projected congestion levels in 2050. Compared to current conditions, congestion is expected to worsen over the next 26 years. Although congestion is projected to worsen, the majority of roadways will remain below capacity. Worsening congestion is expected to occur along key corridors within the incorporated areas of downtown Greenville and Winterville. Additionally, key roadways, including Greenville Blvd, Fire Tower Rd, Worthington Rd, Dickinson Ave, and Stantonsburg Rd will experience increases in congestion.

Figure 16. 2050 Peak Hour Congestion

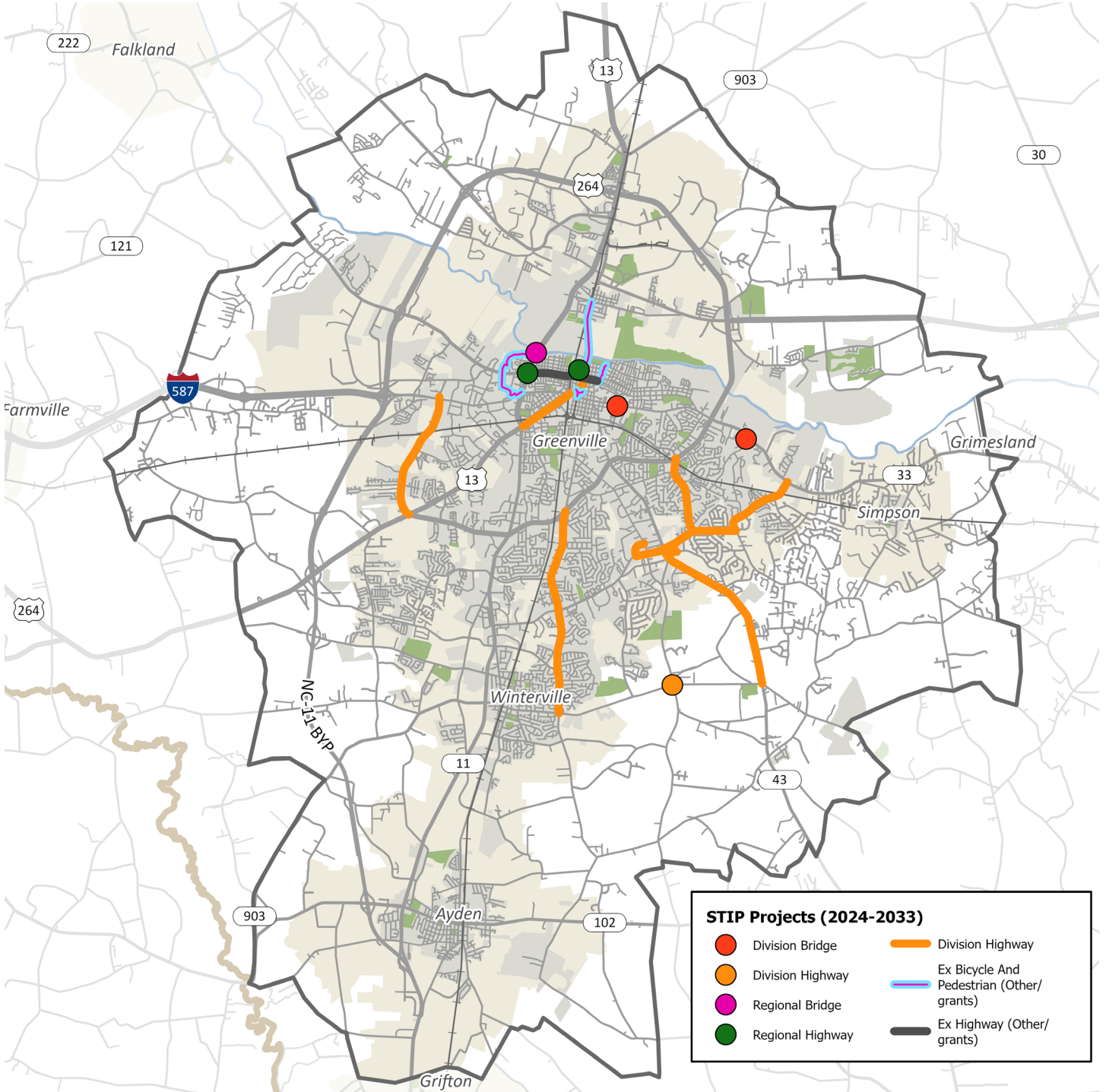


Data sourced from NCDOT GUAMPO Travel Demand Model v2.

Transportation Improvement Program (TIP)

The Statewide Transportation Improvement Program (STIP) is North Carolina’s 10-year state and federally mandated plan that schedules and identifies construction funding for transportation projects throughout the state through 2033. The STIP covers a 10-year period, with the first five years (2024-2028) referred to as the “delivery STIP” and the latter five years (2029-2033) referred to as the “developmental STIP.” The Greenville MPO Transportation Improvement Program (TIP) is a subset of the STIP and is consistent with the projects included in the 2024-2028 delivery STIP. All scheduled and funded NCDOT STIP projects in the area are shown on the map below and listed in the tables on the following pages.

Figure 17. NCDOT STIP Projects



Data sourced from GUAMPO. NCDOT STIP (2024 - 2033).

Table 3. NCDOT STIP Projects

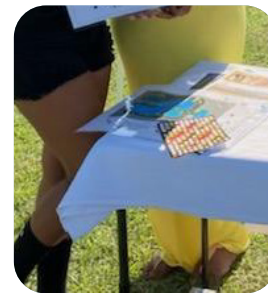
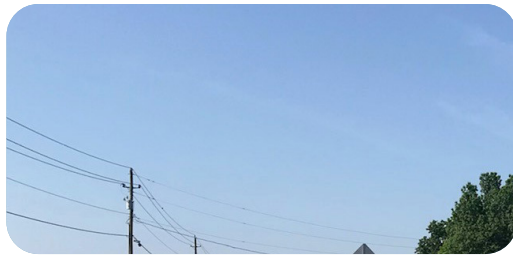
STIP No.	Project Name	STIP	Funding Year	Fund Source	Status
B-4786	Replace Bridge 730038 over Tar River In Greenville.	Delivery	FY 2023 - FY 2024	NHPB	Construction
HB-0021	Replace Bridge 730419 over Meeting House Branch in Greenville.	Delivery	FY 2024 - FY 2025	BGOFF	Utilities; Construction; Right of Way
HB-0022	Replace Bridge 730096 over Greens Mill Run in Greenville.	Developmental	FY 2029 - FY 2031	BGOFF	Utilities; Construction; Right of Way
HL-0099	<i>Unallocated Carbon Reduction Program Funds in the Greenville Planning Organization.</i>	Delivery	FY 2023 - FY 2026	CRPDA; L	Construction
HS-2002	<i>Safety Improvements at various locations in Division 2.</i>	Delivery	FY 2023 - FY 2024	HSIP	Construction; Utilities
HS-2402	<i>Safety Improvements at various locations in division 2.</i>	N/A	N/A	N/A	Programmed for preliminary engineering
I-6035	<i>Greene County line to SR 1467 (Stantonsburg Road) Interchange (Greenville Southwest Bypass). Pavement Rehabilitation.</i>	Delivery; Developmental	FY 2023 - FY 2033	NHPIM	Garvee Con
R-2250	<i>NC 11 to US 264 (Greenville Bypass). Construct Four Lane Divided Facility on New Location with bypass of Winterville.</i>	Delivery	FY 2023	T	Construction
U-2817	SR 1711 (Worthington Road) in Winterville to US 264 Alternative (Greenville Boulevard) in Greenville. Widen to Four Lanes.	Delivery; Developmental	FY 2026 - FY 2030	BG5200; BG50200	Utilities; Right of Way; Construction
U-5606	NC 11 To Reade Circle. Improve Roadway.	Delivery	FY 2023 - FY 2024	BG50200	Construction
U-5730	NC 43 (5th Street). Upgrade Intersection.	Delivery	FY 2023; FY 2026 - FY 2027	T	Utilities; Construction
U-5785	West of East Arlington Boulevard to SR 1704 (Fourteenth Street) in Greenville. Widen to Four Lanes.	Delivery; Developmental	FY 2024 - FY 2031	T	Construction; Utilities; Right of Way
U-5870	SR 1704 (Fourteenth Street) to NC 33 (East 19th Street) in Greenville. Widen to four lanes.	Delivery; Developmental	FY 2024 - FY 2032	T	Construction; Utilities; Right of Way
U-5875	SR 1467 (Stantonsburg Road) to US 13 (Dickinson Avenue Extension). Widen to Four Lanes.	Delivery	FY 2024 - FY 2029	T	Construction; Right of Way
U-5917	Red Banks Road to SR 1708 (Firetower Road). Widen to add median and protected left-turn lanes.	Delivery; Developmental	FY 2023 - FY 2033	T	Construction; Utilities; Right of Way
U-5952	Greenville Signal System.	Delivery; Developmental	FY 2026 - FY 2030	BG50200	Construction; Utilities
U-5991	SR 1708 (Fire Tower Road) To SR 1711 (Worthington Road). Widen to Multi-Lanes.	Delivery; Developmental	FY 2027 - FY 2033	T	Construction; Utilities; Right of Way

STIP No.	Project Name	STIP	Funding Year	Fund Source	Status
U-6125	<i>Oxford Road to SR 1702 (Evans Street). Access Management.</i>	N/A	N/A	N/A	Not Funded
U-6147	<i>US 264A (Greenville Boulevard) to Sr 1726 (Bells Fork Road). Access Management.</i>	N/A	N/A	N/A	Not Funded
U-6195	<i>SR 1204 (B'S Barbeque Road) to NC 11 (Memorial Drive). Access Management.</i>	N/A	N/A	N/A	Not Funded
U-6196	<i>SR 1155 (Red Banks Road) to West 5th Street. Access Management.</i>	N/A	N/A	N/A	Not Funded
U-6197	SR 1725 (County Home Road). Upgrade Intersection.	Delivery; Developmental	FY 2027 - FY 2031	T	Construction; Utilities; Right of Way
U-6215	<i>SR 1755 (Blackjack-Simpson Road) to SR 1760 (Mobley's Bridge Road). Widen to Multi-Lanes.</i>	N/A	N/A	N/A	Not Funded
U-6240	Rehabilitation and Realignment of SR 1571 (West 5th Street) from Cadillac Street to Reade Circle in Greenville.	N/A	N/A	DP; L	Construction; DP funds represent Build Grant Funds
W-5202	<i>Division 2 rumble strips, guardrail, safety and lighting improvements at selected locations.</i>	N/A	N/A	N/A	Division purchase order (DPOC) - In progress
W-5702	<i>Safety improvements at various locations in Division 2.</i>	Delivery	FY 2023	HSIP	Construction; Right of Way
W-5802	<i>Safety improvements at various locations in Division 2.</i>	N/A	N/A	N/A	N/A
EB-6042	Construct multiuse path at various locations including along the Tar River, Moye Boulevard, The Norfolk Southern Rail Corridor, and Town Creek in Greenville.	N/A	N/A	N/A	Construction
BO-2418	Construct greenway/sidepath using existing road and sidewalk along North Greene Street from 1st Street to Mumford Road in Greenville.	N/A	N/A	N/A	Construction; Right of Way

Bold entries are visualized in Figure 15. NCDOT STIP Projects. Data sourced from GUAMPO. NCDOT STIP (2024 - 2033).

Chapter 3

Public Engagement



Introduction

Public involvement is a vital part of successful transportation planning. Strategic engagement involves identifying a variety of community members and leaders to provide meaningful input. A collaborative approach allows for a fuller understanding of a community's desires and needs so that a comprehensive transportation vision can be created. As a result, local staff and the project team reached out to residents, stakeholders, elected officials, and other community representatives throughout the planning process. The following chapter outlines the time frame and strategies used to gather input.

Engagement Objectives

The following engagement goals and objectives guided public outreach throughout the entire process:

Educate and Empower

- ▶ Raise awareness of the MTP.
- ▶ Provide the opportunity for people to identify issues and needs, express their visions and goals, and weigh in on recommendations and priorities.

Participate and Collaborate

- ▶ Interact with and gather input and opinions from those who live, work, play, study, and invest in the Greenville Urban Area
- ▶ Encourage partnership in identifying local needs and priorities

Monitor and Communicate

- ▶ Track whether feedback received during engagement is representative of the region
- ▶ Communicate to participants how their input is incorporated and the influence this input will have on decision-making

Outreach at a Glance

Public engagement occurred throughout the planning process and informed the establishment of plan guiding principles, recommendations, and prioritization. A snapshot of public engagement can be found below. The full public outreach summary can be found in the Appendix.



+850

Individual Participants



+900

Survey Responses



+14,600

Unique Data Points



+40

*Stakeholders
Interviewed*



Public Engagement Opportunities

Steering Committee

The plan's steering committee consisted of 34 representatives from member jurisdictions and agency partners. The committee members had the opportunity to:

- ▶ Provide direction for the development of the plan
- ▶ Share local knowledge of transportation deficiencies and needs
- ▶ Share public engagement opportunities with family, friends, and coworkers
- ▶ Vet and validate multimodal recommendations
- ▶ Review the plan's final content

Over the course of the planning process, the steering committee met three times.

Committee Representation

Periodic updates were also presented to the Greenville MPO Transportation Advisory Committee (TAC) and Technical Coordination Committee (TCC). The TCC's role is to provide guidance and review elements of the MTP and other transportation planning processes. The TCC also advises the TAC. The TAC is the MPO's policy board, which serves as the decision-making body for public investment in transportation infrastructure.

Steering Committee #1

On February 28, 2024, the committee met to discuss the following topics:

- ▶ Project Background
- ▶ Public Involvement Plan
- ▶ Area Snapshot
- ▶ Challenges, Opportunities, and Vision

Steering Committee #2

On April 4, 2024, the committee met to discuss the following topics:

- ▶ Public Engagement Phase #1 Summary
- ▶ Recommendations Development Process
- ▶ Universe of Projects
- ▶ Project Prioritization

Steering Committee #3

On June 12, 2024, the committee met to discuss the following topics:

- ▶ Public Engagement Phase #2 Summary
- ▶ Financial Constraint
- ▶ Draft Report
- ▶ Adoption Process

Stakeholder Interviews

Stakeholder meetings were held between April 11 and April 15, 2024. Through a series of five separate sessions, information was gathered from community leaders. A total of 44 interviewees attended the sessions and provided input and suggestions to help guide the planning process. The stakeholder interviews were conducted in small groups organized around shared interests:

- ▶ Transportation
- ▶ Development
- ▶ Health Care
- ▶ Environmental
- ▶ Community & Civic

The meetings shed light on issues and needs of the transportation system relative to each organization's interest. More importantly, the stakeholder meetings conveyed a resounding sense of excitement and urgency for the Greenville MPO and the improvements currently or soon to be in progress. Key information obtained through the stakeholder interview process is located in the Appendix.



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Key Takeaways

The main themes of the stakeholder interviews included:

- ▶ Expanding multimodal transportation networks
- ▶ Improving safety for all transportation users
- ▶ Strengthening resiliency to local environmental issues
- ▶ Improving regional connectivity for transit
- ▶ Improving transit connections to key employment zones and transportation hubs
- ▶ Expanding roadway capacity and alleviating congestion
- ▶ Expanding opportunities to foster a culture shift in transportation views
- ▶ Incentivizing expansion of the electric vehicle charging network



Federal Planning Factor: *Enhance travel and tourism.*

The Greenville region is a destination for many, whether that be individuals traveling to cheer at an ECU athletic event, enjoying some famous barbecue, or engaging in outdoor recreation. The Greenville region is also a critical healthcare hub for greater Eastern North Carolina, and many individuals travel in daily to receive vital health services. Many of these needs were identified and discussed with stakeholders throughout the planning process and integrated within the plan's recommendations.

Pop-Up Event 1

A common challenge of standard public engagement is reaching the entire community. A best practice to reach members of the community who might otherwise not engage in the planning process is to meet the community at local events. On March 16, 2024, a pop-up was held at the Leroy James Farmers' Market.

At the pop-up event, participants were encouraged to take the public survey and help identify current challenges and opportunities of the existing transportation network. The input gathered at the farmers market was used in the development of project recommendations.



Pop-Up Event 2

A second round of pop-up events were held during the Bites on the Bridge event on May 16, 2024, at the Town Common Park in Greenville, NC, and at the Leroy James Farmers' Market on May 25, 2024. At the events, a map of the draft roadway and intersection recommendations was shared with the public. The recommendations were drafted based on public input from the first survey, the plan's steering committee, targeted stakeholder interviews, and other planning initiatives. Participants who attended the event were asked to identify projects they supported and projects they would want to remove or change.

The various boards and handouts provided background information and asked attendees to review the draft roadway and intersection recommendations. Participants were also directed to the second online survey, where they could provide additional feedback about the draft recommendations.



Online Surveys

During the development of the MTP, two public surveys were launched at critical points in the planning process. The following sections outline the summary results of each survey.

Online Survey #1

To kick off the engagement process, an online survey was launched between March and April 2024. The purpose of the survey was to gather input on the community's priorities and understand the current transportation issues throughout the region. The following summary shows a snapshot of the results. The full summary of Survey 1 can be found in the Appendix.

+780
Total Responses

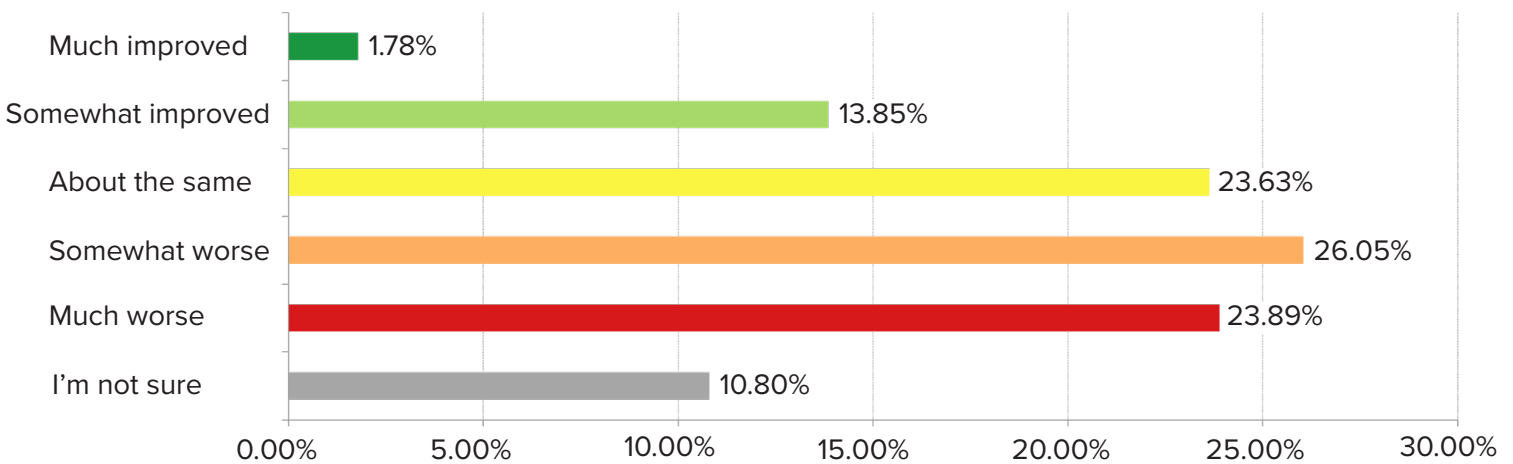
+14,500
Individual Data Points

Current Transportation Conditions

Survey participants were asked to share if they believe the region's transportation system has improved or worsened over the past five years. As a result, the project team could better understand the overall trends in the region's transportation system. The following observations were identified as key takeaways:

- ▶ The majority of participants believe the transportation system in the region has worsened over the past five years, with more than 23% of participants believing the system has become much worse.
- ▶ Only 16% of participants believe the transportation system has improved over the past five years.

Figure 18. Participants Sentiment about the Transportation System



Prioritizing Transportation Improvements

Eleven transportation improvement categories were evaluated to determine which improvements are the highest priority. Survey participants were asked to rank each improvement category. The following observations were identified as key takeaways:

- ▶ Improving & maintaining local roads, improving & expanding bicycle and pedestrian systems, and coordinating traffic signals were most often ranked as the top three transportation improvements.
- ▶ Building new roads, focusing on rail & freight improvements, and enhancing transportation technologies (EV charging, dynamic messaging signs, etc.) were the least ranked transportation improvements.
- ▶ Improving transportation safety ranked in the middle but has been emphasized in responses to other questions.

Ranked Transportation Improvements

- 1 Improving & maintaining our local roads
- 2 Improving & expanding our bicycle & pedestrian system
- 3 Coordinating traffic signals
- 4 Improving intersections
- 5 Improving & expanding our existing public transit services
- 6 Improving transportation safety
- 7 Improving & expanding our highways & interstates
- 8 Replacing & repairing our bridges
- 9 Building new roads
- 10 Focusing on rail and freight improvements
- 11 Enhancing transportation technologies (EV charging, dynamic message signs, etc.)

Opportunities & Challenges

After prioritizing transportation improvements, survey participants were asked to identify opportunity and challenge areas and provide comments about each location. The following observations were identified as key takeaways:

Areas of opportunity common themes:

- ▶ Expand pedestrian facilities and improve pedestrian safety through better design.
- ▶ Increase bicycle and greenway facilities.
- ▶ Widen roads and expand lanes near incoming developments.
- ▶ Install roundabouts and other safety features at intersections.
- ▶ Expand public transit options. Improve both local and regional connections.
- ▶ Expand education resources on pedestrian and bicycle safety.

Challenge areas common themes:

- ▶ Dangerous intersection designs for pedestrians and cyclists.
- ▶ Congestion and safety is worsened by the current intersection designs and level of access on high traffic streets.
- ▶ Roadways are not designed to accommodate current levels of growth.
- ▶ Poor quality roadway infrastructure in rural areas.
- ▶ Lack of transit access and connection to key locations, i.e. Pitt-Greenville Airport.

Key Locations

Common locations for improvements mentioned by survey participants included:

- ▶ Greenville Blvd
- ▶ Fire Tower Rd
- ▶ Arlington Blvd
- ▶ Memorial Dr
- ▶ Charles Blvd
- ▶ 10th St
- ▶ Davenport Farm Rd
- ▶ Evans St
- ▶ 14th St
- ▶ Old Tar Rd

Online Survey #2

In May 2024, an online survey was launched to gather public input on the draft roadway and intersection project recommendations. The recommendations were based on input from other outreach efforts, technical analysis, and guidance from the plan's steering committee. The survey featured an online map where survey participants could drop pins and comments on project recommendations.

Recommendation Feedback

Survey participants were asked to identify recommendations they support and want to be changed or removed. Each pin allowed survey participants to include comments to provide further context about their decisions. The map to the right represents all feedback received from the survey. The following recommendations were identified as key projects:

Access Management on NC 102

- ▶ The majority of survey participants want this project removed or changed. The most common reasons for participants wanting to remove this project included fear of losing front yard space, impacts to parking, and impacts to adjacent businesses.
- ▶ A small portion of survey participants support this project. The main reason is that access management on NC 102 would help alleviate school-related congestion.

Access Management on Fire Tower Rd

- ▶ All survey participants supported access management on Fire Tower Rd. Participants believe this project will improve traffic flow in and out of adjacent subdivisions and commercial developments.
- ▶ Participants emphasized expanding and improving multimodal facilities in addition to access management.

Access Management on US 264

- ▶ Opinions on US 264 were relatively even. Those who support the project believe it will help with traffic and improve safety for drivers. Those who do not support the project believe that improvements along US 264 should focus on expanding bicycle and pedestrian infrastructure.



+15

Total Responses



+110

Individual Data Points

Construction of Greenville Eastern Bypass

- ▶ Opinions on the construction of Greenville Eastern Bypass were relatively even. Those who support the project believe it will help alleviate congestion on other roads within the region. Those who do not support the project believe it will create adverse effects on neighborhoods along the road.

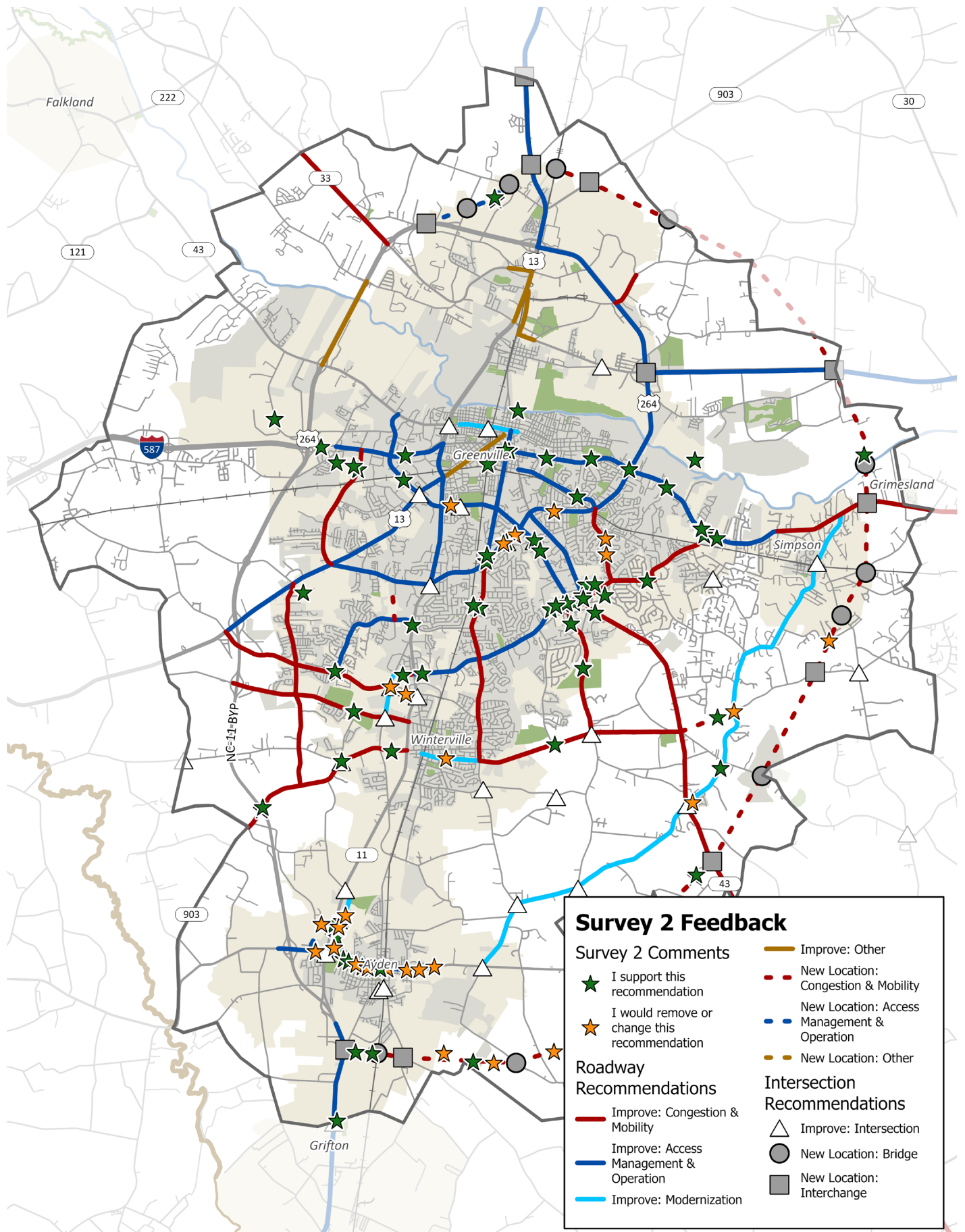
Modernization of Jolly Rd

- ▶ The majority of survey participants want this project removed or changed. Those who do not support this project believe Jolly Rd does not contain enough traffic to justify investing in modernization.
- ▶ A small portion of survey participants support this project. Those who support the project believe modernizing the road will help with traffic.

Access Management on E 10th St

- ▶ All survey participants supported access management on E 10th St. Participants believe this project will slow traffic and improve safety.
- ▶ Participants emphasized improving safety at intersections along E 10th St in addition to access management.

Figure 19. Survey #2 Public Feedback





Chapter 4

Roadway Network



Introduction

One of the unique demands in sustaining a successful and balanced transportation network is ensuring access and connectivity while preserving mobility. This blending of system elements begins with the roadway recommendations. These recommendations also provide a starting point for advancing the concept of complete streets, a street design method that incorporates facilities, improvements, and access for bicycles, pedestrians, and transit users.

As growth occurs and travel demand continues to increase, roadway improvements are needed to manage traffic congestion and improve safety. Often in the Greenville area, neighborhoods and activity centers rely on just a few transportation corridors to provide essential links between home, school, employment, shopping, social, and recreational destinations. To successfully support a vibrant community, roadway improvements should be planned to strengthen these critical connections between activity centers, provide alternative routing options, and support additional travel modes. In this chapter, the process used to identify existing and future roadway needs is presented, along with resulting recommendations for roadway projects.

Corridor Projects

The map to the right highlights the roadway projects in the Greenville Urban Area that were identified through previous planning efforts as well as the Greenville 2050 MTP outreach efforts and needs assessment.

Projects were prioritized through an evaluation process described later in this chapter. This process helped determine the projects that can reasonably be funded by the year 2050. This list of projects, or the financially constrained project list, is outlined in Chapter 7. Due to typical funding levels, only a portion of the needs identified in this plan can be addressed. The remainder of projects will need to be considered and reevaluated in future plans.

Intersection Projects


In total, the MTP recommends 51 intersection and interchange improvements throughout the region. Their locations are shown in the map to the right. Exact locations are shown in the table on the following page. These projects were identified based on safety, operational, or congestion issues. The exact scope of improvements determined here will be identified as projects move forward in the funding cycle.

CORRIDORS


-  **CONGESTION & MOBILITY**
The addition of at least one lane of travel in each direction, usually to address congestion or safety concerns.
-  **ACCESS MANAGEMENT & OPERATION**
Restricting certain turning movements, consolidating driveways, and adding medians to enhance mobility and safety along the corridor.
-  **MODERNIZATION**
Strategies that enhance existing roadways to meet current transportation needs. May include rehabilitating roads, lane reconfiguration, and curb and gutter enhancements.
-  **OTHER IMPROVEMENTS**
Strategies to improve safety and flood resiliency. May include elevating roads, improving drainage systems, or adding traffic calming measures.

INTERSECTIONS

-  **INTERSECTION IMPROVEMENTS**
Locations where multiple intersection improvements will be used. These recommendations will require future study
-  **NEW BRIDGE**
Locations where new bridges will be installed. These recommendations will require future study
-  **NEW INTERCHANGE**
Locations where new interchanges will be installed. These recommendations will require future study.

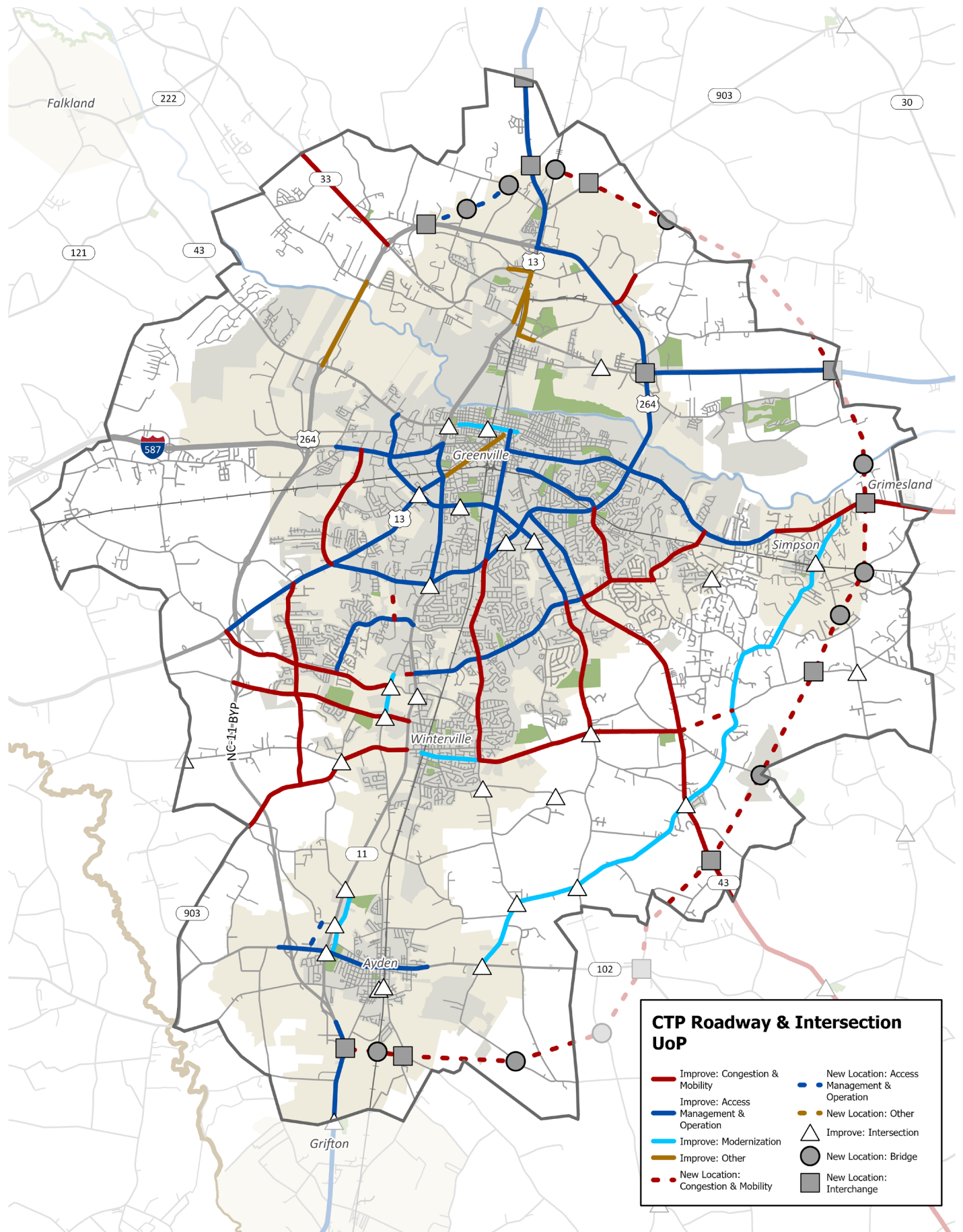
 **Federal Planning Factor:** *Emphasize preservation of the existing transportation system.*

The “Modernization” project type is one way in which the Greenville Urban Area MPO is working to preserve the existing transportation system. Many of these corridors are substandard and when modernized will extend the longevity of the existing road and increase safety.

 **Federal Planning Factor:** *Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.*

The “Other Improvements” project type identifies several segments of road to have the profile raised out of flood-prone areas. These improvements are critical in an area that often experiences inland flooding from hurricanes.

Figure 20. Recommendations



Prioritization

Prioritization is a critical tool for implementation of the identified transportation projects for the Greenville Urban Area. This financially constrained prioritization exercise takes into account a wide variety of factors and project characteristics, including cost, adherence to local and regional guiding principles, economic benefits, and more. This section outlines the details of the prioritization methodology and the results.

Methodology

The assessment of roadway projects for the Greenville Metropolitan Transportation Plan (MTP) includes quantitative and qualitative metrics. The evaluation metrics used for the prioritization methodology leveraged the NCDOT Prioritization 7.0 (P7.0) methodology. The methodology used in this plan was further refined to reflect the guiding principles, availability of local data, and outreach efforts of the 2050 MTP. In coordination with statewide methodology, the roadway and intersection recommendations were analyzed in relation to their respective state funding categories: Statewide Mobility, Regional Impact, and Division Needs. Each of these categories is scored, weighted, and delegated funds differently. Figure 21 shows the Region and Divisions that the Greenville MPO is within and competing for funds with. The following pages outline the assumptions and results of the prioritization methodology.

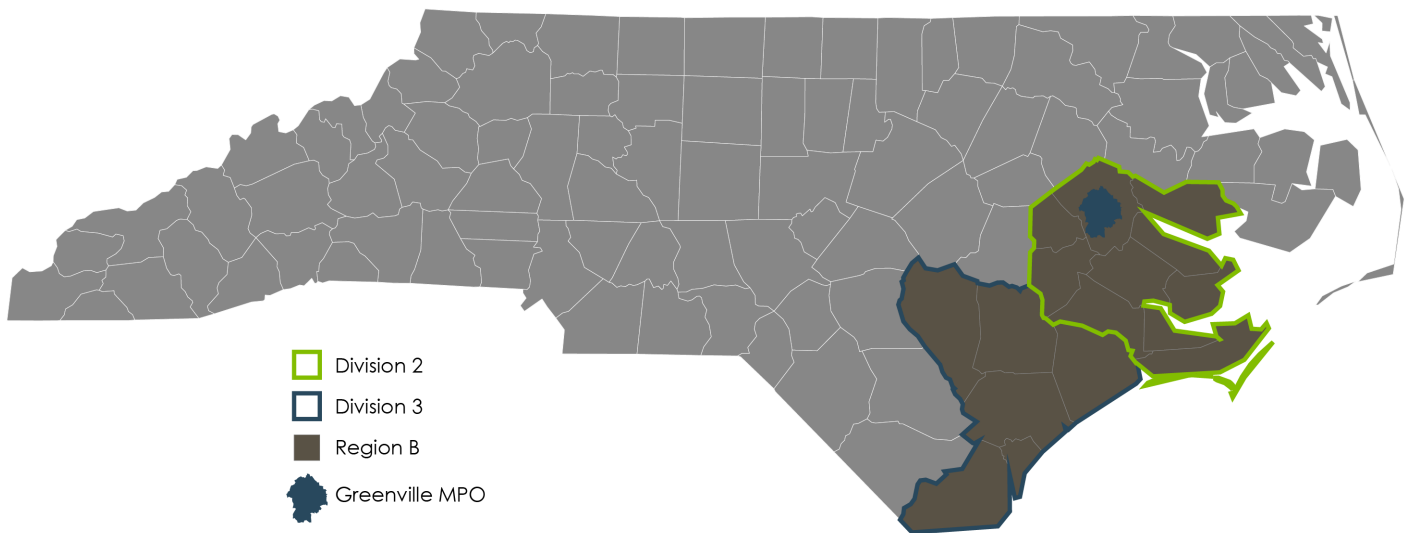
The NCDOT prioritization process scores each project based on a unique methodology depending on the funding category. The three funding categories are:

- ▶ **Statewide Mobility.** Projects in this category receive 40% of available revenue. The projects in this category area scored solely on quantitative data and there is no consideration for local preference.
- ▶ **Regional Impact.** Projects in this category receive 30% of available revenue. The projects are scored based on both quantitative and qualitative data; however the quantitative score is 70% of the overall score and local ranking makes up 30% of the total score.
- ▶ **Division Needs.** Projects in this category receive 30% of available revenue. The projects are scored based on both quantitative and qualitative inputs, which are valued equally in the total score.

Strategic Transportation Investment

The Strategic Transportation Investment (STI) law allows NCDOT to fund transportation infrastructure to support economic growth, promote a higher quality of life, and create jobs. The STI law established the Strategic Mobility Formula, which allocates revenue based on a data-driven scoring and local input process.

Figure 21. NCDOT Division and Region for Prioritization



Project Types

The NCDOT Prioritization 7.0 outlines two types of highway projects: modernization and mobility. The prioritization for each type of project is unique to account for the different benefits associated with each. Due to the nature of the 2050 MTP projects, modernization and mobility projects are blended into a single category for prioritization. The prioritization of 2050 MTP projects reflect many of the 7.0 criteria, but tailored to locally available data.

Scoring

Projects are scored using a combination of 11 different criteria. Once scored, a weight is applied to each criterion within the project type category and the three funding categories to ultimately sort the projects into near-, mid-, and long-term horizon tiers. The prioritization criteria are defined below and the guiding principle(s) that each criterion meet is highlighted as well. The weights used in scoring are shown in Table 5.

Scoring Criteria

Safety

Measure existing high-frequency and high-severity crash locations



Bicycle & Pedestrian Safety

Measure existing high-frequency and high-severity crash locations for cyclists and pedestrians



Congestion

Measure existing and anticipated mobility



Benefit-Cost

Measure the expected benefits of the project with respect to its cost over a 10-year period



Economic Impact

Support a positive economic climate with a transportation system that makes it easier to move people and freight



Lane Width

Measure the existing lane width versus the DOT design standard



Shoulder Width

Measure the existing shoulder width versus the DOT design standard



Pavement Condition

Measure the existing pavement condition along the project



Accessibility

Enhance access to jobs, schools, and social services in rural and marginalized areas



Local Input

Ensure local priorities are identified



Freight

Identify existing key freight movements



Federal Planning Factors: *Increase the safety and security of the transportation system for motorized and non-motorized users.*



When considering project priorities, the 2050 MTP evaluated the safety of motorists, bicyclists, and pedestrians. Projects addressing high crash locations had the ability to rank higher in the overall prioritization process.

The Greenville MPO will be taking a deeper dive into transportation safety later this year with the creation of a Safety Action Plan.

Table 4. Prioritization Weights

Criteria	Mobility Project Weights		
	Statewide Mobility	Regional Impact	Division Needs
Freight	25%	10%	8%
Safety	10%	10%	10%
Bike-Ped Safety	10%	10%	10%
Congestion	30%	20%	15%
Benefit-Cost	15%	15%	8%
Economic Impact	10%	10%	8%
Lane Width			2.5%
Shoulder Width			2.5%
Pavement Condition			3%
Accessibility		10%	8%
Quantitative Total	100%	85%	75%
Local Input		15%	25%
Total Score	100%	100%	100%

Intersection Prioritization Criteria

Following the same considerations as roadway prioritization, intersection prioritization places a large emphasis on safety, as this is the primary concern at intersections. The SPOT process attributes 50% to safety. Other metrics used for intersection prioritization in the Greenville MTP are freight (15%), accessibility (15%), economic impact (10%), and local input (10%).

Table 5. Intersection Prioritization Criteria

Metric	Weight	Guiding Principles Served
Safety	50%	▶ Safety & Security
Freight	15%	▶ Economic Vitality
Accessibility	15%	▶ Equitable Quality of Life
Economic Impact	10%	▶ Economic Vitality
Local Input	10%	▶ Equitable Quality of Life
		▶ Economic Vitality
		▶ Mobility & Accessibility
		▶ Safety, Security & Resiliency
		▶ Network Preservation & Enhancement
		▶ Congestion & Travel Time Reliability

Federal Planning Factor: *Promote efficient system management and operation.*



The MPO understands that the efficiency of our transportation system is often limited by the efficiency of operations at the intersections and interchanges along the corridors. When improved, the intersections identified in Table X will allow the system to more efficiently move both people and goods.

Table 6. Prioritization Results: Corridors (Listed in Priority Order)

Project ID	Project Name	Extents	Type
55-C	Greenville Boulevard	US 264 to US 13	Access Management & Operations
49-C	US 264	US 13 to Beaufort County Line	Access Management & Operations
48-C	US 13/NC 11	Stantonsburg Road to Greenville Boulevard	Access Management & Operations
21-C	Arlington Boulevard	NC 43 to East Fire Tower Road	Access Management & Operations
4-C	Stantonsburg Road	B's Barbecue Road to US 13	Access Management & Operations
3-C	Evans Street	5th Street to Red Bank Road	Access Management & Operations
38-C	US 13	NC 33 to Belvoir Road	Other
6-C	NC 33 / E 10th Street	Evans Street to Oxford Road	Access Management & Operations
30-C	NC 33	West of US 13 to East of US 13	Other
14-C	NC 11 S	NC 11 BYP to Lenoir County Line	Access Management & Operations
53-C	US 13	Edgecombe County Line to US 264	Access Management & Operations
19-C	County Home Road	Fire Tower Road to Worthington Road	Congestion & Mobility
47-C	NC 33	Oxford Road to Blackjack-Simpson Road	Access Management & Operations
20-C	Greenville East BYP	NC 11 to US 264 ALT	Congestion & Mobility
50-C	US 13	NC 11 to Davenport Farm Road	Access Management & Operations
5-C	NC 43	US 264 ALT to Bells Fork Road	Access Management & Operations
51-C	US 264	NC 43 to Old River Road	Other
32-C	Davenport Farm Road	Reedy Branch Road to US 13	Congestion & Mobility
31-C	Evans Street	Red Banks Road to US 264 ALT	Access Management & Operations
16-C	Frontgate Drive Ext	Frontgate Drive to Thomas Langston Road	Congestion & Mobility
35-C	E 14th Street	Charles Boulevard to US 264 ALT	Access Management & Operations
43-C	NC 102 W / Third Street	Second Street to NC 11	Access Management & Operations
24-C	Worthington Road	Old Tar Road to NC 43	Congestion & Mobility
23-C	Old Creek Road	Sugg Parkway to US 264	Congestion & Mobility
18-C	Mobleys Bridge Road Ext	Ivy Road to Worthington Road	Congestion & Mobility
28-C	Frog Level Road	US 13 to NC 903	Congestion & Mobility
42-C	NC 903 S	Abbott Farm Road to NC 11	Congestion & Mobility
29-C	Forlines Road	NC 11 BYP to NC 11	Congestion & Mobility

Project ID	Project Name	Extents	Type
22-C	Frederick Drive Ext	NC 102 to Dennis McLawhorn Road	Access Management & Operations
46-C	NC 33	Mobleys Bridge Road to Beaufort Street	Other
15-C	NC 33 W	Briley Road to US 264	Congestion & Mobility
25-C	Thomas Langston Road	Davenport Farm Road to NC 11	Access Management & Operations
40-C	NC 222	NC 43 to NC 33	Other
17-C	West Fire Tower Road Ext	NC 11 to Reedy Branch Road	Congestion & Mobility
26-C	Reedy Branch Road	Forlines Road to West Fire Tower Road	Modernization
34-C	Ivy Road / Tucker Road / Ayden Golf Club Road	NC 102 to NC 33	Modernization
44-C	NC 43	S Worthington Road to Craven County Line	Congestion & Mobility
41-C	NC 33 W	Edgecombe County Line to NC 222	Other
33-C	Cooper Street	Mill Street to Old Tar Road	Modernization
45-C	NC 33	Beaufort Street to Beaufort County Line	Congestion & Mobility
52-C	US 258 BUS	US 264 to NC 121	Other
36-C	NC 118	Lenoir County Line to Queen Street	Other
2-C	NC 33	Blackjack - Simpson Rd to Mobleys Bridge Road	Congestion & Mobility
27-C	Jolly Road	NC 102 to NC 11	Modernization
37-C	NC 121 / N Main Street	US 264 to US 258 BUS	Other

Table 7. Prioritization Results: Intersections (Listed in Priority Order)

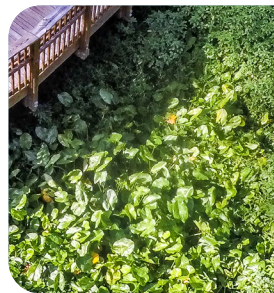
Project ID	Project Name	Type
12-I	NC 102 at Ayden Golf Club Road	Improve Intersection
22-I	US 264 ALT at NC 11	Improve Intersection
38-I	New Location	Interchange
35-I	New Location Interchange at Greenville East BYP at Weyerhause Road	Interchange
25-I	US 264 A at Red Bank Road	Improve Intersection
58-I	NC 11 at Jolly Road	Improve Intersection
44-I	New Location Interchange at Greenville East BYP at US 264 near US 33	Interchange
6-I	NC 43 at Ivy Road	Improve Intersection
57-I	NC 11 at Littlefield Road	Improve Intersection
71-I	New Location Interchange at Greenville Boulevard and US 264	Interchange
13-I	NC 11 at NC 102	Improve Intersection
41-I	New Location Interchange at Greenville East BYP and US 264	Interchange
19-I	Vernon White Road at Mill Street	Improve Intersection
28-I	US 13 at W Arlington Boulevard	Improve Intersection
30-I	NC 43 at Elizabeth Street	Improve Intersection
31-I	NC 33 at Mumford Road	Improve Intersection
43-I	New Location Interchange at Greenville East BYP and US 13/NC 11	Interchange
27-I	Arlington Boulevard at Hooker Road	Improve Intersection
70-I	Pactolus Highway (NC 33) at Mumford Road	Improve Intersection
40-I	New Location Interchange at Greenville East BYP and NC 33	Interchange
14-I	Lee Street at Planters Street	Improve Intersection
42-I	New Location Interchange at Greenville East BYP and NC 903	Interchange
72-I	10th Street at Pitt Street	Improve Intersection
4-I	McDonald Street at Simpson Street	Improve Intersection
59-I	NC 11 at Dennis McLawhorn Road	Improve Intersection
18-I	Forlines Road at Reedy Branch Road	Improve Intersection
26-I	Red Bank Road at Arlington Boulevard	Improve Intersection
36-I	New Location Interchange at Greenville East BYP and NC 11	Interchange
10-I	County Home Road at Ivy Road and Ayden Golf Club Road	Improve Intersection
16-I	Old Tar Road at Laurie Ellis Road	Improve Intersection

Project ID	Project Name	Type
17-I	Davenport Farm Road at Reedy Branch Road	Improve Intersection
15-I	Eastern Pines Road at L T Hardee Road	Improve Intersection
51-I	New Location at Greenville East BYP at Mills Road	Bridge
15-I	Mills Street at West Avenue	Improve Intersection
11-I	Ayden Golf Club Road at Old Tar Road	Improve Intersection
62-I	Jack Jones Road at Laurie Ellis Road	Improve Intersection
63-I	New Location at Greenville East BYP at Briley Road	Bridge
39-I	New Location Interchange at Greenville East BYP at Mobleys Bridge Road	Interchange
61-I	Black Jack Simpson Road at Mobleys Bridge Road	Improve Intersection
45-I	New Location at Greenville East BYP at Fleming School Road	Bridge
48-I	New Location at Greenville East BYP at Tar River	Bridge
52-I	New Location at Greenville East BYP at RR	Bridge
46-I	New Location at Greenville East BYP at NC 11/US 13	Bridge
49-I	New Location at Greenville East BYP at RR	Bridge
50-I	New Location at Greenville East BYP at Black Jack Simpson Road	Bridge
53-I	New Location at Greenville East BYP at Ayden Golf Club Road	Bridge



Chapter 5

Multimodal Recommendations



Introduction

The Greenville Urban Area Metropolitan Transportation Plan acknowledges that regional decisions can enhance mobility and safety for motorists, cyclists, and pedestrians alike. As visualized in Figure 13, developing the system-level recommendations began with a review of previous plans, followed by discussions with stakeholders, Steering Committee members, the public, and local agencies and officials, and recommendations for the roadway network, the most heavily used transportation mode, were explored in the previous chapter. These sources indicate that even as the need persists to move traffic more efficiently, there is a great demand for enhanced bicycle, pedestrian, and transit facilities, as well as an improved freight network to support local and regional economic initiatives. Underlying concepts of modal integration, livability, and connectivity are consistent themes in the coordinated transportation strategies that follow. The plan for roadways coordinates closely with these other elements, notably through an emphasis on incidental projects for cyclists and pedestrians and the general notion that improvements to the roadway network benefit future transit opportunities and expansion. Furthermore, many of the identified roadway projects are designed to support current and future freight movements.

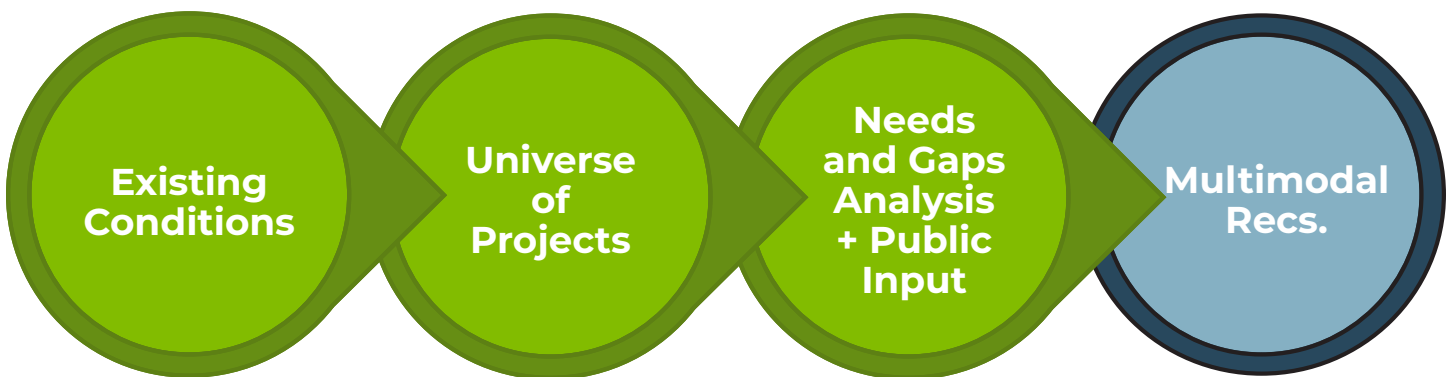
Pitt County Comprehensive Transportation Plan 2.0

From 2020 to 2024, Pitt County collaborated with NCDOT, the Mid-East Rural Planning Organization, the Greenville MPO, and local municipalities to create the Pitt County CTP 2.0. Similar to this 2050 MTP report’s guiding principles, the CTP contains multiple plan goals related to multimodal transportation, including:

- ▶ Increase the safety for users of multiple transportation systems.
- ▶ Increase the accessibility for users of the transportation systems.
- ▶ Provide and promote more integrated and multimodal transportation systems.

To make progress with accomplishing these goals, the CTP evaluated multimodal transportation options and provided recommendations based on current and future needs for highways, public transportation, and cyclists and pedestrians. Each recommendation was developed by analyzing current and future conditions, projected benefits, potential impacts, and feedback from extensive public engagement. For 2050 MTP, the bicycle and pedestrian recommendations build off of the recommendations proposed by the Pitt County CTP 2.0.

Figure 22. Multimodal Planning Process



Bicycle and Pedestrian Recommendations

The proposed bicycle and pedestrian networks are a result of a collaborative planning process that involved extensive public engagement, data collection, and technical analysis. Findings and recommendations from the Pitt County CTP 2.0 provided quantitative data that directly informed the network recommendations. Additionally, more qualitative input from the public and the Steering Committee helped to inform the project team in developing a recommended network of bicycle and pedestrian facilities. The resulting bicycle and pedestrian network maps are shown on the following pages.

Recommendation Types

The 2050 MTP bicycle and pedestrian recommendations feature the following facilities.

On-Street Bike Lanes

An on-street bicycle lane is a marked travel lane along a portion of the roadway that has been designated for preferential or exclusive use for bicyclists.

Separated Bike Lanes

A separated bike lane is a bike facility that is physically separated from vehicle traffic with some barriers, including curbs, planters, or other types of barriers.

Sidepath

A multiuse path that runs parallel to a roadway but is physically separated from vehicular traffic. May be used by bicyclists, pedestrians, and other non-motorized users.

Shared-Use Path

A multiuse path that is separated from the roadway and may be used by bicyclists, pedestrians, and other non-motorized users.

Sidewalk

A sidewalk is a paved pathway for pedestrians, typically located on one or both sides of a road.

10th Street Pedestrian Bridge

A bridge specifically designed for pedestrians and cyclists to cross over 10th Street without having to share space with vehicular traffic.

The Bicycle Network

The bicycle network builds upon existing infrastructure and areas that are bicycle friendly today. The map to the right displays the existing and proposed bicycle networks.

User Types

A complete bicycle network provides infrastructure that enables active transportation to flourish. To create a complete bicycle network, the types of users and facilities must be considered. There are a variety of reasons for biking; therefore, utilizing a combination of facilities that complement each reason and skill level can yield a proactive approach to bicycle planning.

Trip Purpose

- ▶ **Utilitarian.** Non-discretionary trips to work, school, the grocery store, or home.
- ▶ **Recreational.** Trips made to maintain an active, healthy lifestyle or for social engagement.

Skill Level

- ▶ **Child Cyclists.** These users typically have little to no experience on the road.
- ▶ **Basic Adult Cyclists.** Adult cyclists that are typically less secure about riding in traffic without dedicated bicycle facilities.
- ▶ **Advanced Cyclists.** This group is typically the most experienced and confident on the road.

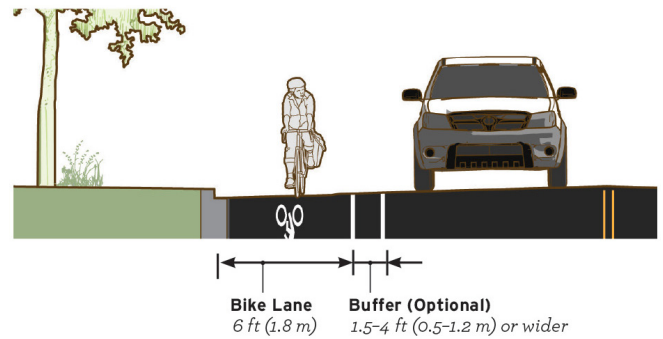
The E's of Bicycle Planning

There are a variety of components that facilitate the implementation of a holistic bicycle network:

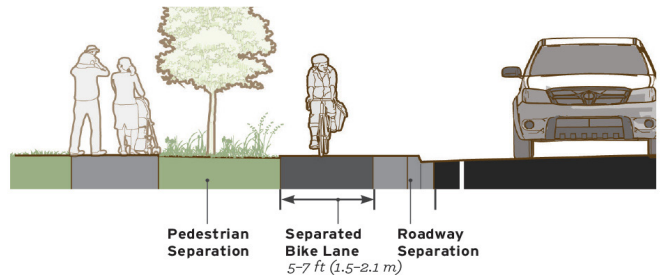
- ▶ **Economics.** The economic return on investment.
- ▶ **Education.** The resources available to teach all ages and abilities to safely and confidently ride.
- ▶ **Encouragement.** The variety of ways to promote community that embraces and celebrates bicycling.
- ▶ **Enforcement.** The intentional actions that protect safety of all ages and abilities.
- ▶ **Engineering.** Both on- and off-road facilities that are safe for people of all ages and abilities.
- ▶ **Equity.** The fairness in decision-making to ensure the needs of all community members are met.
- ▶ **Evaluation.** The review of existing facilities to continuously evaluate and improve solutions.

Featured Facility Types

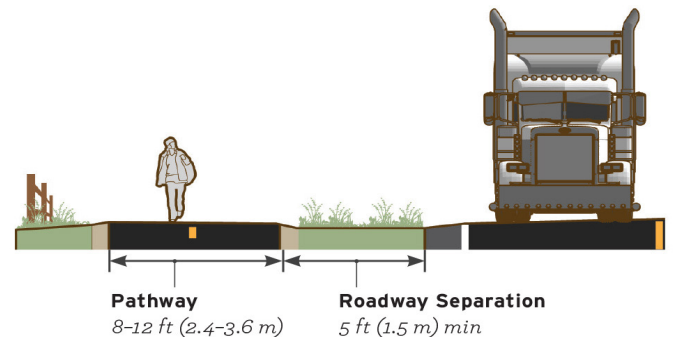
On-Street Bike Lanes



Separated Bike Lanes



Sidepath



Shared Use Path

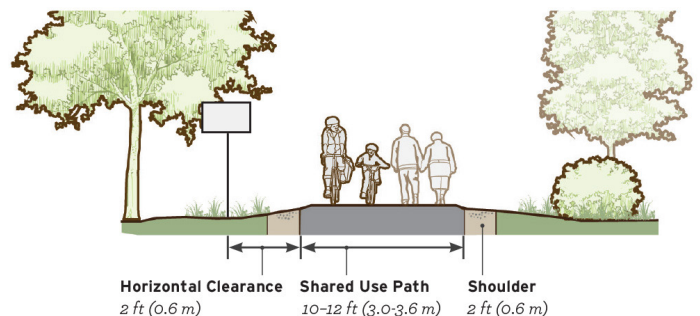
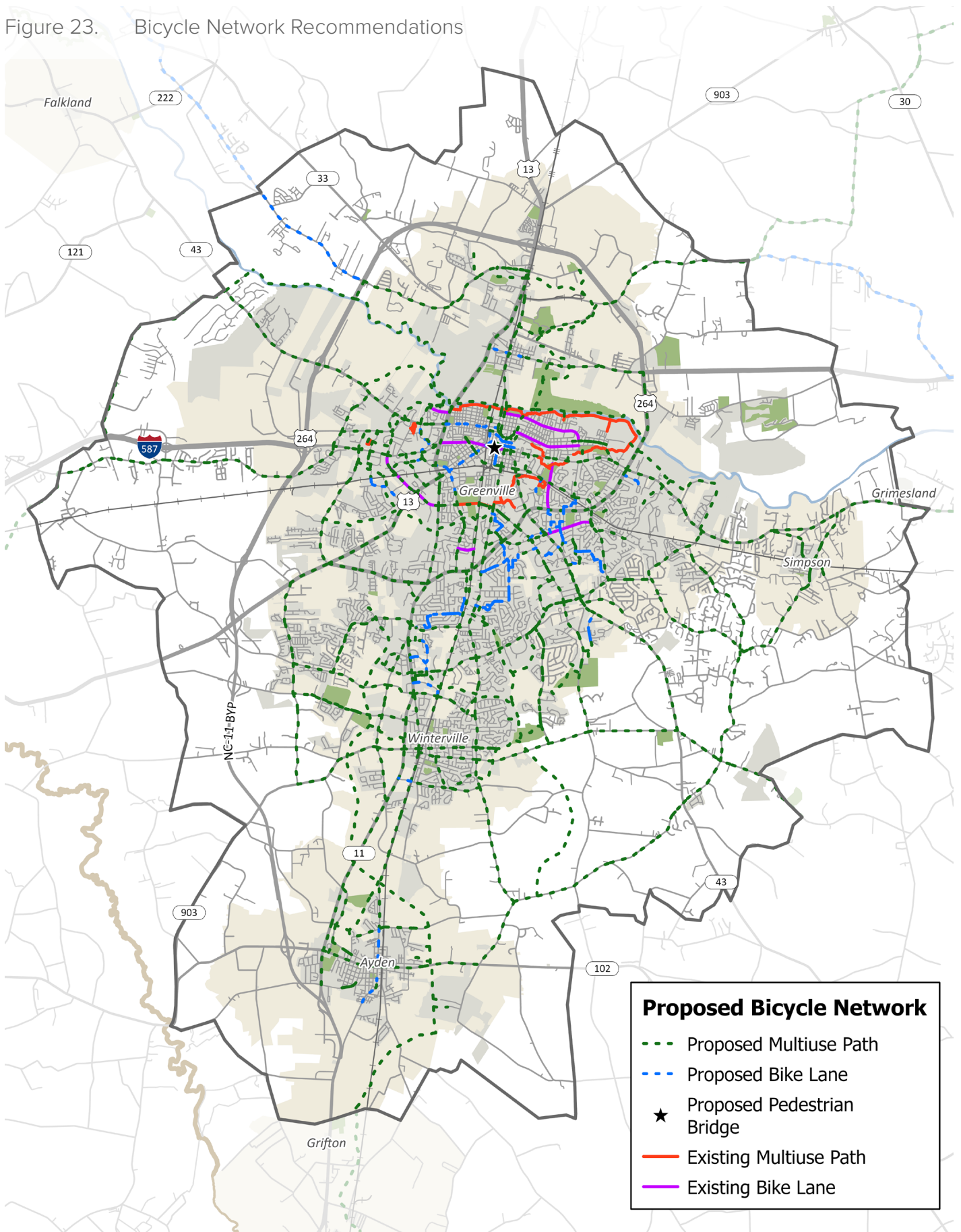


Image sourced from *Small Town and Rural Design Guide*

Figure 23. Bicycle Network Recommendations



The Pedestrian Network

Expanding the pedestrian network and improving walkability in the MPO is a key element of a healthy transportation system. When comprehensive pedestrian networks exist, walking provides an affordable and practical transportation choice for the community. Implementing a variety of features can significantly enhance the appeal of walking. These features can include:

- ▶ Appropriately sized pedestrian facilities.
- ▶ Buffers between the sidewalk and traffic.
- ▶ Aesthetic elements like native street trees or plants.

Additionally, design elements play a crucial role in instilling comfort and confidence in pedestrians. These elements include:

- ▶ Narrowing streets to reduce crossing distance.
- ▶ Implementing traffic calming measures to slow down vehicles.
- ▶ Incorporating signage, crosswalks, and other pedestrian infrastructure.

By utilizing these tools, communities can create a stronger sense of place and foster a safer environment for all individuals.

Based on feedback public feedback and analysis of existing conditions, the current pedestrian network faces various challenges. Pedestrian-friendly areas such as neighborhoods and uptown Greenville are separated by high-speed, high-traffic volume “barrier” roadways. Many of these roadways have existing sidewalks, but due to lack of or limited buffer space, a lack of driveway access management, and high traffic volumes and speeds, some existing sidewalks still offer a low level of service to pedestrians. Additionally, there are gaps in infrastructure throughout the pedestrian network, hurting connectivity.

To address the needs in the MPO, the following strategies were proposed:

- ▶ Close gaps throughout the pedestrian network to promote connectivity within the existing network.
- ▶ Include pedestrian improvements with new roadway projects to encourage the development of complete streets.
- ▶ Provide pedestrian access to and from key destinations, activity centers, and community resources.
- ▶ Perform maintenance on existing pedestrian facilities to improve safety and accessibility for users and to protect infrastructure investments.

The map to the right displays existing and proposed pedestrian networks. The proposed pedestrian recommendations were drawn from previous planning efforts and public outreach. The recommendations were reviewed to ensure they align with the plan’s guiding principles and the roadway and bicycle recommendations. Where possible, the pedestrian recommendations should be built out in tandem with the proposed roadway recommendations. The MPO and local jurisdictions are also encouraged to pursue projects as funding becomes available to fill in network gaps.

Featured Facility Types

Sidewalks

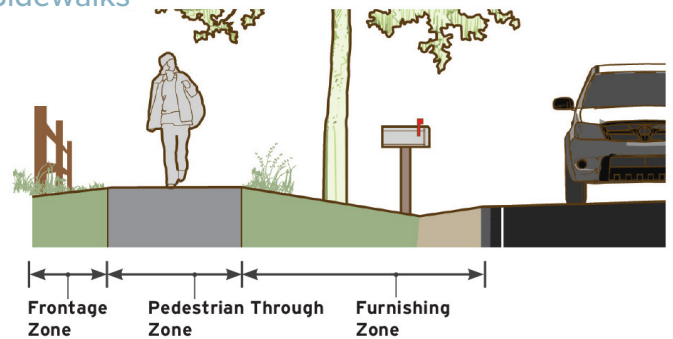


Image sourced from *Small Town and Rural Design Guide*

10th Street Pedestrian Bridge

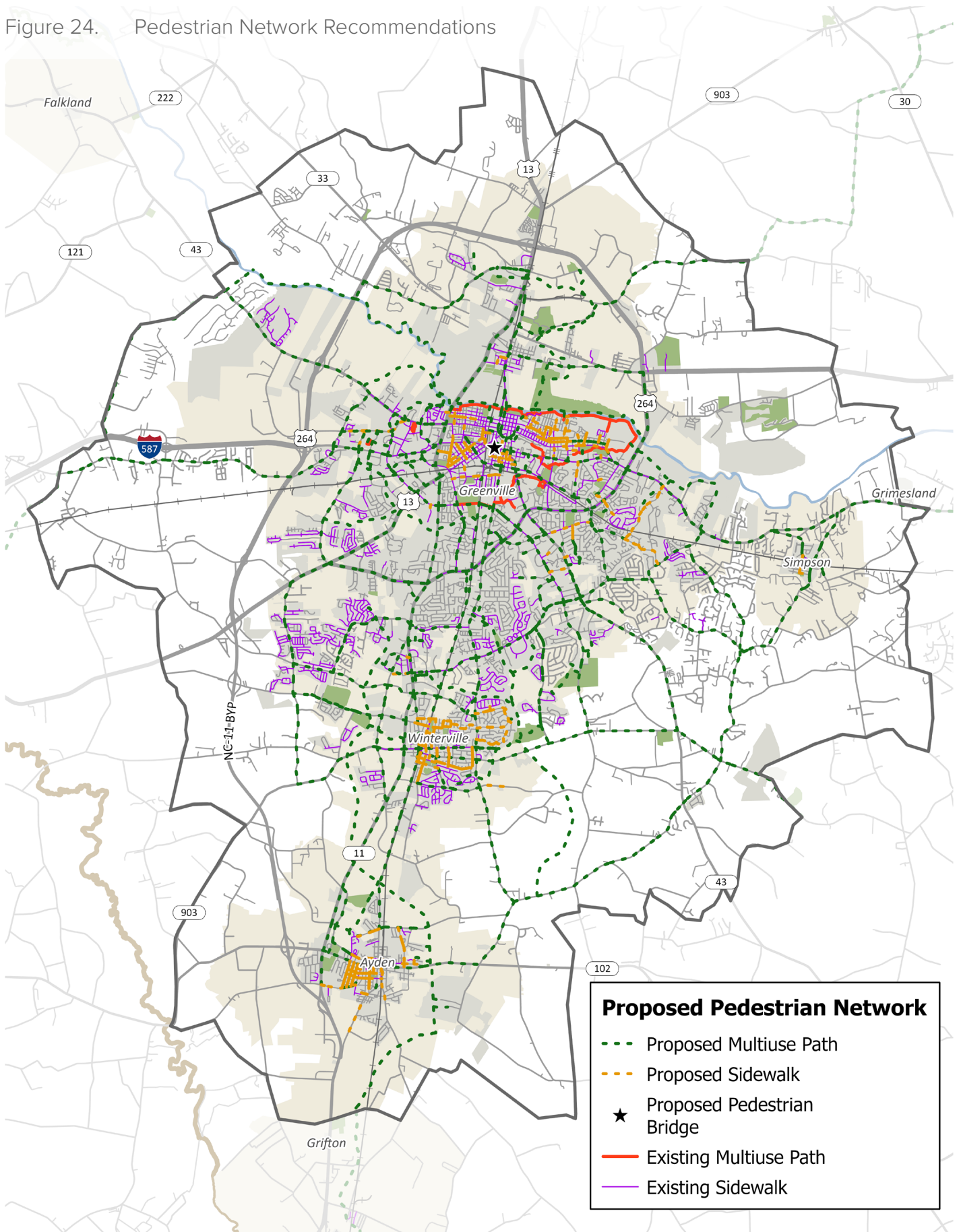


Image sourced from *10th Street Crossing Feasibility Study*

Multiuse Paths

See Page 60 for sidepath and shared-use path imagery.

Figure 24. Pedestrian Network Recommendations



Transit Network

As outlined in the existing conditions analysis, the Greenville Urban Area has a unique opportunity to leverage three growing transit agencies that serve the area: Greenville Area Transit (GREAT), Pitt Area Transit (PATS), and ECU Transit. The transit element of the MTP evaluates recent and ongoing transit planning efforts and recommends policy-based strategies and system-level service improvements to enhance access and mobility for area residents. The plan's recommended improvements for existing services and programs were influenced by the MTP guiding principles and community input.

Recommendations and Considerations

While GREAT, PATS, and ECU Transit are responsible for their own planning efforts, there were several recommendations and considerations that came out of the public and stakeholder outreach process that bear noting. These items are listed below:

- ▶ The MPO should encourage and prioritize efforts that align with the current planning efforts for Greenville Area Transit and ECU Transit.

- ▶ Investigate methods to further integrate Greenville Area Transit and ECU Transit.
- ▶ Considerations should be given to improving the Greyhound Intercity Bus Service to enhance regional transit and connectivity.
- ▶ Make bus stops more accessible by improving seating, shelters, ADA access, and providing safe crosswalks to stops.
- ▶ Improve each services online interface and spread of real-time information.
- ▶ New services are not financially constrained because these will require new funding sources.
- ▶ Expand services to key commercial nodes & transportation hubs, including the Pitt-Greenville Airport.
- ▶ Expand micro-mobility and on-demand services throughout the Greenville Urban Area.

The MTP does not include financial considerations for ECU Transit and the Vidant bus service.



Federal Planning Factor: *Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.*

The Greenville Urban Area MPO is committed to continuing to partner with the three transit agencies serving the planning area to better integrate transit service and improve pedestrian infrastructure along transit routes as roadway projects are identified and funded.



Freight and Aviation Network

The MTP assessed the existing freight network, trends, and public feedback to develop strategies that enhance the movement of goods within and through the region. As the Greenville region continues to grow and the economy places higher demands on the freight network, the condition and efficiency of freight movement into, out of, and through the region will be a major contributor to its economic well-being.

Based on the Eastern North Carolina Regional Freight study, the region’s major freight corridors include US 264, US 13, NC 11, NC 43, NC 33, and NC 903. These corridors connect commercial and economic hubs to locations within the Greenville area and to other regions in eastern North Carolina and beyond. These highways are joined by railroads, airports, and pipelines to complete the region’s freight network. The network’s performance impacts growth and development as well as economic vitality.

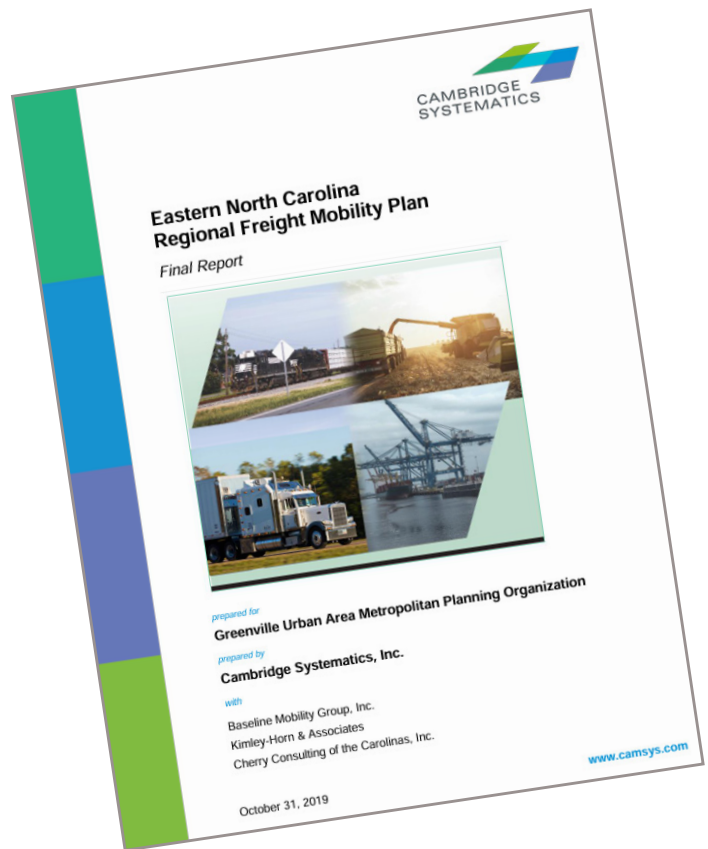
Recommendations and Considerations

Successful freight movement planning efforts incorporate roadway recommendations that increase capacity along select routes. Roadway network improvements should facilitate freight movement; however, the MPO should consider the additional items below:

- ▶ The Greenville MPO should continue to monitor increases in freight activity to ensure infrastructure is in place to efficiently move goods.
- ▶ The Greenville MPO should continue to coordinate with regional, state, and federal planning agencies on freight efforts.
- ▶ Freight considerations have been included as part of the roadway prioritization process.
- ▶ There are four freight rail projects identified in the current STIP that aim to improve safety at rail crossings.

Additionally, the following findings from the regional Eastern North Carolina Regional Freight Study should be considered:

- ▶ Future Interstate 587 will be a key freight corridor, providing greater regional freight connections.
- ▶ The Greenville Urban Area contains a higher than average rate of freight-related crashes, especially along US 264, US 13, and NC 43.
- ▶ Improve freight connectivity between Greenville, Wilson, Goldsboro, and Kinston to create an interstate quality loop.
- ▶ Address freight-related congestion within the Greenville Urban Area and the rural highways around the urban area by implementing access management and widening strategies along key corridors.



Federal Planning Factor: *Increase accessibility and mobility of people and freight.*



Many of the projects in the 2050 MTP have a direct impact on freight mobility within and through the region. The Greenville Urban Area MPO will continue to work with NCDOT Division 2, NCDOT Rail, and other regional agencies to advance the recommendations within this plan and the Eastern NC Regional Freight Study.

Areas of Future Study

The areas for future study identified in this section were items often brought up during the planning process but warranted a deeper dive prior to identifying a solution or strategy. The items below outline the thought process behind each potential study.

Passenger Rail

There is a demand for passenger rail connections to larger regional cities, such as Raleigh. The expansion of Amtrak services to connect Greenville and Raleigh would have economic benefits for both regions. In 2023, the Greenville to Raleigh corridor was not selected for funding from the Corridor Identification & Development Program. This corridor can be resubmitted for future program grant applications. In the future, other passenger rail connections could be made to Raleigh and other points east, to the north (Rocky Mount, Norfolk) and to the south (Wilmington). These regional connections will help to foster economic growth and improve the livability of the Greenville Urban Area.

Micromobility

Micromobility modes, such as e-scooters and bikes, are making impacts across the country and world. As these systems expand, there should be consideration given to how these modes integrate with the current transportation system. Understanding these technologies and others that may be on the horizon will allow the Greenville region to be prepared for future private investments in the micromobility system that will impact the area.

Expanded Connections

As the Greenville Area continues to grow and expand, alternative connections to surrounding communities should be explored. The MPO should work with the Mid East Rural Planning Organization (RPO), which is composed of areas including Pitt, Beaufort, and Martin Counties, to identify potential greenway connections. Two communities that have expressed interest in such connections are nearby Farmville and Washington.



Transportation Technology

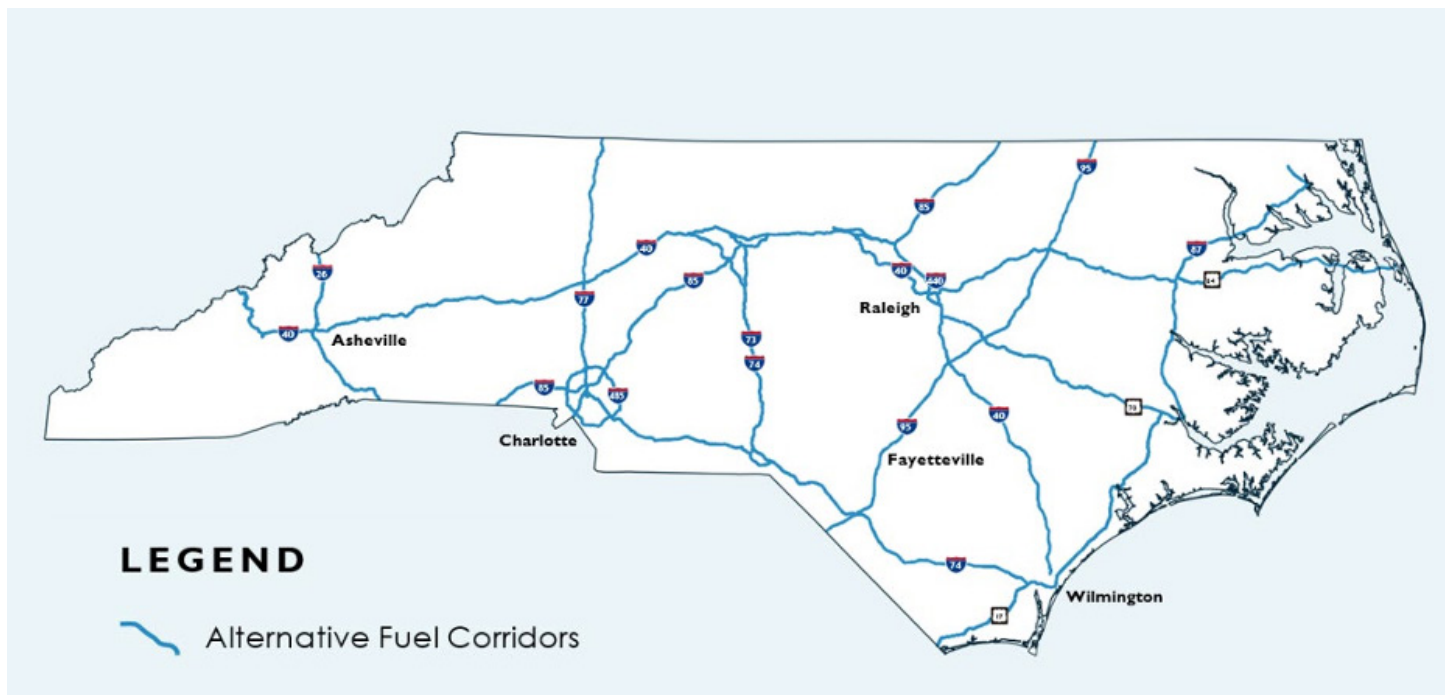
The Infrastructure Investment and Jobs Act (IIJA) introduced new or reinforced areas of focus for metropolitan transportation plans. An emerging emphasis area in transportation technology is electric vehicles or EVs.

Through IIJA, the National Electric Vehicle Infrastructure (NEVI) Program provides almost \$5 billion to help states create a network of electric vehicle charging stations along designated corridors. The North Carolina Electric Vehicle (EV) Infrastructure Deployment Plan is the state's plan to:

- ▶ Accelerate equitable adoption of electric vehicles.
- ▶ Reduce transportation-related greenhouse gas emissions.
- ▶ Position industry to lead transportation electrification efforts.

The North Carolina program will be implemented in two phases over five years. The first phase focuses on building NEVI-compliant stations along alternative fuel corridors (AFCs). The second phase will identify community-based electric vehicle charging opportunities and other supportive infrastructure needs.

Figure 25. North Carolina Alternative Fuel Corridors





Chapter 6

Performance Measures



Introduction

In 2010, the MAP-21 legislation transformed the transportation federal aid program by establishing new requirements for performance management and performance-based planning and programming, designed to ensure the most efficient investment of federal transportation funds. The FAST Act (2015) continued the performance management and performance-based planning and programming requirements of MAP-21 with minor changes. Pursuant to this legislation, state Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) must apply a transportation performance-based planning approach when carrying out their federally-required transportation planning and programming activities. Performance-based planning & programming or “performance management” is a strategic approach that uses system-generated information to make investment and policy decisions to achieve goals set for the multimodal transportation system. Specifically, Performance-Based Planning & Programming (PBPP) refers to the application of performance management as standard practice in the planning and programming decision-making process. These requirements outline a systematic and objective-driven approach to transportation decision-making that supports national goals for the federal-aid highway and public transportation programs.

On May 27, 2016, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) issued the Final Rule on Statewide and Non-metropolitan Transportation Planning and Metropolitan Transportation Planning (The Planning Rule). This regulation requires states and MPOs to adhere to the planning and transportation performance management provisions of MAP-21 and the FAST Act. The recent passage of the Bipartisan Infrastructure Law (BIL, known also as the Infrastructure Investment and Jobs Act, IIJA) on November 15, 2021, continues the commitment to performance-based planning set forth by MAP-21 and the FAST Act.

The Greenville MPO adopted the statewide measures and targets set by NCDOT. In accordance with The Planning Rule, the selection of performance measures and targets must be coordinated and agreed upon between an MPO and NCDOT. As part of the metropolitan transportation planning process, the MPO also must publish a System Performance Report.

The System Performance Report presents the baseline or current condition and performance of the transportation system with respect to these performance measures and targets, and future conditions as data is available.

Role of the System Performance Report

The System Performance Report is an important component of the Transportation Performance Management (TPM) approach set forth by FHWA and FTA. Maintaining a systematic and representative performance management approach allows the Greenville MPO to evaluate how well its transportation system addresses current needs and prepares itself to meet future opportunities and challenges. Since funding for transportation projects is limited, it is important that the right projects and programs are being implemented in order to address the current and projected needs of the region.

This initial system performance report establishes a baseline document, which the MPO will update with each successive long-range plan update. The system performance report and subsequent updates will evaluate the condition and performance of the transportation system with respect to the required performance targets: Highway Safety, Pavement and Bridges, and System Performance. In addition, the report will document the transit asset, safety, and reliability performance and targets that are reported by transit agencies to FTA on an annual basis.

While FHWA will determine whether NCDOT has met or made significant progress toward meeting performance targets, it will not directly assess MPO progress toward meeting targets. However, FHWA and FTA will review MPO performance as part of ongoing transportation planning reviews, including certification reviews and the Federal Planning Finding associated with the approval of the 10-year Statewide Transportation Improvement Program (STIP). If an MPO does not meet or achieve its established targets, the MPO is encouraged to develop a statement that describes how the MPO will work with the State and other partners to meet targets during the next performance period. Each performance area in this report includes a section called “Strategies to Maintain and Improve System Performance.”

National Goal Areas

Highway Safety | PM1

The Safety Performance Measures Final Rule supports the Highway Safety Improvement Program (HSIP) by requiring MPOs to set targets for safety-related performance measures and report progress to state DOTs.

The Safety Performance Management Final Rule establishes five performance measures monitored and reported for all types of public roadways:

- ▶ Number of fatalities
- ▶ Rate of fatalities per 100 million vehicle miles traveled
- ▶ Number of serious injuries
- ▶ Rate of serious injuries per 100 million vehicle miles traveled
- ▶ Number of combined non-motorized fatalities and non-motorized serious injuries

Safety performance targets are provided annually by the States to FHWA as five-year rolling averages for each safety performance measure.

Safety Performance

MPOs can either choose to set performance targets or commit to help implement the state’s targets by planning for and programming safety projects. Rather than setting its own safety targets, the Greenville MPO has chosen to support NCDOT’s safety targets. The performance figures that the MPO has reported for the five safety measures reflect a five-year average for years 2018-2022 and 2020-2024.

The Greenville MPO safety targets are shown in the table below. The 2024 targets were adopted on November 29, 2023, and are in effect until December 31, 2024. The Greenville MPO supports the state’s safety performance targets through its planning and programming activities.

Strategies that Maintain and Improve Safety Performance

- ▶ Identify the region’s high-crash locations and the crash factors involved at those locations.
- ▶ Prioritize safety as part of intersection improvements for all mode users.
- ▶ Identify strategies to reduce travel speed in areas where high-speed crashes occur.
- ▶ Continue to coordinate with NCDOT to program safety projects.

Table 8. Greenville Urban Area MPO Highway Safety (PM1) Performance Targets

Performance Measure	Goal	2018-2022 Average	2020-2024 Average
Number of Fatalities	Reduce total fatalities by 25.73% by December 31, 2024	1,550.6	1,151.7
Fatality Rate*	Reduce fatality rate by 27.11% by December 31, 2024	1.327	0.967
Number of Serious Injuries	Reduce total serious injuries by 34.27% by December 31, 2024	5,038.6	3,312.1
Serious Injury Rate*	Reduce serious injury rate by 35.80% by December 31, 2024	4.311	2.767
Number of Non-Motorized and Serious Injuries	Reduce total non-motorized fatalities and serious injuries 33.27% by December 31, 2024	676.0	451.1

*Rate per 100 million vehicle miles traveled

Pavement and Bridge Conditions | PM2

Effective May 20, 2017, the FHWA published a final rule establishing performance measures for state DOTs to use in managing pavement and bridge performance on the National Highway System (NHS). State DOT targets are set based on asset management analyses and reflect investment strategies that work toward achieving a state of good repair over the life cycle of facilities. State DOTs may establish additional measures and targets that reflect asset management objectives.

The Final Rule establishes the following Pavement Performance Measures:

- ▶ Percent of Interstate pavements in Good condition
- ▶ Percent of Interstate pavements in Poor condition
- ▶ Percent of non-Interstate NHS pavements in Good condition
- ▶ Percent of non-Interstate NHS pavements in Poor condition

The Final Rule also establishes the following Bridge Performance Measures:

- ▶ Percent of NHS bridges by deck area classified as in Good condition
- ▶ Percent of NHS bridges by deck area classified as in Poor condition

Pavement and bridge condition performance is assessed and reported over a four-year performance period. The PM2 rule requires states to establish two-year and four-year performance targets for each PM2 measure. Current two-year targets represent desired pavement and bridge condition at the end of calendar year 2023, while the current four-year targets represent desired condition at the end of calendar year 2025.

State DOT requirements for setting pavement and bridge condition targets are as follows:

- ▶ Percent of Interstate pavements in good and poor condition: Four-year targets required
- ▶ Percent of non-Interstate NHS pavements in good and poor condition: Two-year and four-year targets required
- ▶ Percent of NHS bridges by deck area in good and poor condition: Two-year and four-year targets required

MPOs may either support the state DOT’s four-year targets or establish their own targets within 180 days of the DOT’s establishment of its targets.

Pavement and Bridge Performance

Rather than setting its own pavement and bridge performance targets, the Greenville MPO has chosen to support NCDOT’s pavement and bridge targets and will continue to coordinate with NCDOT in the development of pavement and bridge targets. While these targets are only directly applicable to the NHS network, the Greenville MPO emphasizes these performance areas for all roadways within its jurisdiction.

The NCDOT PM2 – Pavement and Bridge Condition Performance Targets were adopted by the Greenville MPO Technical Advisory Committee (TAC) on June 28, 2023. The Greenville MPO Pavement and Bridge Condition Performance Targets are shown in the table below.

Strategies to Maintain and Improve Pavement and Bridge Performance

- ▶ Implement a data-driven prioritization process and direct funding based on pavement need
- ▶ Continue to coordinate with NCDOT to ensure bridge maintenance is completed on a regular and needed basis

Table 9. Greenville MPO Pavement and Bridge Conditions (PM2) Performance Targets

Performance Measure	2023 Target	2025 Target
Interstate Pavement Condition (Good)	60.0%	62.0%
Interstate Pavement Condition (Poor)	1.8%	1.5%
Non-Interstate NHS Pavement Condition (Good)	30.0%	31.0%
Non-Interstate NHS Pavement Condition (Poor)	3.5%	3.0%
NHS Bridge Conditions (Good)	38.0%	36.0%
NHS Bridge Conditions (Poor)	5.0%	5.0%

System Performance | PM3

Effective May 20, 2017, FHWA published a final rule establishing measures that report on the performance of the Interstate and non-Interstate NHS to carry out the National Highway Performance Program (NHPP) and freight movement on the Interstate system to carry out the National Highway Freight Program (NHFP).

The Final Rule establishes the following system performance measures:

- ▶ Percent of reliable person-miles traveled on the Interstate
- ▶ Percent of reliable person-miles traveled on the non-Interstate NHS
- ▶ Percentage of Interstate system mileage providing for reliable truck travel time – Truck Travel Time Reliability Index

Performance for the PM3 measures is reported over a four-year performance period. The PM3 rule requires states to establish two-year and four-year performance targets for each PM3 measure. The current two-year targets represent expected performance at the end of calendar year 2023, while the current four-year targets represent expected performance at the end of calendar year 2025.

State DOT requirements for setting system performance targets are as follows:

- ▶ Percent of person-miles on the Interstate system that are reliable: Two-year and four-year targets required
- ▶ Percent of person-miles on the non-Interstate NHS that are reliable: Four-year targets required
- ▶ Truck Travel Time Reliability (TTTR): Two-year and four-year targets required

MPOs are required to either support the state four-year targets or establish their own targets within 180 days of the state DOT’s target establishment. Regardless of which targets the MPO chooses to adopt, the targets must be reevaluated and readopted every four years and reflected within the Metropolitan Transportation Plan.

System Performance

Rather than setting its own system performance targets, the Greenville Urban Area MPO has chosen to support NCDOT’s system performance targets and will continue to coordinate with NCDOT in the development of system performance targets.

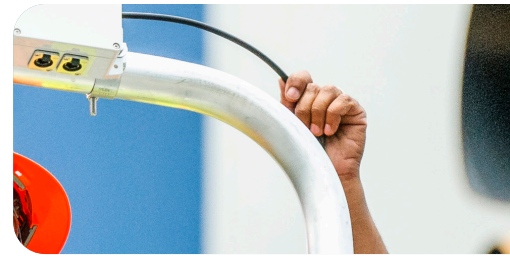
The NCDOT PM3 – System Performance Targets were adopted by the Greenville MPO Technical Advisory Committee (TAC) on June 28, 2023. The Greenville MPO System Performance Targets are shown in Table A4 on the previous page.

Strategies to Maintain and Improve System Performance

- ▶ Continue to monitor travel time reliability as the region continues to grow
- ▶ Work with major regional employers to develop travel demand management strategies and commute alternatives
- ▶ Work with NCDOT to improve signal timing coordination

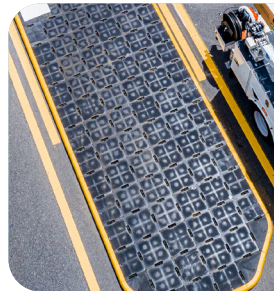
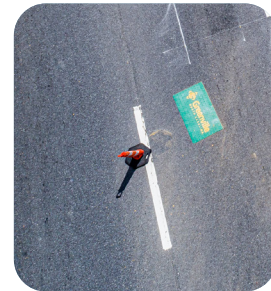
Table 10. Greenville Urban Area MPO System Performance (PM3) Performance Targets

Performance Measure	2023 Target	2025 Target
Interstate Level of Travel Time Reliability	75.0%	75.0%
Non-Interstate NHS Level of Travel Time Reliability	70.0%	70.0%
Interstate Truck Travel Time Reliability	1.70	1.70



Chapter 7

Investing in Transportation



Financial Plan Development

Historically, transportation planning has attempted to balance technical aspects with public engagement. This can make it challenging to evaluate how well the transportation system addresses the community's needs and how well future transportation projects will improve quality of life. The Greenville MTP bridges this disconnect by developing a long-range transportation strategy that combines technical data with engagement results in a quantifiable prioritized process.

In accordance with state and federal requirements, this plan is also financially constrained. This process demonstrates how the recommended and prioritized projects can realistically be funded during the life of the plan. Due to limited transportation funding, it is critical that measures be taken to ensure that appropriate projects and programs are prioritized and eventually implemented.

To do this, the MPO must demonstrate a reasonable expectation of future funding levels, estimate project costs, and project the future needs of all travel modes. The financially-constrained plan allows the MPO and supporting agencies to focus on near-term opportunities and identify strategies for implementation.

This chapter discusses the process used to determine financial constraints, including project prioritization and estimated funding levels. The overall condition of the region is also explored through the lens of performance measurement.

Revenue Forecasts

The Fixing America's Surface Transportation Act (FAST Act), Public Law 114-94, was signed into law on December 4, 2015. The FAST Act funds transportation programs for fiscal years 2016 through 2020. It is the first long-term surface transportation authorization enacted in a decade that provides funding certainty for surface transportation. The FAST Act supports critical transportation projects to ease congestion and facilitate freight movement on major roads by establishing and funding new policies and programs. The FAST Act builds off the prior federal legislation—Public Law 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21)—and continues that law's emphasis on performance evaluation and addresses national priorities, as identified below.

The financially constrained plan, required by the

FAST Act and MAP-21 for regional MTPs, shows proposed investments that are realistically based on future funding availability during the life of the plan and a series of funding availability during the life of the plan and a series of funding periods. Meeting this test is referred to as “financial constraint.” The funding periods identified for The Greenville Area Metropolitan Transportation Plan are:

- ▶ 2024-2028
- ▶ 2029-2033
- ▶ 2034-2040
- ▶ 2041-2050
- ▶ Unfunded Vision

The first two funding periods (2024-2028 and 2029-2033) are reflective of currently adopted Transportation Improvement Program. As such, projects reflected during this time period are considered to be already committed. The third and fourth funding periods (2034-2040 and 2041-2050 respectively).

Revenue forecasts were developed after a review of previous state and local expenditures, current funding trends, and likely funding levels. The revenue forecasts involved consultation with the MPO, NCDOT, and FHWA. All dollar figures discussed in this chapter were initially analyzed in current year dollars (i.e. 2024) and then inflated to reflect the midpoint of the projected opportunity band. Based on an assessment of recent trends and guidance from MPO staff, an annual inflation rate of 2% was used to forecast revenues. FHWA guidance suggested an annual inflation rate of 4% to forecast costs. These differing projections suggest that costs will increase at a greater rate than available revenues.

This chapter provides an overview of revenue assumptions, probable cost estimates, financial strategies, and detailed research results used to derive these values. Since this is a planning level funding exercise, all funding programs, projects, and assumptions will have to be reevaluated in subsequent plan updates.

Capital Roadway Funding

Projections of funding for capital roadway projects are based in large part on current funding levels shown in the FY 2024-2033 Statewide Transportation Improvement Program (STIP). The Greenville MPO has a total of \$332 million funded for roadway capital projects in the 2024-2033 STIP. Revenue forecasts were adjusted within the MTP's projection period to reflect a 2% inflation rate. Local funds, composed of the Powell Bill capital roadway project allocation within Greenville, Winterville, Ayden, and Simpson, and the City of Greenville Capital Improvement Program, were also estimated and then projected out to 2050 without the addition of inflation to better account for historical trends.

Using this forecasting methodology, the available capital highway funding for the Greenville Area MPO totals over \$1 billion over the life of the MTP. The table below summarizes the anticipated capital roadway funding broken out by Federal/State and local funding.

Table 11. Capital Roadway Funding by Horizon Year

Horizon Band	Federal/State	Local	Total Capital
2024-2028	\$190,015,000	\$1,270,000	\$191,285,000
2029-2033	\$142,175,000	\$1,270,000	\$143,445,000
2034-2040	\$251,897,000	\$1,270,000	\$253,675,000
2041-2050	\$426,179,000	\$1,270,000	\$428,719,000
Total	\$1,010,266,000	\$6,858,000	\$1,017,124,000

Roadway Maintenance Funding

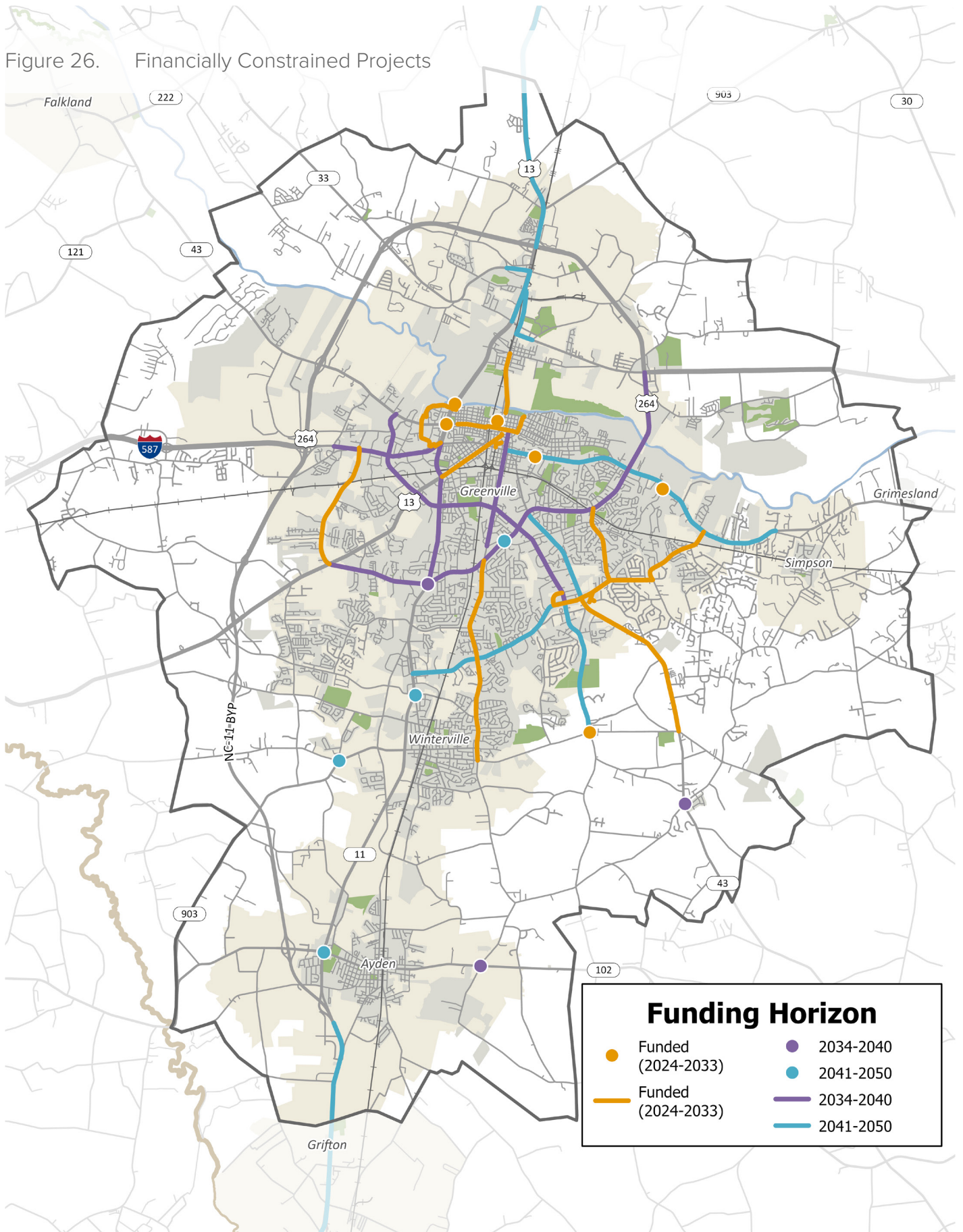
Although the Greenville MTP is primarily focused on capital improvements to the multimodal system, maintenance funding also needs to be considered. Maintenance funding in the Greenville region is applied to areas such as roadway maintenance, bridge replacements, or bicycle and pedestrian infrastructure. Maintenance of these types of uses is funded either by state and federal sources or by local sources, depending on the ownership of the facility being considered. Future-year maintenance funding was not projected. However, it is reasonable to assume that all maintenance funding that is made available within the MPO area will be fully utilized.

The following table presents the projects in 2034-2040, 2041-2050, and Vision (Unfunded) Bands and their cost estimates inflated to the midpoint year of the opportunity band. Each of these lists of projects is constrained based on the amount of revenue projected to be available during the opportunity band time period. Unfunded Vision projects, while not projected to receive funding as a part of this plan, are still considered viable recommendations and as so remain in the plan in Chapter 4. The supporting map following this table shows the roadway projects including all of the time periods of the MTP.

Table 12. Financially Constrained Project List by Horizon Year

Project ID	Project Name	Extents	Project Cost (in 2023 \$)
2034-2040			
55-C	US 264 ALT (Greenville Boulevard)	US 264 to US 13	\$40,244,000
48-C	US 13 / NC 11	Stantonsburg Rd to US 264 ALT	\$19,373,000
21-C	Arlington Blvd	NC 43 to East Fire Tower Rd	\$122,543,000
4-C	Stantonsburg Rd	B's Barbeque Rd to US 13	\$30,099,000
3-C	Evans St	5th St to Red Banks Rd	\$31,716,000
12-I	NC 102 at Ayden Golf Club Rd		\$1,850,000
22-I	US 264 ALT at NC 11		\$3,701,000
6-I	NC 43 at Ivy Rd		\$1,850,000
2041-2050			
38-C	US 13	NC 33 to Belvoir Rd	\$19,424,000
6-C	NC 33 / E 10th St	Evans St to Oxford Rd	\$59,454,000
30-C	Fire Tower Rd	NC 11 to NC 43	\$35,633,000
39-C	NC 33	West of US 13 to East of US 13	\$23,914,000
14-C	NC 11 S	NC 11 BYP to Lenior County Line	\$71,143,000
53-C	US 13	Edgecombe County Line to US 264	\$58,342,000
19-C	County Home Rd	Fire Tower Rd to Worthington Rd	\$71,704,000
47-C	NC 33	Oxford Rd to Blackjack - Simpson Rd	\$49,218,000
5-C	NC 43	US 264 ALT to Bells Fork Rd	\$19,391,000
20-I	NC 903 at Pocosin Rd and Red Forbes Rd		\$4,870,000
25-I	US 264A at Red Bank Rd		\$4,870,000
13-I	NC 11 at NC 102		\$4,870,000
19-I	Vernon White Rd at Mills St		\$2,435,000

Figure 26. Financially Constrained Projects



Active Transportation

Bicycle and Pedestrian Maintenance Funding

Currently, funding for bicycle and pedestrian maintenance can be provided using Powell Bill funds or other local funding. However, none of the member jurisdictions have a dedicated amount of funding set aside for the up-keep of bicycle and pedestrian facilities. Pedestrian and bicycle facilities that are part of state-maintained facilities are typically maintained as part of those larger facilities.

Bicycle and Pedestrian Capital Funding

Currently, new bicycle and pedestrian facilities in the Greenville Urban Area are primarily funded using federal programs, discretionary funds, and local dollars. There are five bicycle and pedestrian projects included in the 2024-2033 STIP. Additional information on bicycle and pedestrian projects and funding can be found in the Greenville Active Transportation Plan.

In order to ascertain potential future funds available for these projects, the amount currently dedicated to bicycle and pedestrian projects in FY 2024-2033 STIP was combined with 25% of the annual capital Powell Bill funding allocation for Greenville, Winterville, Ayden, and Simpson. In generating future revenues, Powell Bill allocations were not inflated, and state funding revenues are inflated by 2% annually starting in 2028. Using this methodology, the available bicycle and pedestrian funding for the duration of the 2050 MTP is estimated to total \$10,429,600.

Table 13. Anticipated Capital Funding for Active Transportation by Revenue Band

Horizon Band	Revenues
2024-2028	\$4,854,000
2029-2033	\$1,154,000
2034-2040	\$4,421,600
2041-2050	\$7,055,000
Total	\$17,484,600

Public Transportation

The table below reflects the proposed costs and revenues for public transportation projects over the life of the metropolitan transportation plan. The costs and revenues are broken up between public transportation capital projects and operations and maintenance based on the City of Greenville’s Capital Improvement Plan and National Transit Data for the Pitt Area Transit System. No funding is programed in the current STIP for public transportation in the Greenville Urban Area. An annual inflation value of 2% was applied to these operations and maintenance funding levels as well. The Greenville Area MPO will continue to work closely with NCDOT and Greenville Area Transit to understand the financial needs of the transit system into the future. Greenville Area Transit will continue to provide more detailed insight into their costs and revenues through their own independent planning efforts.

Table 14. Anticipated Transit Funding by Revenue Band

Horizon Band	Capital	O&M
2024-2028	\$3,951,000	\$20,512,000
2029-2033	\$3,752,000	\$20,512,000
2034-2040	\$5,840,000	\$31,106,000
2041-2050	\$9,882,000	\$52,632,000
Total	\$23,425,000	\$124,762,000

Aviation and Freight

Aviation projects are funded using a blend of state and federal funding. The 2024-2033 STIP did not include any aviation projects. As such, the 2018-2027 STIP was used to understand historic funding. The table below does not reflect any local capital, operations, or maintenance funding. The Pitt-Greenville Airport Authority prepares its own financial assessments, which identifies the near- and long-term funding resources.

While the MPO doesn't include rail recommendations within the MTP, historical revenue data was used to project anticipated funding for rail projects. The table below summarizes the anticipated funding based on the 2024-2033 STIP.

Table 15. Anticipated Aviation Funding by Revenue Band

Horizon Band	Revenues
2024-2028	\$3,852,000
2029-2033	-
2034-2040	\$2,696,000
2041-2050	\$3,852,000
Total	\$10,400,000

Table 16. Anticipated Freight Funding by Revenue Band

Horizon Band	Revenues
2024-2028	\$1,582,000
2029-2033	-
2034-2040	\$1,199,700
2041-2050	\$2,029,500
Total	\$4,811,200

Conclusion

The Greenville Urban Area MTP envisions a region that ensures equitable access to reliable transportation, provides a wide variety of travel options, and promotes a high quality of life throughout. This plan is a regional vision for mobility that supports economic development and social equity while complementing the natural and man-made qualities that make the Greenville region unique. Included in the Greenville MTP are transportation strategies that consider the existing and future needs of residents, visitors, and employers. The creation of this financially constrained plan ensures that the identified projects can reasonably be funded and implemented during the life of the MTP and that the priorities expressed throughout the public involvement process will influence the region's transportation planning decisions.

The Greenville Urban Area MTP is more than just a plan and path to funding transportation projects. With this document, the leaders and citizens of the Greenville area can set the stage for the region's future and how this region will accommodate its needs in the coming decades.

As the region moves forward and projects advance toward funding and implementation, the Greenville Urban Area MPO will continue to work with NCDOT, FHWA, and FTA to determine how best to advance recommended projects and will continue to engage the public to adjust future planning efforts and project lists as necessary. Ultimately, continued collaboration between state, local agencies, and the general public will provide more opportunities to foster a safe and well-balanced multimodal transportation system that makes the Greenville Urban Area a great place to live.