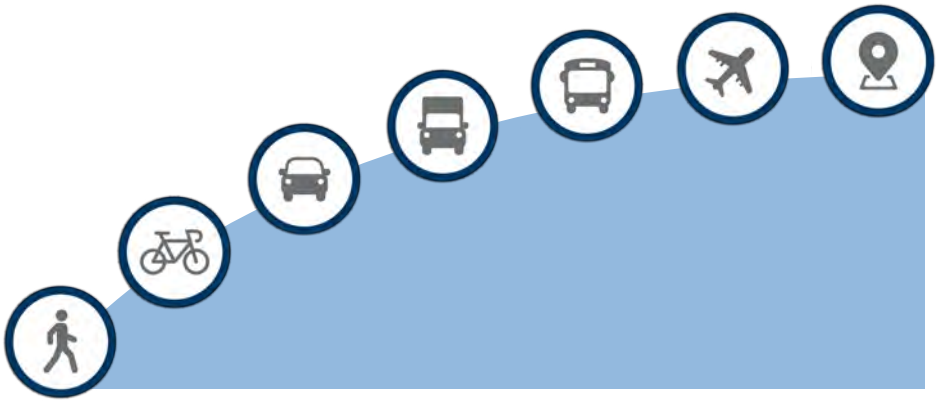
Jacksonville Urban Area
Metropolitan Planning Organization

2045 LONG RANGE TRANSPORTATION PLAN

Draft -
January 2020



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Acknowledgements

The Jacksonville Urban Area Metropolitan Planning Organization thanks the diverse group of participants whose input was instrumental in creating a blueprint for a coordinated transportation system that provides real choice among modes of travel.

The JUMPO 2045 Long Range Transportation Plan is the direct result of a collaborative effort between the City of Jacksonville and Onslow County with support from the North Carolina Department of Transportation.

We extend our sincere appreciation to the elected officials, residents, stakeholders, and local staff who participated in the planning process and guided the development of this plan. Everyone's time, input, and energy are greatly appreciated.

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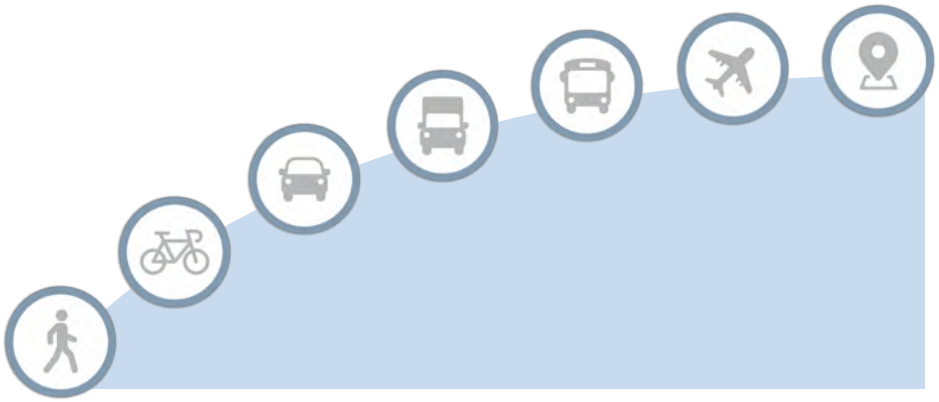


Introduction

As a central component of daily life and something that affects everyone, transportation represents a critical component of an area's social and man-made infrastructure. The *Jacksonville Urban Area Metropolitan Planning Organization 2045 Metropolitan Transportation Plan (JUMPO 2045 MTP)* defines the community's strategy for creating a regional transportation system that accommodates the current mobility needs of residents and looks to the future to anticipate where new needs may arise. The *JUMPO 2045 MTP* is a financially constrained plan, meaning it identifies projects and programs that can reasonably be implemented within the years of the plan. In response to federal mandates and the desires of local residents, the long range transportation plan addresses all modes of transport, including automobile, bicycle, pedestrian, transit, air, and rail movements.

The *JUMPO 2045 MTP* blends the community's vision for transportation and a review of existing conditions with a detailed list of policies, operational strategies, and projects to achieve this vision. The document provides a brief overview of existing conditions and describes a coordinated set of recommendations over the course of three chapters—public transportation, active transportation, and future multimodal transportation system. A chapter that describes the financial analysis and the final chapter which encompasses performance management. The visioning, analysis, and recommendations were created concurrently to ensure individual projects lead to an integrated intermodal transportation system that efficiently moves people and goods within and beyond the Jacksonville area.

Background

The scope for the *JUMPO 2045 MTP* includes establishing goals for the region, reviewing current plans and studies, analyzing transportation and land use conditions, engaging stakeholders and the community, identifying multimodal recommendations, and developing a financially-constrained plan. The *JUMPO 2045 MTP* is the largest, most far-reaching, planning effort required by the Jacksonville Urban Area Metropolitan Planning Organization (JUMPO).

There were two major updates to the 2040 MTP. Adopted in March 2018, Amendment #1 included the safety performance targets as required by FHWA and NCDOT. Building on this, Amendment #1A further incorporated performance measures by including the NCDOT adopted targets for pavement, bridge maintenance, system performance, freight and transit asset management. Additionally, this Amendment also included updated bicycle, pedestrian and collector street maps.

Endorsed in January 2020 by the Transportation Advisory Committee, JUMPO is in the process of expanding its planning boundary to include all of Onslow County. Once the planning boundary has been expanded, the MPO will be required to complete a new MTP. It is the intent of the MPO to update the 2040 MTP with minimal changes and incorporating the previous amendments, this will serve as the 2045 MTP.

Reason for the Plan

JUMPO is the regional transportation planning organization for the Jacksonville, NC metropolitan area. JUMPO consists of representatives from the City of Jacksonville, Onslow County, the North Carolina Department of Transportation, and area military bases. JUMPO facilitates a regional, cooperative planning process that serves as the basis for spending the region's state and federal transportation funds for improvements to streets, highways, bridges, public transit, bicycle and pedestrian networks.

The metropolitan transportation plan characterizes current and future transportation needs and provides multimodal transportation strategies to address these needs. The plan must be reviewed and updated every five years. The *JUMPO 2045 MTP* outlines the region's long-range transportation vision and identifies the projects that are necessary through the year 2045 in order to attain that vision. Most importantly, federal funding cannot be allocated to transportation projects unless they are included within the list of projects in the long range transportation plan. The projects must be fiscally constrained, meaning that JUMPO cannot plan to spend more money than it reasonably expects to receive.

Federal Transportation Requirements (MAP-21)

The *JUMPO 2045 MTP* is governed by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was signed into law on July 6, 2012. The goals of MAP-21 include strengthening America's highways, establishing a performance-based program, creating jobs and supporting economic growth, supporting the United States Department of Transportation's aggressive safety agenda, streamlining Federal Highway transportation programs, and accelerating project delivery and promoting innovation. These goals are illustrated through eight broad planning factors identified for special focus within the metropolitan planning organization's (MPO) long range transportation planning program.

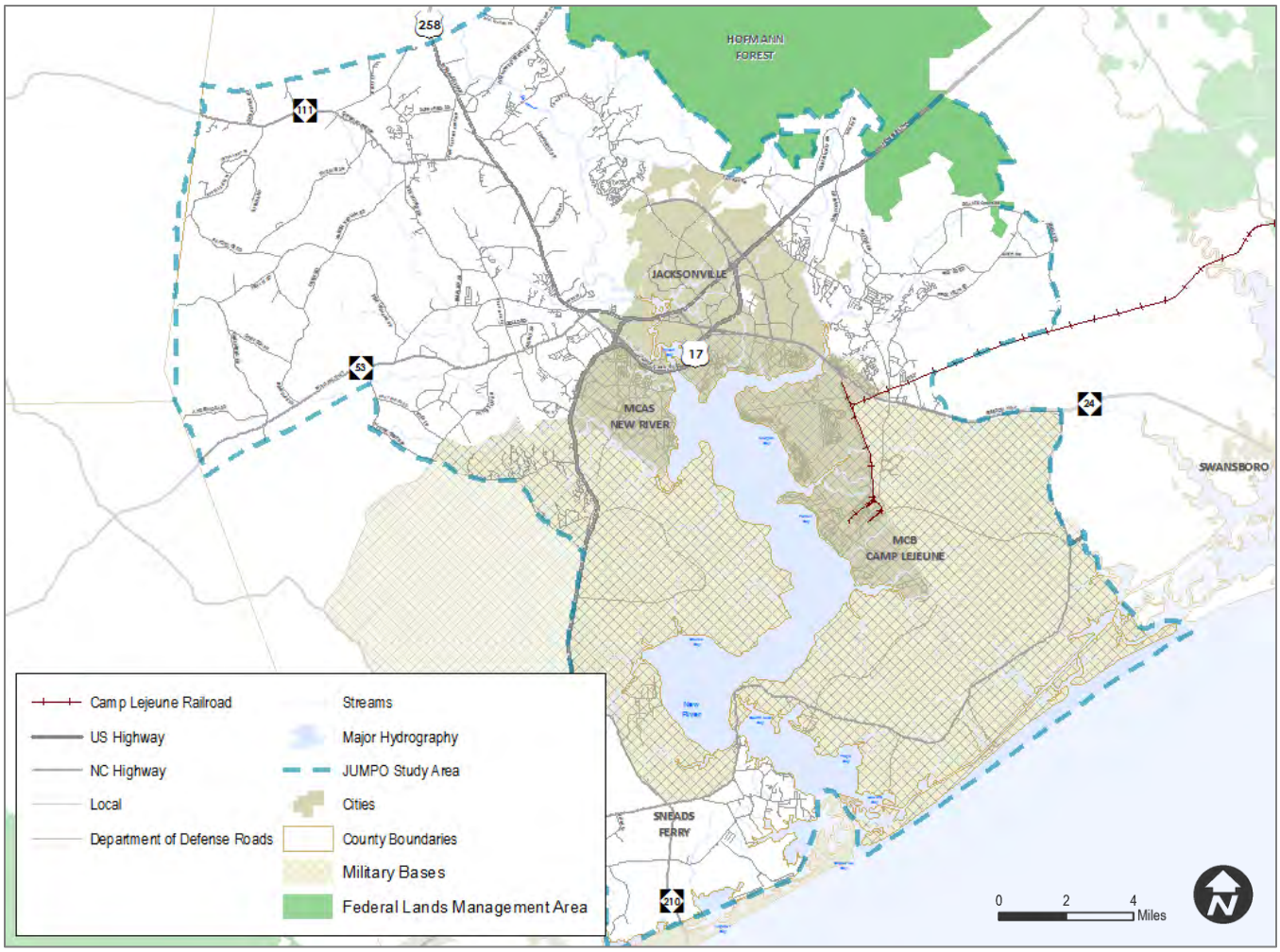
The *JUMPO 2045 MTP* addresses the following planning factors.

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
2. Increase the safety of the transportation system for motorized and non-motorized users
3. Increase the security of the transportation system for motorized and non-motorized users
4. Increase the accessibility and mobility of people and for freight
5. 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
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
7. Promote efficient system management and operation
8. Emphasize the preservation of the existing transportation system

The Study Area

The Jacksonville Urban Area Metropolitan Planning Organization (JUMPO) covers a large portion of Onslow County, which is located in southeastern North Carolina. The county is bound by the Atlantic Ocean to its south. JUMPO is responsible for transportation policy development, planning, and programming for the City of Jacksonville and surrounding areas of unincorporated Onslow County.

In general, the planning boundary covers locations in which growth is likely to occur during the timespan of the long range transportation plan. MPOs are required to evaluate their boundary after each U.S. Census to ensure the planning area is inclusive of all future urbanized areas. As a result of the Census evaluation, JUMPO's boundary expanded to include areas near the airport and Sneads Ferry in 2012.

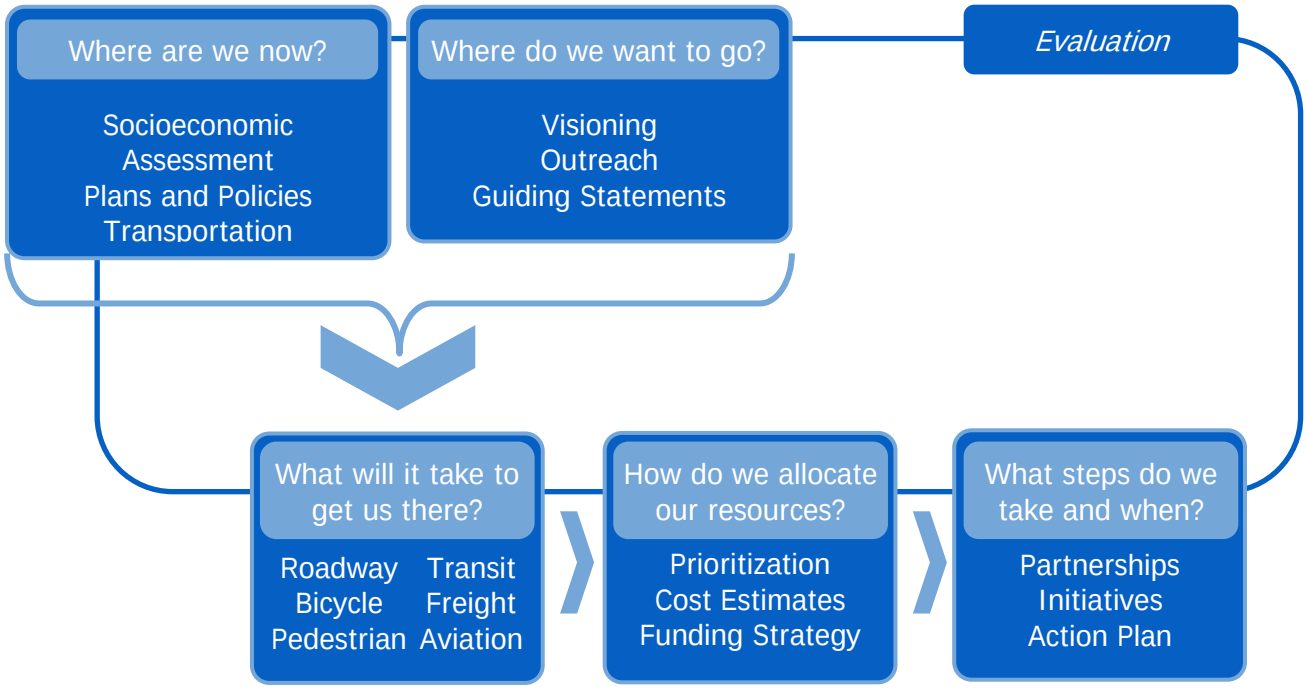


Planning Process

The *JUMPO 2045 MTP* represents a collaborative effort to establish a vision for the Jacksonville area's transportation network and identify a coordinated set of multimodal projects to achieve it. The plan addresses existing issues and anticipated concerns for congestion, safety, access, and connectivity. The planning process requires a cooperative process between multiple jurisdictions, key stakeholders, and citizens, and is designed to create an open dialogue among the larger community. The *JUMPO 2045 MTP* answers the following questions:

- Where are we now?
- Where do we want to go?
- What will it take to get us there?
- How do we allocate our resources?
- What steps do we take and when?

The process began with an explanation of socioeconomic conditions, a review of plans and policies, and an assessment of the current transportation network. A set of guiding statements were developed ahead of creating a coordinated set of multimodal recommendations. Once the full set of recommendations were developed, a prioritization process was created and available resources through the year 2045 were identified. The financially constrained plan provides a blueprint of transportation projects over the next 25 years.



Overview of Outreach

A coordinated public involvement strategy allows for the free exchange of ideas about the future transportation needs of the region. The public involvement strategy encouraged participation throughout the process so that the plan reflected the needs and values of the region. In doing so, the programming of transportation dollars in future years satisfies the best interests of the region's population.

Key Stakeholders

The plan required a process that brought residents, business owners, and other stakeholders to the table with local staff and elected officials. The underlying principle for understanding local dynamics was collaborative planning and consensus building through a process that recognized the intimate knowledge of these groups and the current and expected issues facing the Jacksonville region. Key parties who might be interested in participating in outreach activities include:

- Municipal staff
- County staff
- JUMPO staff
- NCDOT
- FHWA
- Elected officials
- State and Federal agencies
- Public transportation providers
- Public transportation users
- Freight operators
- Public service officials
- Major employers
- Jacksonville-Onslow Chamber of Commerce
- Economic development agencies
- Bicycle and pedestrian advocates
- Community leaders
- Minority and low income communities

Strategies

The opportunities and methods to achieve broad-scale representation require a variety of techniques, including traditional and non-traditional methods:

- Public comment period during TCC and TAC meetings
- Open comment period of 25-days
- Draft plan available on JUMPO's Website for viewing
- Stakeholder Interviews

Screen Shot of plan on Website and public comment period

Community Outreach

Citizen involvement—whether through direct contact or by the input of community representatives—is an important part of successful transportation planning. The *JUMPO 2045 MTP* relies on the notion that fully understanding the community's vision for transportation and the dynamics involved in achieving it requires a collaborative approach. As a result, several overarching issues should be considered:

- The plan should provide strategies to address the area's most important corridors and its worst performing intersections.
- The plan should offer strategic bicycle, pedestrian, and transit recommendations.
- The plan should consider previous planning efforts.
- The plan should address the financial constraints that the region and state will face over the next 25 years.
- The plan should acknowledge that the movement of people and goods to, from, and within the Jacksonville area directly affects economic competitiveness.

Guiding Statements

The first step in developing a metropolitan transportation plan is to establish goals and objectives to provide direction for the plan. The *JUMPO 2045 MTP* guiding statements reflect the community's vision for the transportation system based on prior planning efforts and citizen feedback. The guiding statements also help identify ways to prioritize potential recommendations.

Guiding Statements

The guiding statements provide direction for the long range transportation plan, notably as projects are prioritized, and respond to MAP-21 planning factors, local context, and regional needs. Each statement consists of a key phrase (i.e. guiding principle) with supporting description. The principles are further clarified by a trio of planning goals. The guiding statements represent a set of value statements for six major transportation priorities identified for the metropolitan transportation plan. The statements outline strategies that aim to guide regional growth. As multi-modal strategies were developed, the project team revisited the guiding principles to determine which principles a given project or strategy addresses. The result of this analysis provides a portion of the project evaluation process.

A. Congestion Reduction

Create a more efficient transportation system through improved connectivity, capacity, and operations.

Congestion typically occurs from bottlenecks (primarily at intersections) or when too many people travel on a route that already operates at or over capacity. Congestion often is the side effect of deliberate growth, and responses to congestion sometimes can make it worse. Best practices suggest addressing congestion through improvements to existing roads, strategic construction of new roads, interconnectivity, opportunities for safe and convenient walking and bicycling, improved transit opportunities, and mutually supportive transportation and land use initiatives. Congestion Mitigation projects seek to:

- Address issues identified in the travel demand model;
- Advocate strategic capacity improvements (i.e. widening existing roads and constructing new facilities);
- Implement operational improvements and access management on key corridors; and
- Improve connectivity through collector streets.

Planning Goals:

A.1 Promote reductions in recurring congestion through transportation capacity, access management, and policy improvements.

A.2 Recognize savings (e.g. time and fuel consumption) by minimizing vehicle miles traveled through enhanced integration and connectivity of the transportation system, across and between modes, for people and freight.

A.3 Promote efficient system management and operation, and support measures that reduce single occupant vehicle travel during peak demand hours.

B. Economic Vitality

Support regional growth through a transportation network that serves inter- and intra-regional accessibility and mobility needs for both people and goods.

Ensuring transportation investments support economic vitality in the Jacksonville area is critical. Good transportation investments address industry needs such as shipping goods, encouraging economic growth, and improving access to regional assets such as MCB Camp Lejeune and MCAS New River. The intent is to identify transportation improvements that position the region to be competitive in local, regional, and national markets. Economic Vitality projects seek to:

- Improve road and rail connections to industrial assets;
- Enhance access to interstate highways beyond the study area;
- Address congestion on strategic corridors and at important nodes; and
- Promote system management strategies.

Planning Goals:

B.1 Identify transportation recommendations that enable global competitiveness, productivity, and efficiency.

B.2 Increase the accessibility and mobility of people and freight, both civilian and military-related, within the region and to other areas.

B.3 Leverage gateways and aesthetics to create an atmosphere that fosters economic investment.

C. Environmental Sustainability

Preserve the social and environmental character of the region through an integrated transportation and land use strategy that addresses transportation solutions.

Local, state, and federal planning guidelines have evolved over recent decades to place additional emphasis on the role transportation planning plays in conserving the environment, preserving our neighborhoods, and protecting quality of life. For the Jacksonville area, this process has been aided through land use planning, developmental controls, environmental planning, and socioeconomic awareness. Environmental Sustainability projects seek to:

- Minimize impacts to natural resources by enhancing current transportation infrastructure;
- Promote the active use of appropriate natural areas;
- Maximize existing roadway capacity by improving connectivity; and
- Avoid unnecessary or disproportionate impacts to minority and low-income communities.

Planning Goals:

C.1 Protect and enhance the natural and social environment using context-sensitive transportation strategies.

C.2 Minimize direct and indirect environmental impacts of the transportation system while planning and prioritizing transportation recommendations.

C.3 Promote consistency between transportation improvements, land use decisions, and economic development patterns.

D. Multimodal Integration

Provide an integrated transportation network that encourages use of all modes by **offering travel choices that are accessible to all segments of the region's population.**

Planning transportation infrastructure to guide growth in a way that enhances quality of life is not easy. In the past, transportation planning focused on improving highways and major roads, but these improvements can help only so much. Strategic investment in major roadways must be balanced with improvements to the bicycle, pedestrian, transit, rail, and aviation networks to keep people and goods moving, allow better access for residents and visitors, and enhance the quality of life in the Jacksonville area. Multimodal Integration projects seek to:

- Develop bicycle and pedestrian priorities in concert with transit and roadways;
- Create coordinated transit improvements and strategies for system maintenance;
- Promote the expansion of passenger rail and intercity bus; and
- Support economic vitality.

Planning Goals:

D.1 Provide desirable and user-friendly transportation options for all user groups regardless of socioeconomic status or physical ability.

D.2 Support a fully integrated multimodal network that advances the concept of complete streets.

D.3 Expand and maintain a network of bicycle, pedestrian, and transit facilities that connects homes, activity centers, and complementary amenities.

E. Safety and Security

Promote a safer and more secure transportation network through crash reduction, enhanced reliability and predictability, and improved emergency coordination.

Through MAP-21, the federal government re-affirmed safety and security as independent planning factors for consideration in long range transportation plans. The area's location along the coast, the military presence, and natural resources requires the long range transportation plan to consider safety and security for all modes that move people and freight. Safety and Security projects seek to:

- Provide safety countermeasures for high risk locations;
- Improve conditions of bridges;
- Increase route choice during evacuations and when primary corridors are impassable; and
- Promote systems management initiatives.

Planning Goals:

E.1 Improve the safety of the transportation system for all user groups regardless of socioeconomic status or physical ability.

E.2 Increase the reliability, predictability, and efficiency of the transportation experience through system improvements and enhanced communication.

E.3 Improve safety and security by enhancing the evacuation route network for natural events and protecting access to military assets.

F. System Preservation

Extend the life of the transportation system by fostering a sustainable and maintainable system that addresses the long-term needs of the region.

A transportation network with high mobility is critical for sustaining and extending economic development. The New River and its network of tributaries and drainage basin create natural barriers that challenge local and regional mobility. Overcoming these barriers in part is an exercise in maximizing the capacity of the existing transportation system through systems management approaches. These approaches include monitoring and addressing pavement quality and ensuring that ancillary facilities such as traffic signals and ITS infrastructure are properly deployed.

System Preservation projects seek to:

- Improve bridges and critical infrastructure;
- Provide intersection-level improvements that increase the functionality of the larger corridor;
- Encourage systems management through access management and technology; and
- Improve system connectivity.

Planning Goals:

F.1 Limit expansion of the roadway network to the most necessary projects that best address identified issues.

F.2 Increase the lifespan of existing infrastructure and ensure transportation facilities are used optimally.

F.3 Maintain the transportation network by identifying and prioritizing infrastructure preservation and rehabilitation projects such as pavement management and signal system upgrades.

Introduction

Decisions made as part of the long range transportation plan process must consider the area's existing resources such as the social and cultural elements unique to Jacksonville and the surrounding areas of Onslow County. Identifying potential impacts helps to balance the often competing interests of improving mobility and preserving a community's important natural and historical features. The earlier these features are identified, the more likely sustainable solutions will arise to minimize or avoid impacts and reduce unnecessary delays and expenses.

This chapter includes five sections:

Planning Considerations	Environmental Conditions	Socioeconomic Conditions	Transportation Conditions	Planning Document Review

A review of existing conditions in the JUMPO study area provides an understanding from which transportation recommendations can be identified, evaluated, and prioritized.

Planning Considerations

Transportation projects can disrupt communities and significantly affect natural resources. Today's transportation planning process includes a system of checks and balances designed to mitigate unfair and disproportionate impacts of these projects on a community. The Federal government requires the planning process be cooperative, continuous, and comprehensive to ensure disadvantaged communities receive fair consideration regarding the benefits and impacts of transportation projects. The planning process for the *JUMPO 2045 MTP* included a review of social and environmental resources to ensure proposed transportation projects do not lose sight of the plan's guiding statements.

Environmental Justice

A 1994 Presidential Executive Order directed every Federal agency to incorporate environmental justice into their mission. Agencies were required to identify and address the effect their policies and activities had on minority and low-income communities. The U.S. Department of Transportation (USDOT) promotes environmental justice as an integral part of the long range transportation planning process and through individual project planning and design. According to the USDOT, environmental justice requires the understanding and incorporation of the unique needs of distinct socioeconomic groups to create transportation projects that fit within the framework of their communities without sacrificing safety or mobility.

Environmental justice within the *JUMPO 2045 MTP* is based on three fundamental principles derived from guidance issued by the USDOT:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

For more information, please visit www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/.

Environmental Mitigation

Protecting and enhancing the environment is a concern shared throughout the transportation community. MAP-21 planning factors provide guidance to protect the environment, integrate the planning and environmental processes, and promote a streamlined process for reviews and permitting. By doing so, the legislation emphasizes environmental mitigation. The coordinated effort of a MTP supports the protection and enhancement of the environment and sets the stage for the streamlined process outlined by NEPA regulations. Although the integration will vary by project, initiating the environmental assessment and mitigating environmental concerns should occur as early in the project developmental phase as practical.

National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA), signed into law January 1, 1970, establishes national environmental policy and goals to protect, maintain, and enhance the environment. Transportation projects using federal funds must include a NEPA review. The NEPA process involves investigating environmental impacts of transportation-related projects, usually prior to engineering and design. Identified issues are addressed during the engineering phase. The NEPA review results in one of three levels of assessment, depending on the severity of the impact:

- Categorical Exclusion—This first level allows a project to be categorically excluded from detailed environmental analysis if it meets criteria previously determined by a federal agency as having no significant environmental impact. Several agencies have developed lists of actions normally categorically excluded from environmental evaluation under their NEPA regulations.
- Environmental Assessment/Finding of No Significant Impact (EA/FONSI)—For the second level, a federal agency prepares a written environmental assessment (EA) to determine if the project would significantly affect the environment. If it will not, the agency issues a finding of no significant impact (FONSI). The FONSI may address ways the agency can mitigate potential significant impacts.
- Environmental Impact Statement (EIS)—If the EA determines significant environmental consequences may occur, an EIS is prepared. An EIS is a more detailed evaluation of the proposed action and alternatives. The EIS process includes the opportunity for the public, other federal agencies, and outside parties to provide comments during preparation as well as once the draft EIS is completed. (If a federal agency anticipates the project may have a significant impact or if the project is environmentally controversial, the agency may choose to prepare an EIS without first preparing an EA.) Once the EIS is finalized, a federal agency prepares a public record of its decision that addresses the findings of the EIS, including how consideration of alternatives weighed into the agency's decision.

Best Practices

An early assessment as part of the MTP process was intended to lessen environmental impacts and reduce potential conflicts during construction of the projects. Several best practices should continue to factor into the decision-making process for new roadways and major widening projects:

- Minimize impacts to the natural and built environments.
- Avoid unnecessary or disproportionate impacts to minority and low-income communities.
- Minimize impacts to parks, designated open spaces, schools, and historic resources.
- Capitalize on street connectivity opportunities.
- Promote pedestrian, bicycle, and transit networks.
- Minimize stream, wetland, and watershed impacts.
- Avoid FEMA designated floodplains.
- Minimize impacts to threatened and endangered species.

Environmental Conditions

Natural Heritage and Cultural Resources

The JUMPO study area has a diversity of Natural Heritage Areas and cultural resources within Jacksonville and MCB Camp Lejeune and throughout unincorporated areas outside of the major activity centers.

Historic Districts

- Avirett-Stephens Plantation
- Catherine Lake Historic District
- Futral Family Farm
- Mill Avenue Historic District
- Southwest Historic District
- Venters Farm Historic District
- Bank of Onslow and Jacksonville Masonic Temple

Historic Sites

- Alum Spring
- Pelletier House and Wantland Spring

Cultural Sites

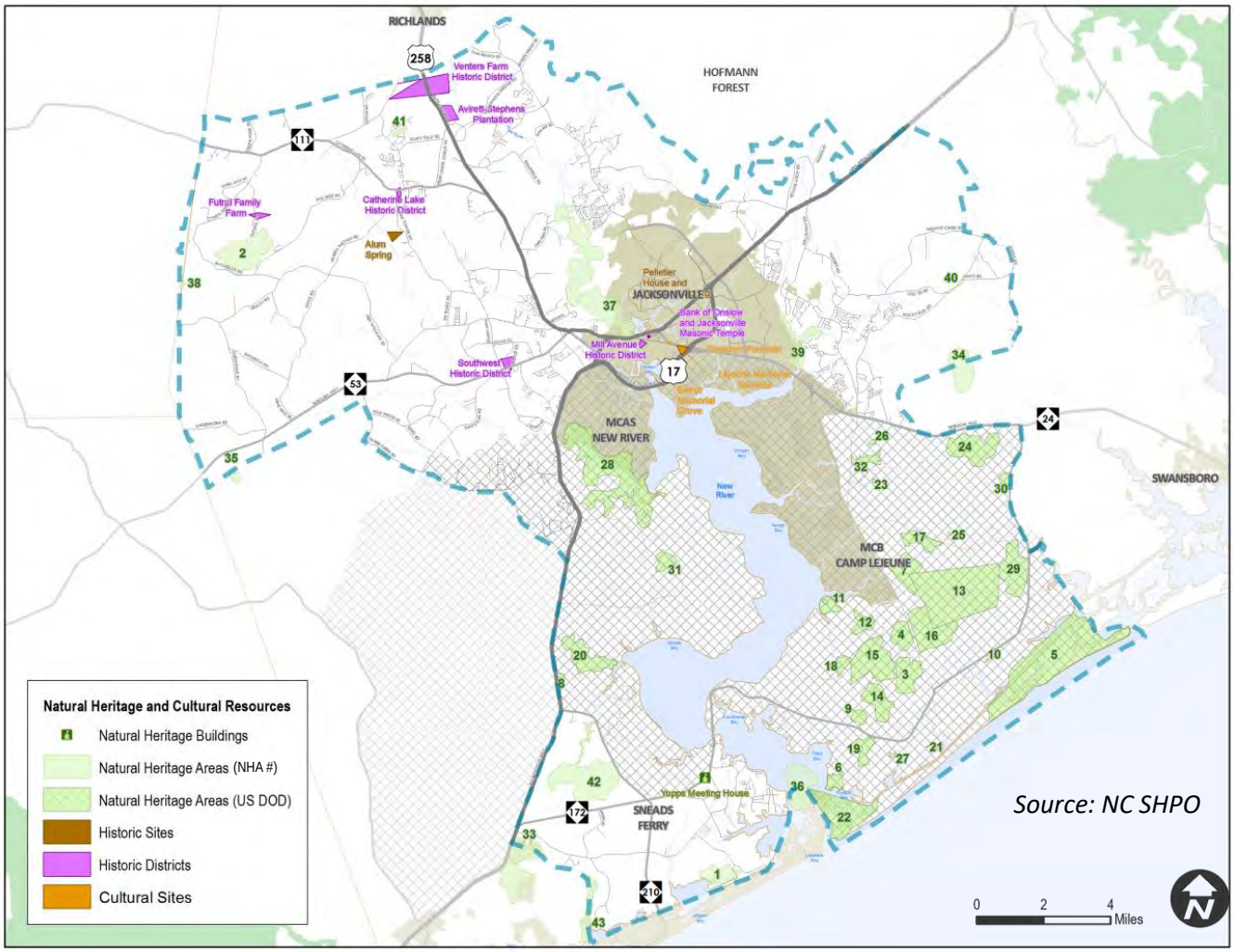
- Freedom Fountain
- Lejeune Memorial Gardens (Beirut and Vietnam memorials)

Natural Heritage Building

- Yopp's Meeting House (Natural Heritage Building)

Natural Resources

- Hofmann Forest



Natural Heritage Areas have significant presence in and around the Camp Lejeune military base. Therefore, the heritage areas are listed separately here for those that pertain to the US Department of Defense and those that do not have a DOD affiliation.

Natural Heritage Areas

(1) Alligator Bay Marshes and Forests
(2) Batchelor Road Flatwoods
(33) Folkstone Savannas
(34) Horse Swamp Savannas and Woodlands
(35) Maple Hill Limesink Complex
(36) New River Inlet Bird Nesting Islands
(37) New River Swamps and Marshes
(38) Nine Mile Creek Flatwoods
(39) Northeast Creek Tidal Forests
(40) Old 30 Road Powerline Savanna
(41) Rock House Cave Natural Area
(42) Stones Creek Sandhills
(43) Turkey Creek Marshes

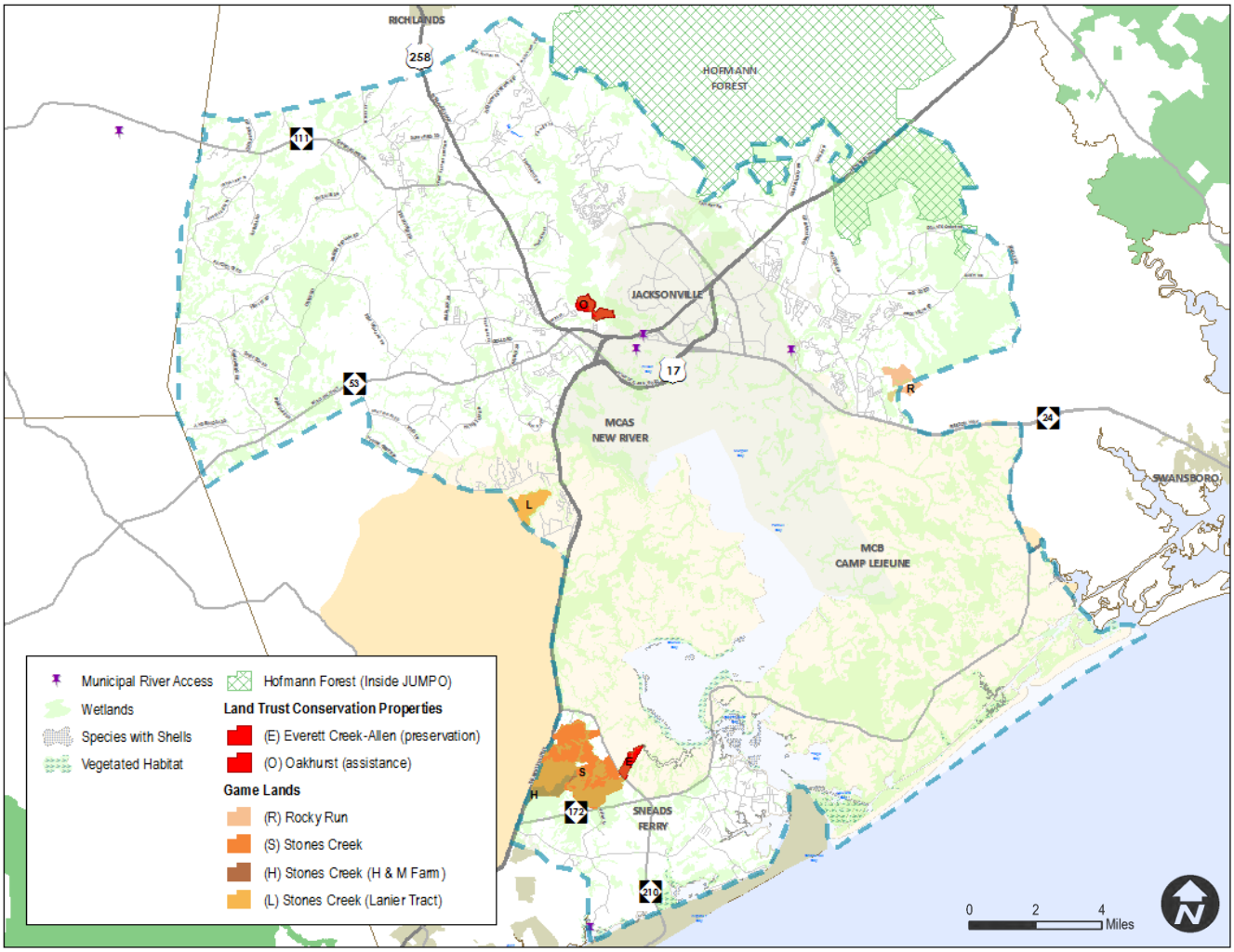
US DOD Natural Heritage Areas (Camp Lejeune)

(3) Africa Pond Limesinks
(4) Alligator Meadow Limesinks
(5) Browns Island
(6) Corn Landing
(7) Cowhead Creek Limesinks
(8) Dixon Pine Savanna
(9) Dove Road Pocosin
(10) Freeman Creek Meadow
(11) Frenchs Creek Coastal Goldenrod Site
(12) Frenchs Creek Limesinks
(13) G-10 Impact Area
(14) Hog Pen Road Flatwoods and Pocosin
(15) Longleaf Pine Ridge
(16) Loosestrife Pocosin
(17) Lyman Road Cypress Savanna
(18) Marines Road Sandhills
(19) Mile Hammock Bay Sandhills
(20) Millstone Creek Swamp
(21) Mockup Road Coastal Goldenrod Site
(22) New River Inlet
(23) Old Bear Creek Road Pond
(24) Pocosin Road Flatwoods
(25) Pondspice Meadow
(26) Powerline Road Sandhill
(27) Salliers Bay Coastal Goldenrod Site
(28) Southwest Creek
(29) Spring Branch Limesinks
(30) Starretts Meadow
(31) Verona Loop Flatwoods
(32) Wallace Creek Swamp

Natural Resources

The JUMPO study area has a rich diversity of environmental capital centered on the New River and its watershed. Highlights include:

- Three municipal river access points located along the New River basin.
- Two Land Trust Conservation Properties—the Everett Creek-Allen property (currently being preserved) and the Oakhurst property
- 116 square miles (more than 25% of the total JUMPO study area) in the wetland inventory
- Four Game Land areas—The Lanier Tract, H&M Farm, and an unnamed area directly adjacent to the H&M Farm in Stones Creek and the Rocky Run habitat area



Socioeconomic Conditions

Population Density

According to the 2018 American Community Survey (ACS) 5-Year Estimates at the block group level, the population within the JUMPO study area is 193,912 people, approximately 1.9% of the 10.2 million persons residing in North Carolina. The average population density in the JUMPO study area is 1,320 persons per square mile, which is almost identical to the state average population density of 1,324 persons per square mile.

The locations of densest population within the JUMPO study area are centered primarily across the northeastern portions of Jacksonville. The eastern bank of New River on the Camp Lejeune base also is home to a higher than average population density in areas where military housing is prevalent. Piney Green between the Camp Lejeune railroad and NC 24 is another densely populated area.

Population Characteristics

The State Demographics branch of the North Carolina Office of State Budget and Management projects county populations out to 2039, based on a mathematical computer model using data including local institutional data, barracks population data, and Census data as well as data from other governmental sources.

Extrapolating from North Carolina Office of State Budget and Management population projections, North Carolina's population is anticipated to grow by 0.5% per year to 12.9 million people in 2039. Onslow County's population is projected to grow to 251,707 people by 2039 at an average rate of 0.5% per year. Projections and percent growth are shown in the table below.

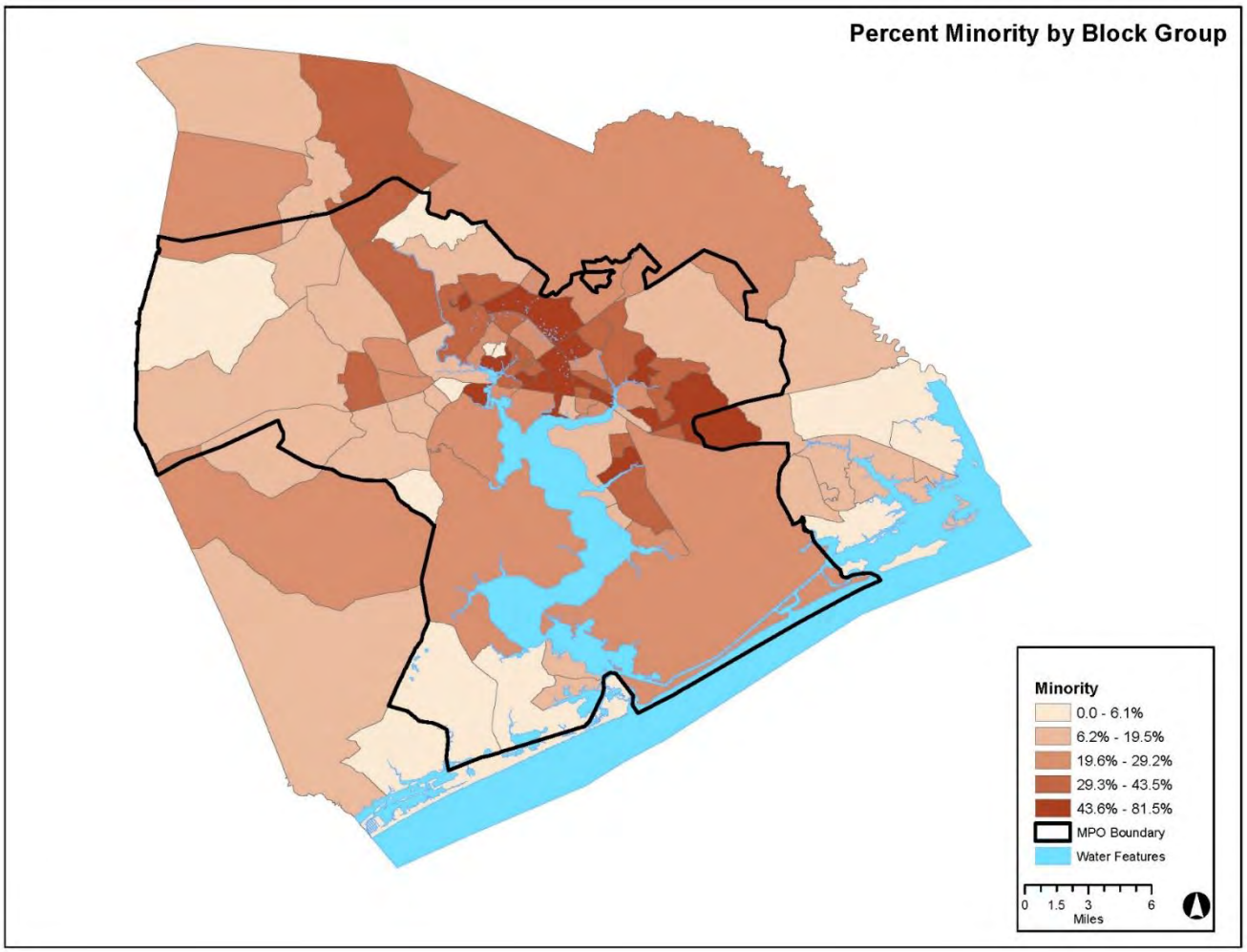
	Historical	Projected						Annual Change
	2010	2015	2020	2025	2030	2035	2039	2010 to 2039
Onslow County	186,869	193866	204,817	216,817	229,277	241,738	251,707	25.76%
North Carolina	9,574,293	10,033,079	10,630,691	11,233,133	11,836,070	12,439,269	12,919,921	25.89%

*Data accessed from: https://files.nc.gov/ncosbm/demog/countytotals_populationoverview.html

Minority

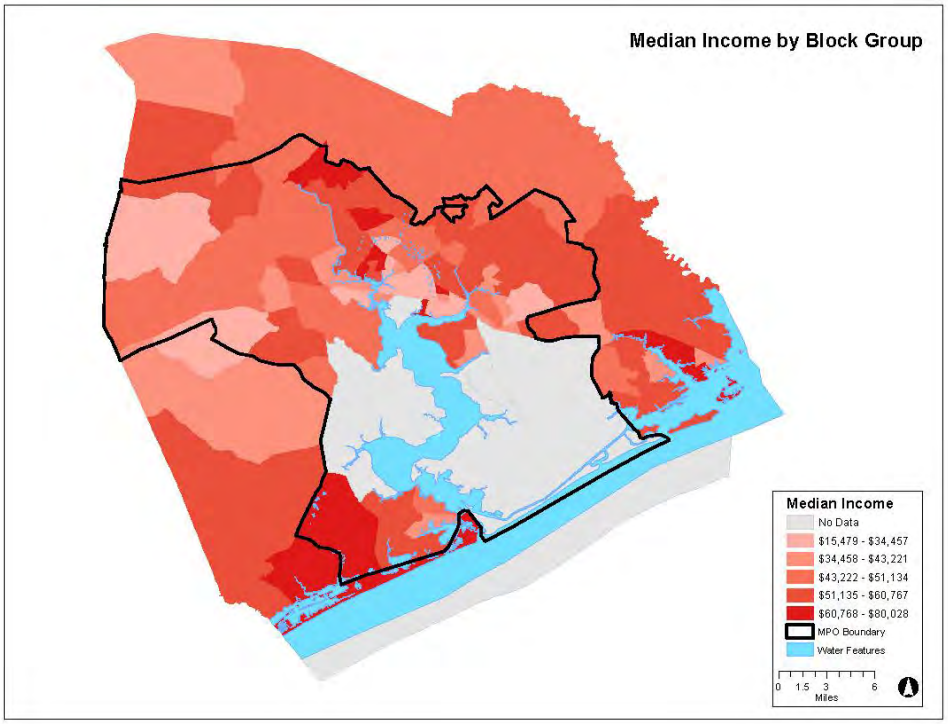
The ACS also collects detailed demographic information regarding racial identity and cultural origin. Survey participants are asked to indicate race by choosing one or more of the following: White, Black or African American, American Indian and Alaska Native, Asian, or Native Hawaiian and Other Pacific Islander. Additionally, participants are asked to indicate whether or not they have a Hispanic, Latino, or Spanish origin. The Minority population includes all persons who indicated Hispanic, Latino, or Spanish origin, as well as all persons who indicated a race other than white only.

Minority populations in the JUMPO study area are most prominent within the City of Jacksonville and within Camp Lejeune, specifically near Hadnot Point. According to the 2010 Census File, Race and Hispanic or Latino Origin, the minority population of the study area is approximately 26.1% of the total population. This is consistent with the statewide minority population, which is approximately 25.5%.



Poverty and Income

In 2017, the poverty threshold for a family of four was an annual income of $25,094. For the population for whom poverty status was determined through the 2018 Small Area Income and Poverty Estimates, the JUMPO study area included 15.1% of families below the poverty threshold. This percentage is higher than the statewide average of 14.00% of families in poverty. Families below the poverty threshold generally are distributed across the northern half of block groups in the JUMPO study area.



According to Census Table S1901, Income in the Past 12 Months (In 2017 Inflation-Adjusted Dollars), the study area's average median family income was $49,883.

Households with No Vehicles

The ACS considers household access to a vehicle to help determine the need for special transportation services for the elderly and disabled, but also to plan for emergency transportation services for areas with high concentrations of households with no vehicle available. Of the total 44,565 occupied households in the JUMPO study area, 1,922 do not have access to a vehicle. However, the average number of households in the JUMPO study area without a vehicle is much less than the statewide average. Within the study area, only 4.3% are zero vehicle households as opposed to 6.5% of households with no vehicle statewide.

High concentrations of households with no vehicles are found in the heart of Jacksonville where transit service is available. Other areas that have relatively high concentrations of zero vehicle households are the more rural areas directly west of Jacksonville as well as rural/agricultural areas on the outskirts of the JUMPO study area.

Workforce Characteristics

Major Employers

The table to the right shows the 25 largest employers in Onslow County at the end of second quarter of 2019 and their rankings from the previous four years. The top six employers have consistently remained the top employers for the past five years, while the remaining employers have fluctuated. According to the 2017 Marine Corps Installation East Economic Impact, the area's Department of Defense population, which includes active duty (77,014), and civilian employees (14,937), totaled 91,951.

Employment Projections

The total number of jobs in Onslow County is anticipated to be 150,000 in 2045, based on the 5.2% employment growth rate predicted by the Bureau of Labor Statistics.

Name	Industry	Employees	Rank				
			'19	'18	'17	'16	'15
Department of Defense	Public Administration	1000+	1	2	2	1	1
Onslow County Board of Education	Education & Health Services	1000+	2	1	1	2	2
Camp Lejeune Marine Corps Community Services	Trade, Transportation & Utilities	1000+	3	3	3	3	3
Wal-Mart Associates, Inc.	Trade, Transportation & Utilities	1000+	4	4	4	4	4
County of Onslow	Public Administration	1000+	5	5	5	5	5
Onslow Memorial Hospital	Education & Health Services	1000+	6	6	6	6	6
Coastal Carolina Community College	Education & Health Services	500-999	7	7	8	8	8
Food Lion	Trade, Transportation & Utilities	500-999	8	8	10	9	9
City of Jacksonville	Public Administration	500-999	9	9	11	10	10
Concentrix Cvg Customer Management	Professional & Business Services	500-999	10	n/a	n/a	n/a	n/a
Coastal Enterprises of Jacksonville	Education & Health Services	250-499	11	11	12	12	12
McDonald's Restaurants of NC, Inc.	Leisure & Hospitality	250-499	12	13	n/a	n/a	11
Lowes Home Centers, Inc.	Trade, Transportation & Utilities	250-499	13	14	16	16	18
Global Food Services (GFS)	Leisure & Hospitality	250-499	14	19	n/a	n/a	n/a
Stanadyne Corporation	Manufacturing	250-499	15	16	21	14	14
The Wood Company (A Corp)	Leisure & Hospitality	250-499	16	15	15	16	15
Gmri Inc	Leisure & Hospitality	250-499	17	18	n/a	n/a	n/a
Taco Bell	Leisure & Hospitality	250-499	18	20	19	n/a	n/a
Dominos	Leisure & Hospitality	250-499	19	22	n/a	n/a	n/a
United States Postal Service	Trade, Transportation & Utilities	250-499	20	17	18	18	19
Marine Federal Credit Union, Inc.	Financial Activities	250-499	21	21	21	19	17
Yorktown Systems Group Inc.	Professional & Business Services	100-249	22	24	17	n/a	n/a
Principle Long Term Care, Inc.	Education & Health Services	100-249	23	23	25	21	22
Wendy's Old Fashioned Hamburgers	Leisure & Hospitality	250-499	24	n/a	23	n/a	n/a
Alorica Inc	Professional & Business Services	100-249	25	12	n/a	n/a	n/a

Source: North Carolina Department of Commerce's Labor & Economic Analysis Division

Travel Time to Work

The ACS tracks travel time to work at the Census Tract level. For residents in the JUMPO study area, the average approximate travel time to work was 21.2 minutes in 2018. The shortest commute times, with an average of approximately 8 minutes, fell within the Camp Lejeune military base. Travel times increased in duration fanning out from Camp Lejeune into Jacksonville and then the surrounding unincorporated areas of Onslow County. The longest average commute for a particular census tract was approximately 32 minutes for populations living at the northwestern edge of the JUMPO study area between NC 111 and NC 53.

Commute Patterns

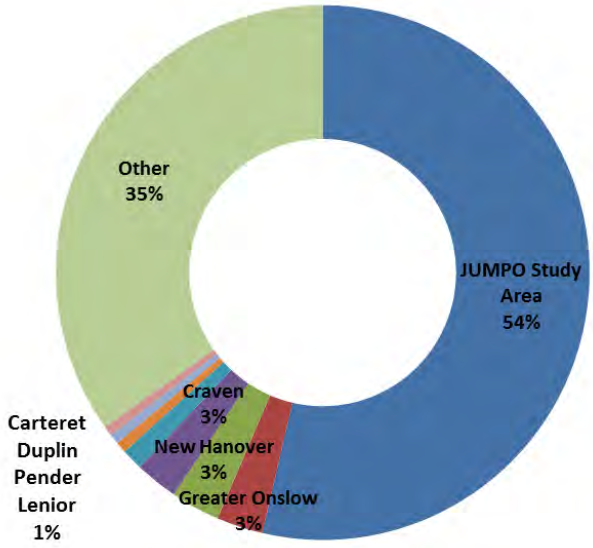
Jacksonville's role as a regional employment center is evident in the percentage of the study area's population that also works in the study area. Likewise, more than half of study area employees travel from homes outside the study area.

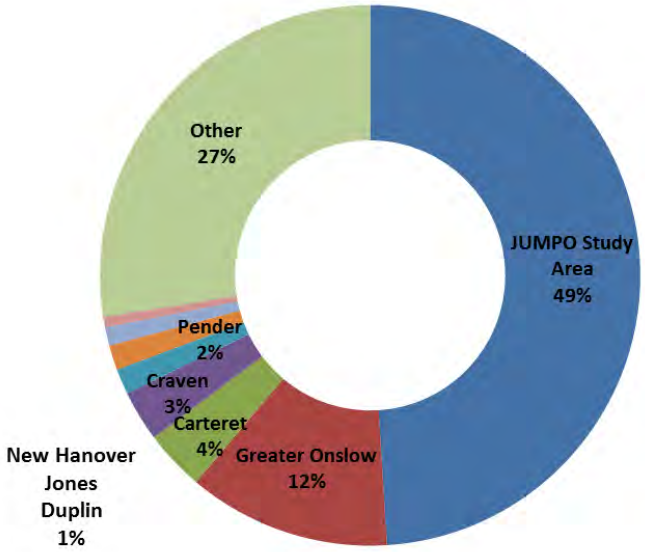
Where Residents in the Study Area Work

Based on commute flows reported through the ACS, approximately 54% of residents in the study area work in the study area. Three percent of the residents live in the study area but work in other parts of Onslow County. New Hanover and Craven Counties are the most likely employment destination outside the county, though these counties only represent a total of 6% of the working population that resides in the study area.

Where Workers in the Study Area Live

Approximately half of the jobs within the JUMPO study area are filled by workers who also live within the study area. Residents in Onslow County as a whole (including areas within and outside the JUMPO study area) account for 61% of the study area's jobs. Carteret and Craven County account for the largest share of residents from external counties commuting to the study area residents at 4% and 3%, respectively.





Transportation Conditions

Functional Classification

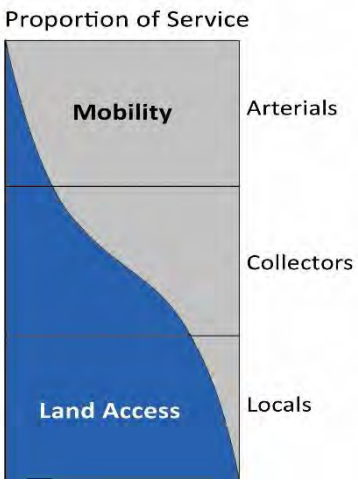
Functional classifications categorize roadways based on speeds, vehicular capacities, and relationships with adjacent existing and future land utilizations. Federal funding and aid programs through the Federal Highway Administration (FHWA) use roadway functional classification to assist with funding eligibility. Functional classifications also account for the inverse relationship between access and mobility. Functional classifications found in the JUMPO study area include:

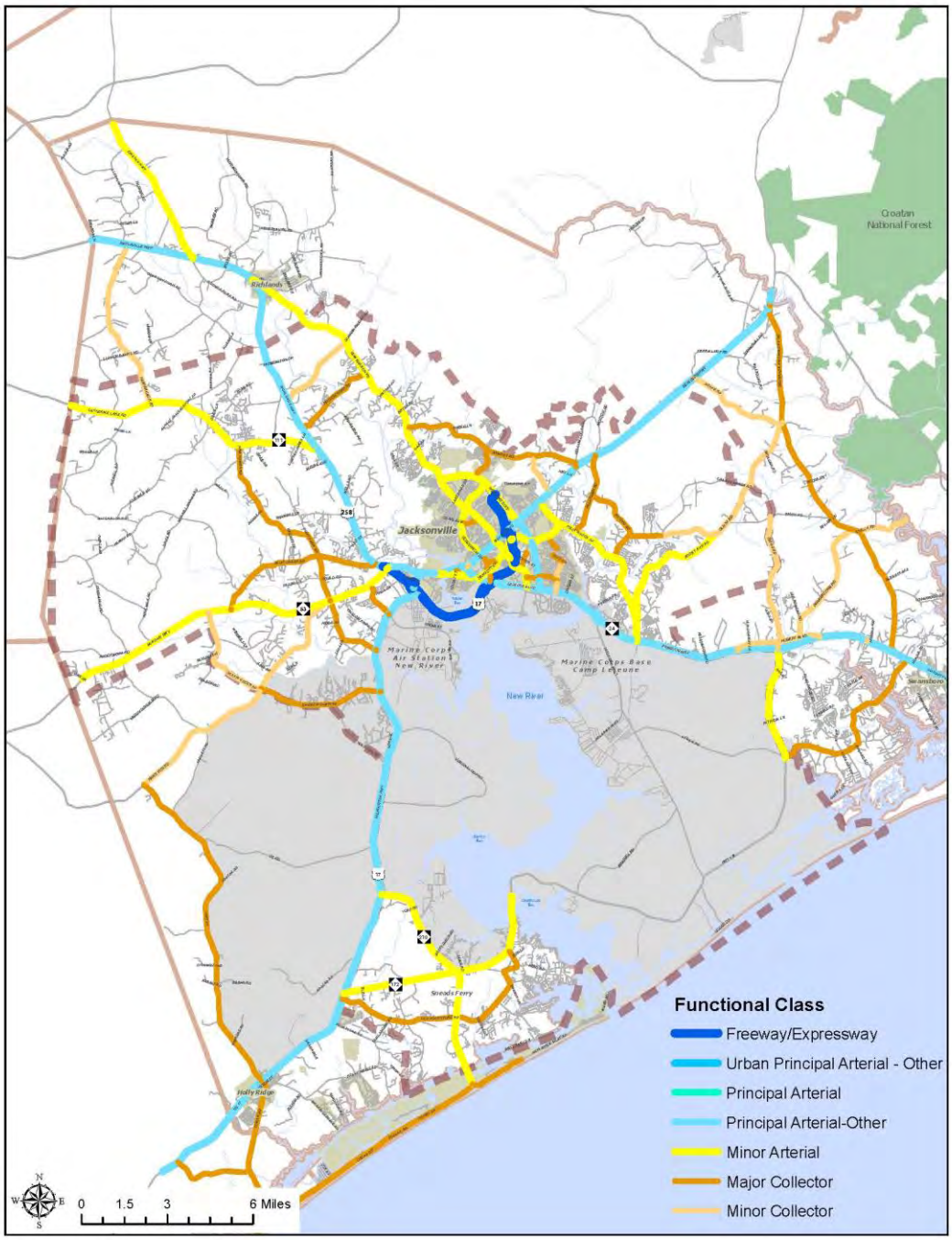
Arterials:

- Principal Arterial – Urban/Rural
  Serve major activity centers; Link urban areas; High connectivity
- Minor Arterial – Urban/Rural
  Connect principal arterials; High accessibility

Non-Arterials:

- Collector – Urban/Rural - Serve high density areas; Intra-county travel
- Local - No through traffic; Adjacent land access
- Military Roads - Limited access facilities





Bridge Condition

The JUMPO study area includes 147 NCDOT bridge structures in Onslow County. Structures in the JUMPO study area include 107 bridges, 27 pipes, 11 culverts, one pedestrian walkway, and one vehicular underpass. Additionally, more than 15 bridges are owned and maintained by the Department of Defense. As of the June 2014 bridge inventory update for the NCDOT bridges, five functionally obsolete bridges are located in the JUMPO study area and two are considered both structurally deficient as well as functionally obsolete. These bridges are identified in the map by the last three digits of its six-digit NCDOT Bridge ID.

Functionally Obsolete

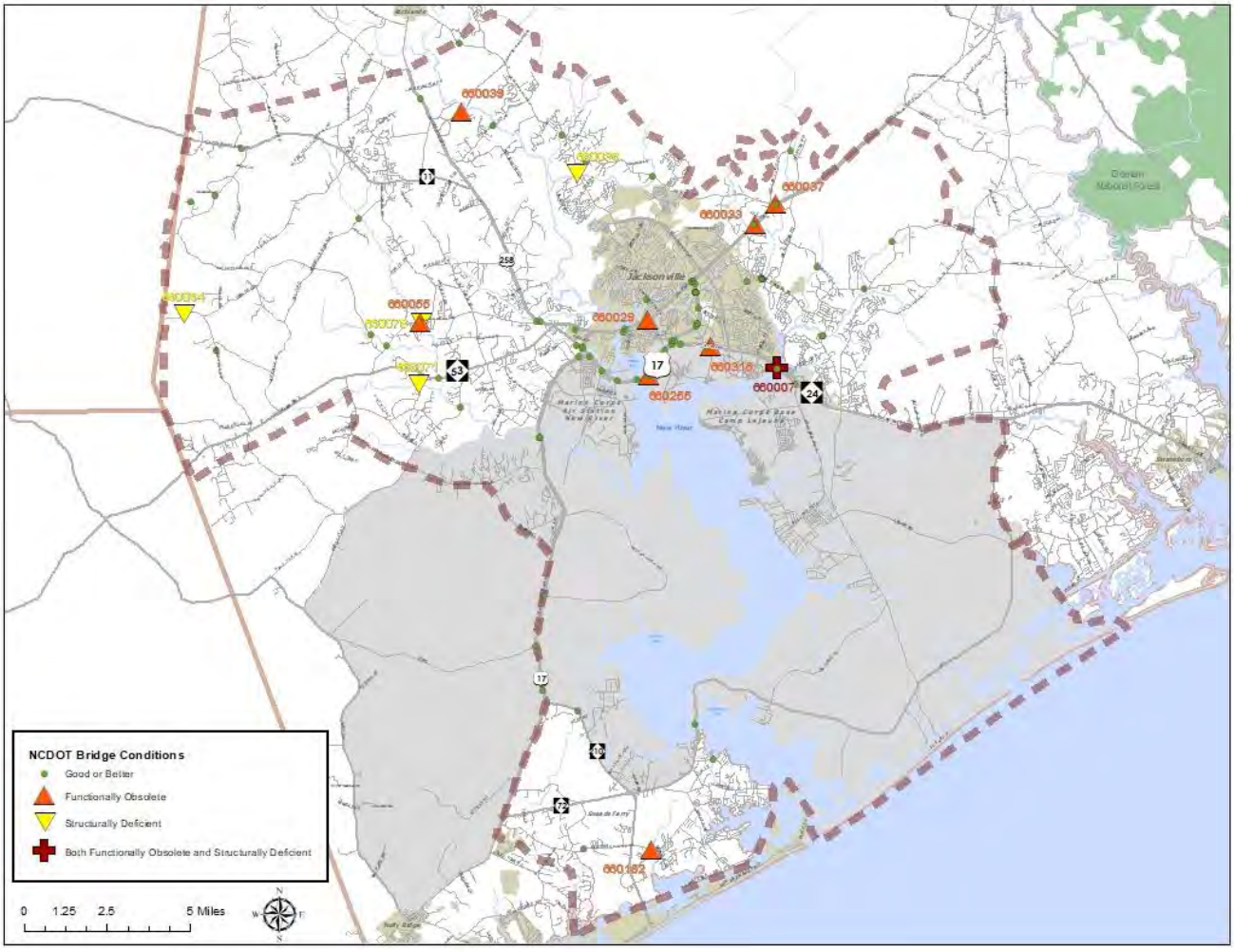
- 660029 – US 17 over Chaney Creek
- 660033 – US 17 (NB) over Wolf Swamp
- 660037 – US 17 (NB) over Northeast Creek
- 660039 – SR1324 over the New River
- 660055 – SR 1213 over Southwest Creek
- 660182 – SR1518 over Mill Creek
- 660255 – US17N, NC24E, NC53E over Military Trail

Both Structurally Deficient and Functionally Obsolete

- 660071 – SR 1109 over Harris Creek

Functionally obsolete bridges were built to standards that are not used today; these are not inherently unsafe, but may not have adequate lane, shoulder widths or vertical clearances or may be occasionally flooded.

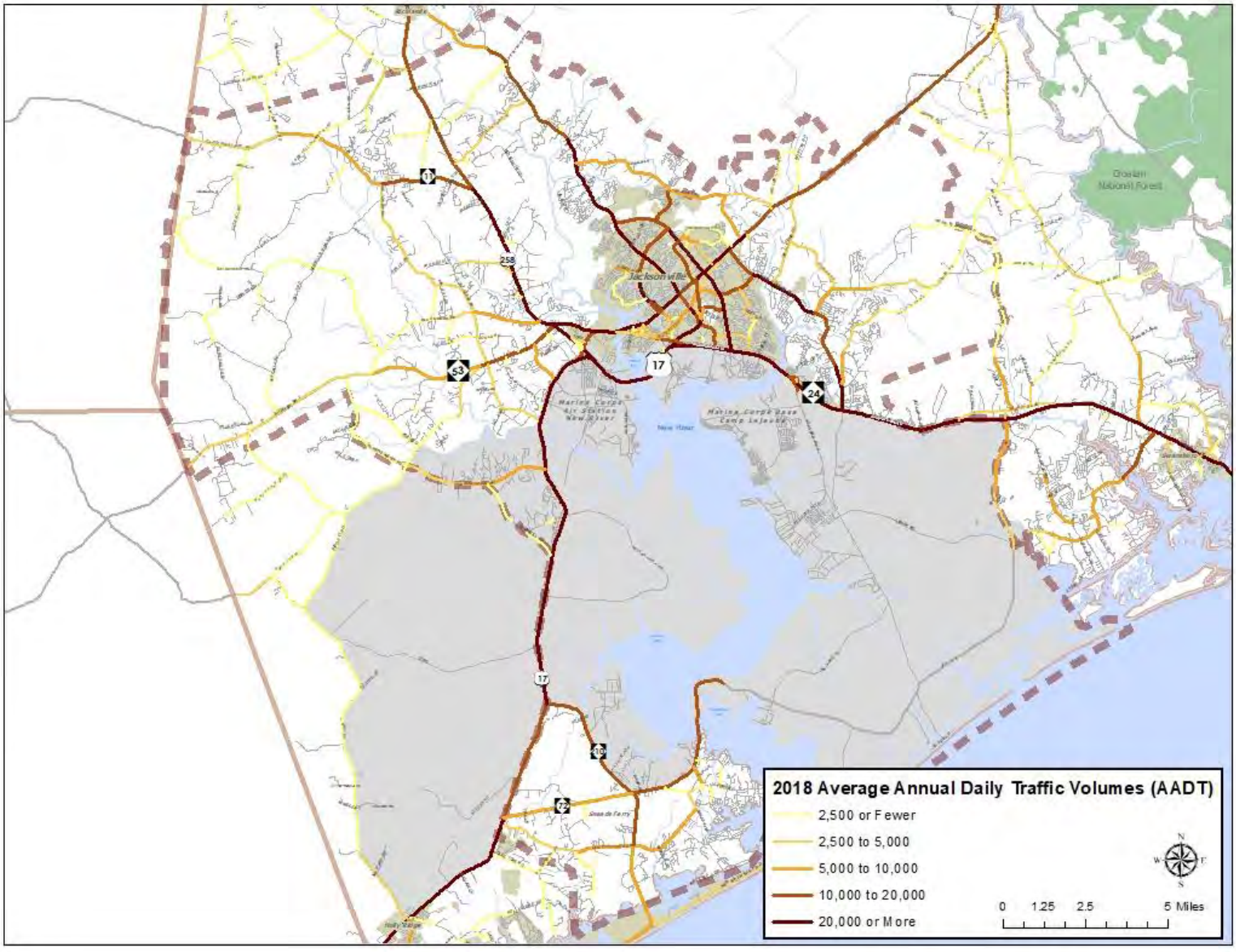
Structurally deficient bridges have elements that need to be monitored and/or repaired and may have been restricted to light vehicles or closed to traffic for rehabilitation.



Daily Traffic Volumes

Annual average daily traffic (AADT) volumes are collected by the North Carolina Department of Transportation (NCDOT) on an annual basis. The most current traffic volumes available are from 2018 along all state-maintained roadways. Within the JUMPO study area, the roads with the highest recorded AADTs include the following:

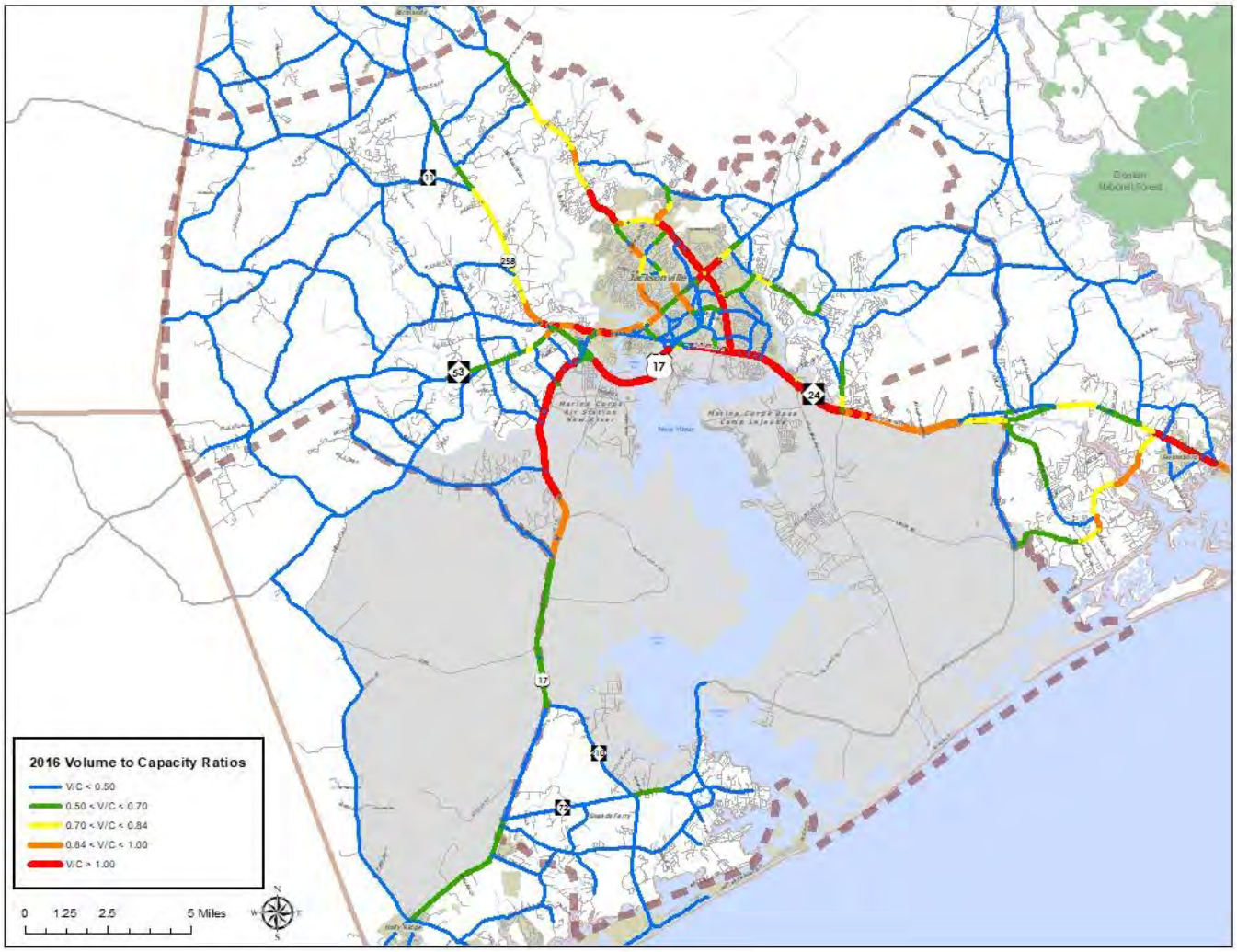
- US 17
- US 17 Business
- US 258
- NC 24
- NC 53
- NC 172
- NC 210
- SR 1308 (Gum Branch Road)
- SR 1406 (Piney Green Road)
- SR 1336 (Henderson Drive)
- SR 2714 (Jacksonville Parkway)
- Carolina Forest Boulevard



Traffic Congestion – Base Year 2016

The NCDOT maintains a travel demand model for the Jacksonville Urban Area to understand congestion on non-military roadway segments. The resulting volume to capacity ratios measure anticipated or observed volumes compared to theoretical vehicular capacities based on speed limit, number of lanes, and access conditions (i.e. number of driveways and/or traffic signals). A V/C ratio of 1.0 indicates the roadway segment operates at capacity with high congestion and heavy delay. V/C ratios can exceed 1.0. Most roads in the JUMPO study area show V/C ratios below 1.0. The 2016 base-year model shows the most severe congestion on roads that are the focus of upcoming transportation improvement program projects within the JUMPO study area. Corridors that have V/C ratios greater than 1.0 include:

- NC 24 – from Piney Green Road to just east of NC 53
- NC 53 (Western Boulevard) – from NC 24 to Carolina Forest Blvd.
- US 17 (Bypass and Wilmington Highway)– from NC 24 to just south of Dawson Cabin Road
- SR 1308 (Gum Branch Road) – from NC 53 to SR 1920 (Raintree Road)
- US 17 Business (S Marine Boulevard) – west of SR 1402 (Old Bridge Street)
- US 17 (N Marine Boulevard) – from SR 2714 (Jacksonville Pkwy) to Fairway Road

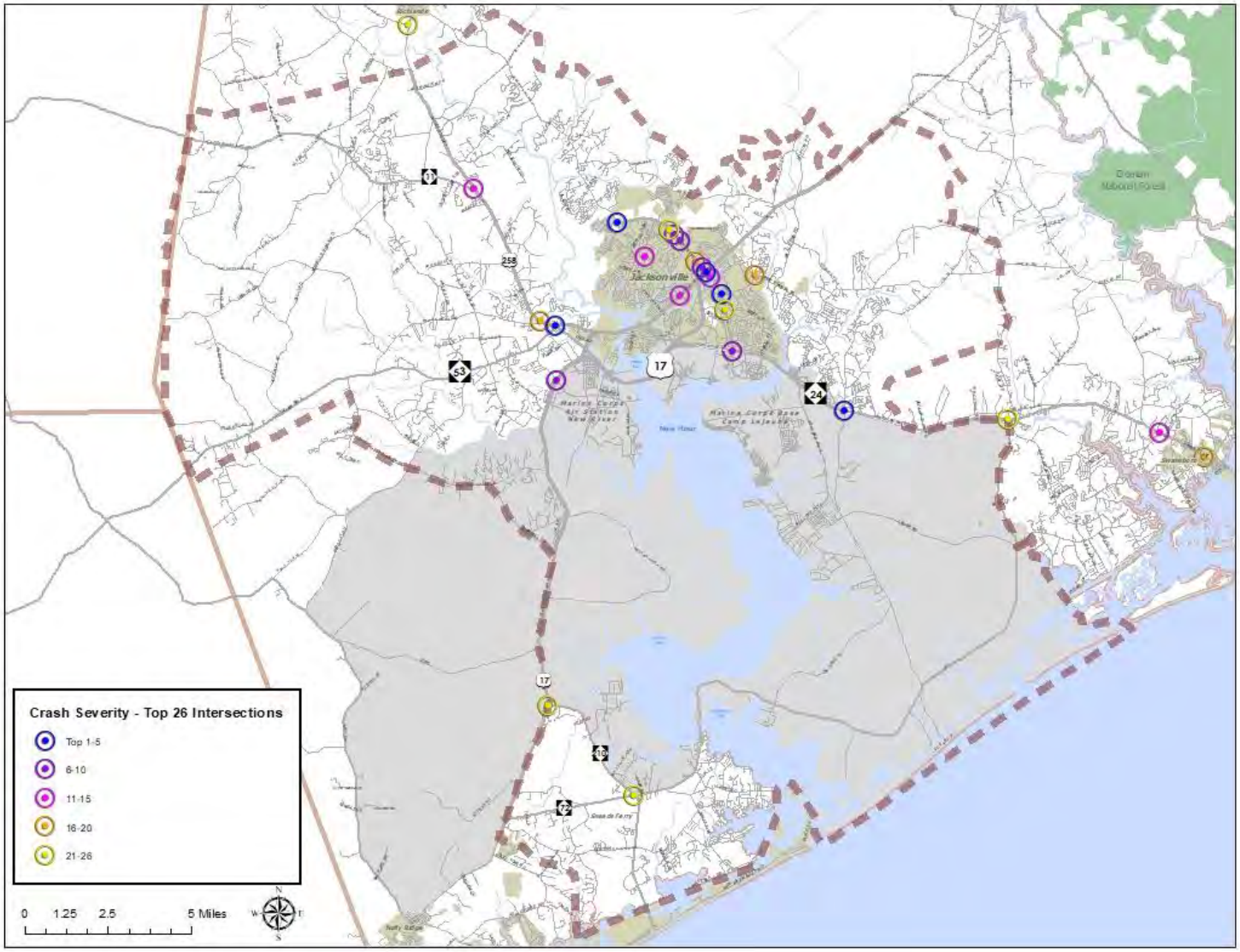


Crash History

The NCDOT provided crash data for all crashes in Onslow County for the period of January 1, 2017 through December 31, 2019. Within the JUMPO study area there were 15,706 reported collisions that resulted in 321 fatalities or disabling injury (which is serious enough to prevent normal activity for at least one day). There were 43 collisions that involved a bicyclist and there were 111 collisions with a pedestrian.

Collision Severity	Number of Collisions
Fatality and Disability Injury	97
Evident and Possible Injury	2016
No Injuries	11,231

Collisions with Bicyclists and Pedestrians	Number of Collisions	Percent of Total
Bicyclist	43	0.4%
Pedestrian	111	0.7%



Rank	Street 1	Street 2	Crashes				Severity Index
			Total	K + A	B + C	No Injuries	
1	US 17	NC 53 (Western)	129	2	32	346	3.15
2	US 258	NC 53	106	0	37	258	2.75
3	NC 53 (Western)	SR1308 (Gum Branch)	81	1	24	205	3.31
4	NC 24	SR 1406 (Piney Green)	77	0	3	4	3.96
5	NC 53 (Western)	SR 1403 (Country Club)	77	1	25	187	3.71
6	NC 53 (Western)	Gateway Dr	69	0	33	185	2.82
7	NC 24	NC 53	68	1	12	194	3.31
8	NC 53 (Western)	Marlin Dr	55	0	29	151	3.42
9	US 17	SR 1130 (Old Maplehurst Rd)	53	0	25	122	3.09
10	NC 53 (Western)	SR 2715 (Trade St)	51	0	16	135	2.45
11	US 258	NC 111	50	7	26	116	8.84
12	NC 53 (Western)	Commerce Rd	49	0	19	127	2.81
13	NC 24	SR 1509 (Queens Creek Rd)	49	0	24	118	3.11
14	US 17	SR 1308 (Gum Branch Rd)	46	1	12	122	4.1
15	SR1308 (Gum Branch)	SR 1336 (Henderson Dr)	46	0	16	100	3.25
16	NC 53 (Western)	Circuit Ln	46	0	14	135	2.45
17	SR1403 (Country Club)	SR 1406 (Piney Green)	45	1	16	98	4.16
18	US 258	NC 24	44	1	21	106	4.4
19	US 258	SR 1213 (Blue Creek Rd)	44	0	12	116	2.85
20	NC 24	SR 1512 (Old Hammocks Rd)	43	0	15	115	2.38
21	NC 172	NC 210	41	0	9	104	2.26
22	NC 53 (Western)	SR 2614 (Huff Dr)	41	0	18	114	3.53
23	NC 53 (Western)	SR 1336 (Henderson Dr)	39	0	10	107	1.95
24	US 17	NC 210	38	0	19	112	3.34
25	NC 24	NC 172	38	0	26	94	3.53
26	NC 24	SR 1238 (Koonce Fork Rd)	37	3	29	78	7.9

*Rank #2 and #18 involve the same larger intersection known as US 258/NC 53/NC24

Fatal (K)—Death occurring within twelve months of the crash

Disabling (A)—Injury is serious enough to prevent normal activity for at least one day

Evident (B)—Non-fatal or disabling injuries that are evident at the scene of the crash

Possible (C) —No visible injury, but those involved in the crash complain of pain or momentary unconsciousness

None (O)—No injury; property damage only

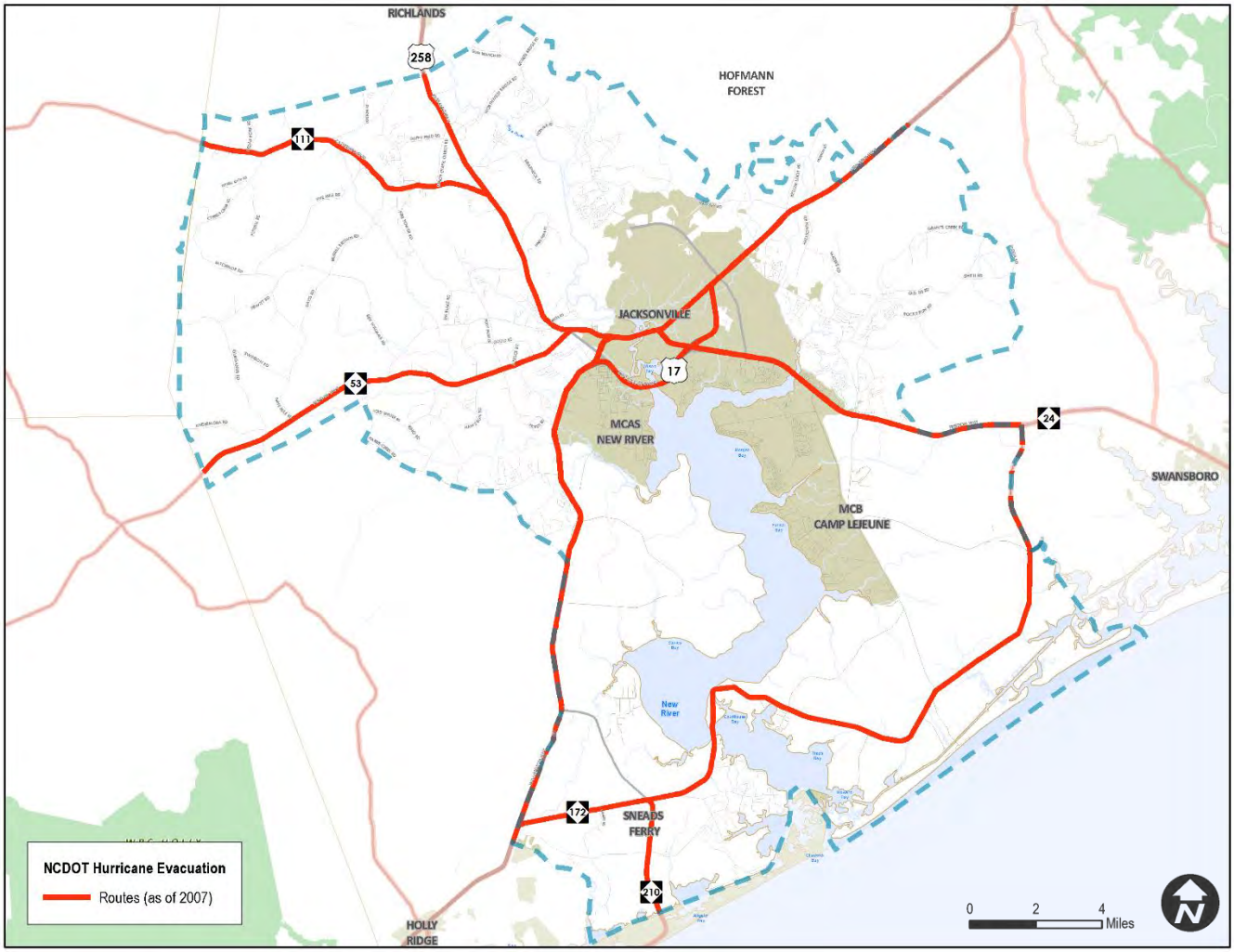
Unknown (U)—Unknown if any injury occurred

*Equivalent Property Damage Only Rate is a measure of severity that places more weight on crashes resulting in a fatality or serious injury, less weight on crashes resulting in minor injuries, and the least weight on crashes resulting in property damage only.

Evacuation Routes

The NCDOT designated a system of hurricane evacuation routes to help residents and visitors stay safe before, during, and after hurricane events. Most evacuation routes are marked with circular blue signs that read "Evacuation Route" and are typically along interstates and major highways in the state's coastal region, including those in the JUMPO study area. Routes are selected to provide the most direct paths to areas not usually affected by hurricanes where food, water, and shelter would be available, and are chosen based on the ability to accommodate heavy traffic volumes and higher speed limits. Routes are designated not only to provide information to the traveling public, but also to help with the consolidation of emergency responders and emergency resources. The NCDOT strongly encourages travelers to use designated evacuation routes so that they do not get lost or stranded on local routes where emergency personnel may be unable to help.

Designated evacuation routes in the JUMPO study area include US 17, US 258, NC 24, NC 53, NC 111, NC 172, and NC 210 as shown in the map below. The roadway recommendations described in Chapter 5 include safety and operational improvements to all or portions of each of these corridors. These recommendations will improve the safety and security of these facilities.



Bicycle and Pedestrian

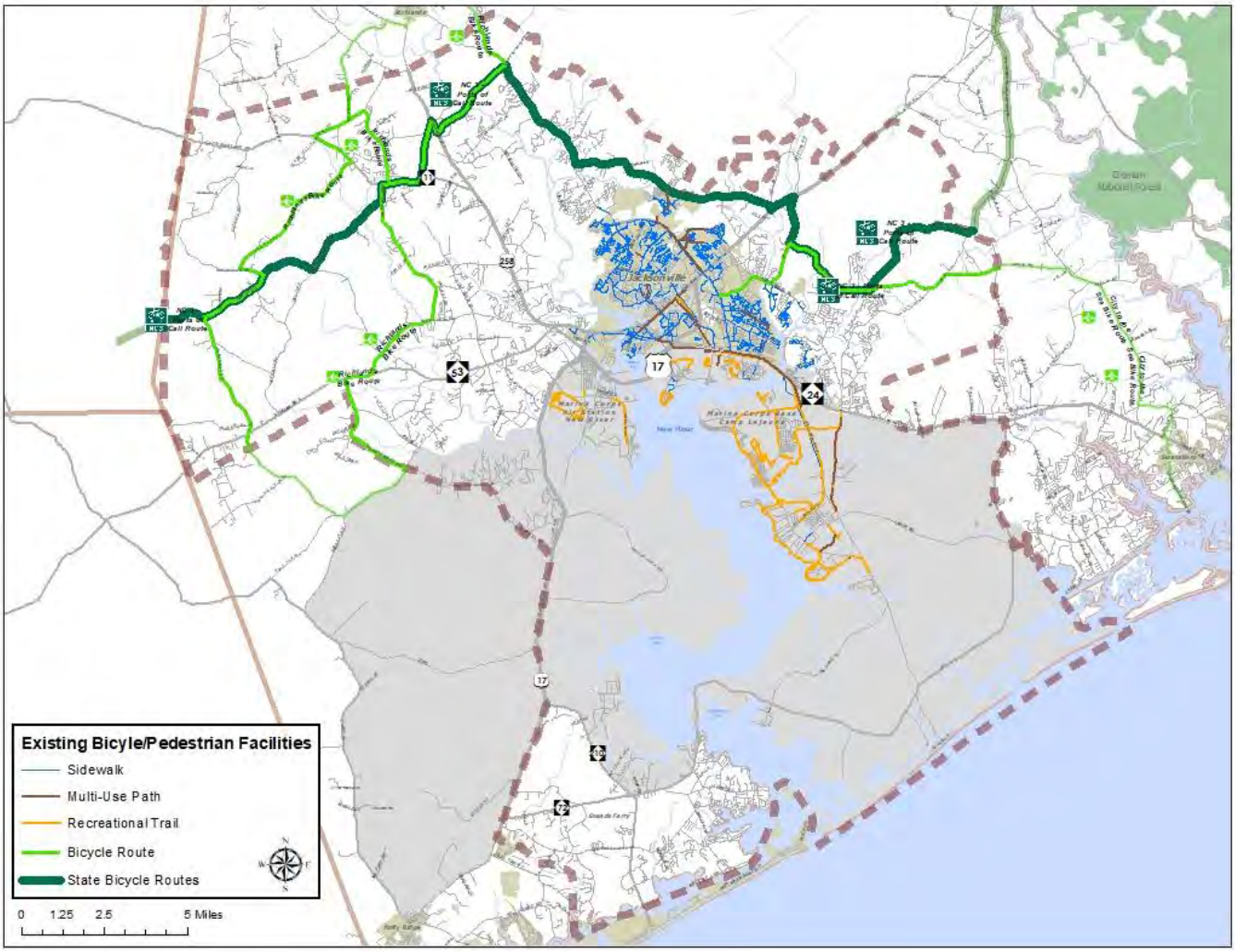
The City of Jacksonville has a comprehensive inventory of sidewalks that identifies sidewalk facilities on either side of a particular roadway. The inventory includes multi-use trails and paths, crosswalks, mid-block crossings, driveway crossings and a number of pedestrian and roadway bridge facilities that carry pedestrian traffic. The inventory includes proposed facilities as well as the existing network. Camp Lejeune also has an inventory of existing, programmed, planned, and recommended bicycle and pedestrian facilities and multi-use trails or paths. The JUMPO study area is crossed by the NC 3 State Bicycle Route along the coastal portion of the study area, and is also home to a portion of the Richlands and City to Sea bicycle routes; all are on-road bicycle facilities.

According to Jacksonville's inventory, approximately 189.7 linear miles of sidewalk and just over 19 miles of multi-use paths or trails are located in the JUMPO study area. In addition, the JUMPO study area includes over 50.3 miles of existing on-road bicycle facilities. These facilities are shown in the table to the right and map below.

Existing Bicycle/Pedestrian Facility Miles in JUMPO

Facility Type	Jacksonville/ JUMPO	Camp Lejeune[1]	State Facilities	Total
Sidewalks	189.7	2.6	0	192.3
Multi-Use Paths / Trails	19.3	81.2	0	100.5
On-Street Bike Facilities	50.3[2]	0	24.4[3]	74.7

1. User must have valid military ID for access
2. Richland Route (39.6), City to Sea Route (10.7)
3. NC Bike Route 3

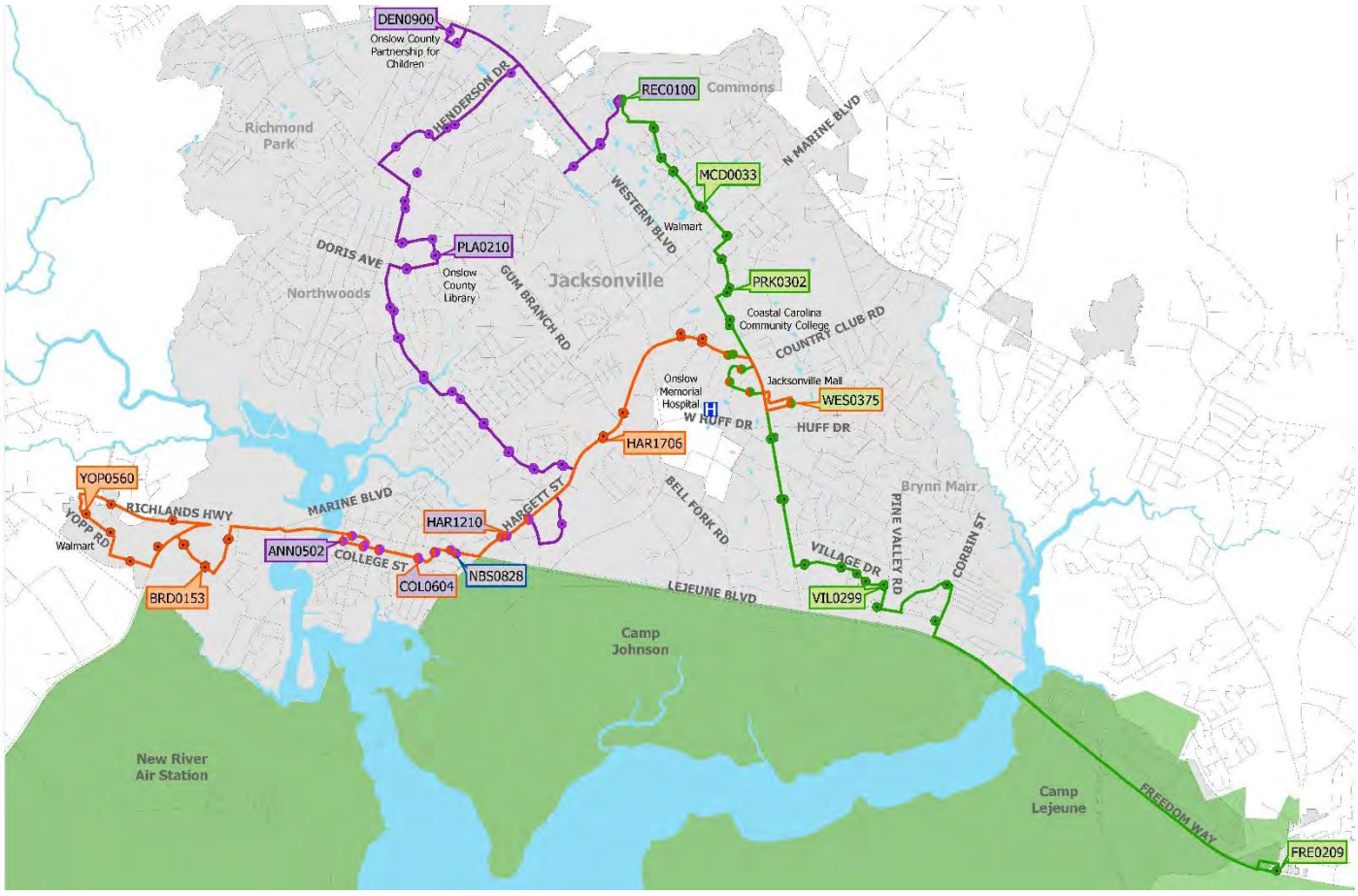


Transit

Jacksonville Transit provides fixed-route bus service within the City of Jacksonville and parts of Onslow County as well as express bus service between the city and adjacent military installations. In Fiscal Year 2019 (FY 19), Jacksonville Transit operated 22,690 hours and 359,925 miles of service and carried 121,095 passengers. Jacksonville Transit grew out of the Onslow United Transit System (OUTS), an agency that continues to provide rural transit service in Onslow County and demand response (dial-a-ride) service for Jacksonville Transit.

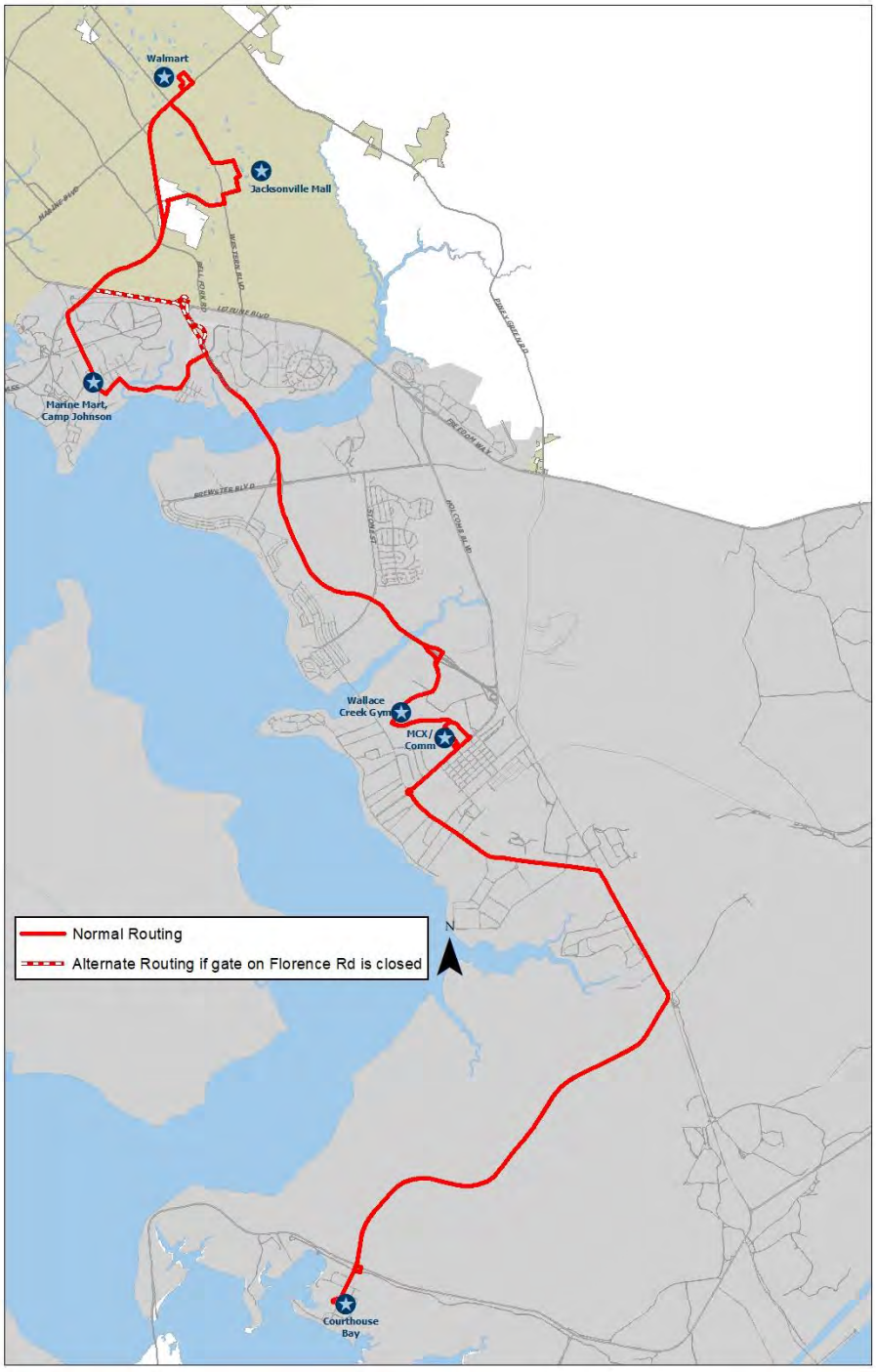
Local Fixed-Route Service

Jacksonville Transit operates three local fixed-route services seven days per week. Route 101 (the Purple Route) operates from downtown to the Commons Park & Ride Facility via Onslow Drive, Henderson Drive and Western Boulevard. End to end travel time is 45 to 50 minutes depending on direction. Route 102 (the Green Route) operates from Commons Park and Ride facility to the Piney Green Shopping Center via Jacksonville Mall. This leg requires 40 to 45 minutes in travel time. Route 103 (the Orange Route) operates from the Yopp Road Walmart to Jacksonville Mall via downtown and Hargett Street and Country Club. This leg requires 30 to 35 minutes of travel time. On system maps and schedules, the Green and Purple routes are shown as distinct services; but operationally, they are fully interlined with buses changing headsigns at the approximate mid-point of the circuit (at the Commons Park and Ride Facility). Local fixed-route trips cost $1.50 one-way. Seniors 65 years and older, youths between 6 and 18 years old, and persons with disabilities pay half fare $0.75 (with Reduced Fare ID Card issued by Jacksonville Transit). Children under 6 years old and personal aides ride free.



Express Route Service

Jacksonville Transit operates one Express Route Service. The Scarlet Route operates between the Jacksonville Mall and Camp Lejeune via Camp Johnson on Friday evenings from 5:00 PM to 10:00 PM, on Saturdays from 10:00 AM to 10:00 PM, and on Sundays from 10:00 AM to 6:00 PM. Service runs every hour on Fridays, Saturdays, and Sundays. Express service costs $4.00 one-way, with a $2.00 discount to ADA paratransit eligible passengers.



Paratransit Service

Jacksonville Transit provides complementary paratransit service for individuals who are unable to use the local fixed-route service. This service is offered in accordance with the Federal Americans with Disabilities Act (ADA), and offers complementary paratransit service during Jacksonville Transit's hours of operation. Jacksonville Transit meets its ADA obligation through a contract with OUTS. OUTS operates a single call-center for passengers and is responsible for determining eligibility for the service, reservations, scheduling, dispatch, and providing transportation. Complementary paratransit service is not required for express routes.

Demand Response Service

OUTS is a coordinated public transit service provider that operates curb-to-curb demand response services open to all residents in Onslow County and the City of Jacksonville. As part of its service network, OUTS also holds contracts to provide service for several area programs. Service is available Monday through Friday 5:00 AM to 9:00 PM and costs between $3 and $5, determined by home location. Jacksonville Transit is closely coordinated with OUTS. Collaboration between agencies is long standing and up until January 2011, both Jacksonville Transit and OUTS procured service through the same contract.

Service	Type	Span and Frequency	Features
Local Fixed-Route Service			
Route 101 (Purple) Downtown to Commons Park & Ride Facility	Fixed-Route $1.50 (free transfers)	Weekdays: hourly (6:00 AM to 7:55 PM) Weekends and holidays: hourly (10:00 AM to 7:55 PM)	Youths, seniors and persons with disabilities pay half fare ($0.75) Complementary paratransit available
Route 102 (Green) Commons Park & Ride Facility to Piney Green Shopping Center	Same as Route 101	Same as Route 101	Same as Route 101
Route 103 (Orange) Yopp Road Walmart to Jacksonville Mall	Same as Route 101	Same as Route 101	Same as Route 101
Express Service			
Scarlet Route	Weekend Express Service $4.00 (free transfers)	Fridays: hourly (5:00 PM to 10:00 AM) Saturdays: hourly (10:00 AM to 10:00 PM) Sundays: hourly (10:00 AM to 6:00 PM)	Complementary paratransit Reduced fare ($2.00) for ADA paratransit eligible passengers
Demand Response Service			
Complementary Paratransit	Demand Response Double fixed-route fare (e.g., $3.00)	ADA eligible; trips within ¾ mile of fixed route system Weekdays (6:00 AM to 7:55 PM) Weekends (10:00 AM to 7:55 PM)	Available for travel in the fixed-route corridor only (within ¾ miles on either side of route alignment) during fixed-route service hours

Service	Type	Span and Frequency	Features
Onslow United Transit System (OUTS)	Demand Response $3 to $5	Countywide curb-to-curb service Weekdays (5:00 AM to 9:00 PM)	Open to the general public

Other Transportation Modes

Airports

The Albert J. Ellis Airport is a county-owned commercial airport that also provides general and corporate air services for the region. The Marine Corps Air Station New River is the only East Coast rotary wing and tiltrotor air station.

Railroads

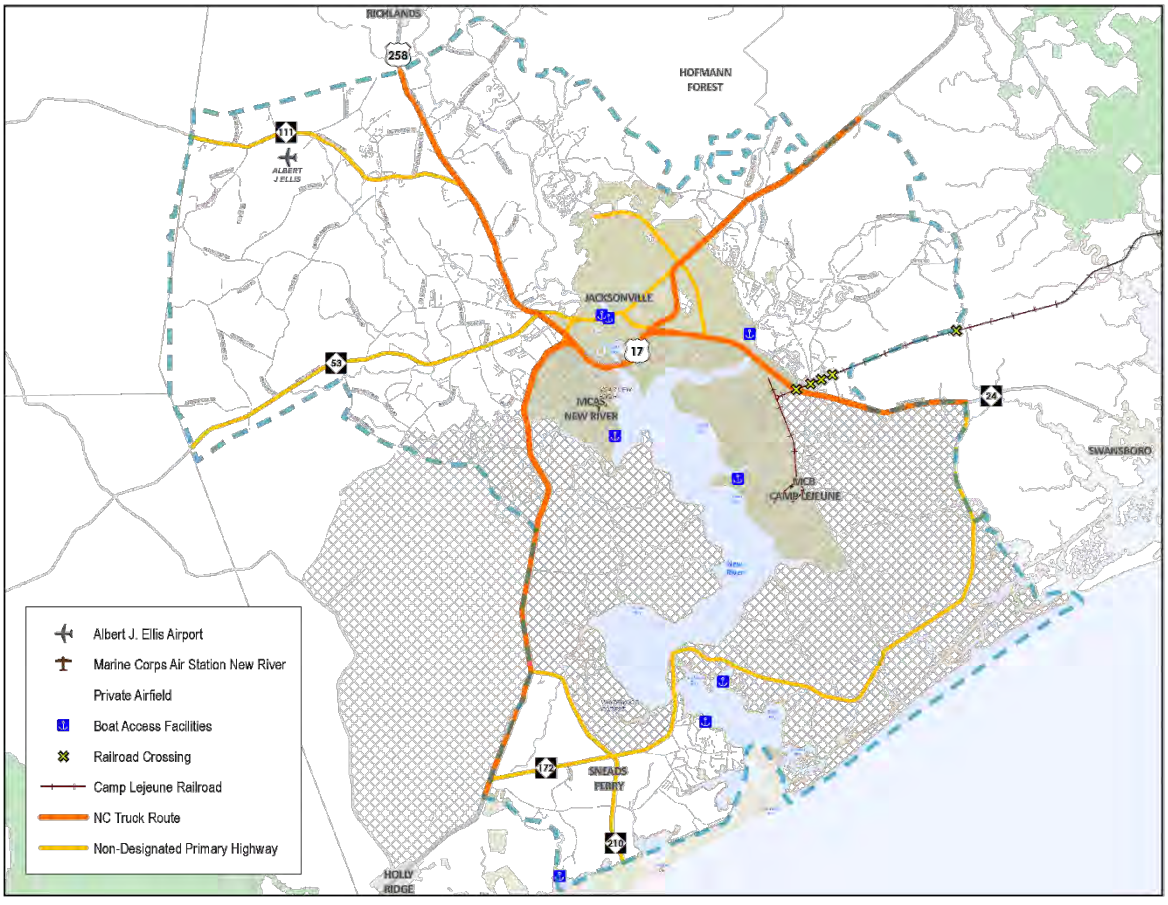
The Camp Lejeune Railroad was constructed in 1941 to connect Camp Lejeune with the Atlantic Coast Line Railroad in Jacksonville. The railroad, operated by Norfolk Southern, provides access to both the Port of Morehead City and Marine Corps Air Station at Cherry Point. Five at-grade railroad crossings with the Camp Lejeune Railroad are in the study area.

Boat Access

The New River and many of its tributaries are navigable waterways that provide access to the Atlantic Ocean. While Jacksonville is not a major port, commercial, public and private boat launch facilities are located in Jacksonville, Sneads Ferry, Turkey Point, MCB Camp Lejeune and MCAS New River.

Truck Routes

The North Carolina Truck Network (NCTN) includes US 17, US 258, and NC 24. The Surface Transportation Assistance Act (STAA) of 1982 applies to the NCTN and to trucks 53′ in length, 102″ width, or twin trailers. STAA dimensioned trucks are allowed reasonable access to locations within 3 miles of the NCTN without additional approval. Other trucks are not restricted unless a route is specifically signed.



Planning Document Review

The table below and on the following pages inventories the previous plans and documents completed in the JUMPO study area. Chronologically organized, the inventory summarizes planning efforts as far back as 1994 and includes comprehensive plans, corridor studies, a bicycle/pedestrian plan, feasibility studies, and transit plans.

Name	Adoption Date	Description	Major Recommendations
Thoroughfare Plan for the City of Jacksonville	February 1994	Second revision of the 1985 thoroughfare plan for Jacksonville which recommends improvements to address existing and projected road deficiencies.	• Develop subdivision ordinance and zoning ordinance • Create a capital improvements program to generate municipal funds for street improvements • Considering alternative funding sources including user impact fees, transportation bonds, federal demonstration project funds, and utility fees
Piney Green Road Corridor Transportation Plan	April 2001	Corridor study for Piney Green Road from US 17 (Marine Boulevard) to NC 24 (Lejeune Boulevard) that addresses development and traffic concerns along the corridor.	• Widen Piney Green Road to provide a 4-lane divided or 5-lane cross section • Reconfigure lane groups at major intersections • Discourage strip developments and expansion of industrial land uses • Encourage shared access and site connectivity
Jacksonville Urban Area 2035 Transportation Plan	March 2005	Long range transportation plan for the Jacksonville Urban Area which includes multi-modal transportation recommendations and strategies for funding and implementation.	• Implement countermeasures at high crash locations • Amend Thoroughfare Plan • Ensure proposed development applications are consistent with roadway corridor plans
Feasibility Study for the proposed US 258/NC 24 to US 17 connector (FS-0303C)	November 2007	Feasibility study for the proposed connector (Northwest Corridor) from US 258/NC 24 to US 17 in Jacksonville.	• Construct a four-lane divided shoulder section for section 1 (option B) and section 2 (option B), a diamond interchange with a loop in the southwest quadrant at the intersection of SR 1308 (Gum Branch Road) and SR 1470 (Western Boulevard), and a new bridge over the New River
The Jacksonville Bicycle and Pedestrian Transportation Plan	June 2008	Bicycle and pedestrian plan to increase mode share, improve safety, and to address immediate and long-term needs for bicyclists and pedestrians in the City of Jacksonville	• Develop a funding strategy to complete each of the physical, policy, and program recommendations included in the plan • Coordinate all recommendations with Camp Lejeune • Develop a "Complete Streets" policy approach
2009 Jacksonville Collector Street Plan	2009	Master street plan to guide development in Jacksonville as an update to the 2000 collector street plan.	• Coordinate construction of collector streets with developers • Accept fees in lieu from developers to construct improvements in the future • Designate responsible parties and funding sources for streetscape maintenance

Name	Adoption Date	Description	Major Recommendations
Jacksonville & Onslow County Coordinated Human Services Transportation Plan	April 2009	Coordination plan for Jacksonville Transit, Onslow United Transit System, and social service agencies to provide community transportation services.	• Quantify transit data to measure performance and report accomplishments of transit services to government officials and stakeholders • Refine human service transportation program recommendations and assess potential funding levels • Use the New River Regional Transit Master Plan to inform the coordination process
Albert J. Ellis Airport Master Plan	July 2009	Action plan for airport development that supports existing and forecasted demand for aviation services.	• Construct 67,000-square-foot terminal • Improve sewer capacity • Construct air traffic control tower • Construct corporate and general aviation terminal
Onslow United Transit System Community Transportation Service Plan	September 2009	Five-year transit service plan required by NCDOT's Public Transportation Division to review current performance and recommend improvement strategies.	• Establish programs for mobility management, marketing analysis and outreach, and incentives for transit riders • Establish reverse commute services, park-n-ride lots, express routes, and vanpools • Provide fixed route service along the US 258 corridor • Maximize the use of technology, e.g. web-based scheduling tools and automated vehicle location technology
New River Regional Transit Master Plan	October 2009	Transit service and operations plan for Jacksonville Transit, Onslow United Transit System, and JUMPO, which consolidates the Jacksonville Transit Master Plan, the OUTS Community Transportation Service Plan, and the Coordinated Human Services Transportation Plan.	• Enhance and expand services by establishing five new fixed bus routes and considering three new deviated fixed routes • Continue the coordination between Jacksonville Transit and OUTS • Encourage Camp Lejeune to consider the design of queue-jump lanes for transit buses and to initiate the Transportation Incentive Program • Provide fixed route service along the US 258 corridor
Jacksonville Urban Area Metropolitan Planning Organization Long Range Transportation Plan	2010	Previous long range transportation plan for the Jacksonville Urban Area.	• Implement fiscally constrained bicycle, pedestrian, transit, aviation, freight, and roadway projects
Onslow County Comprehensive Plan (CAMA Core Land Use Plan)	January 2010	Comprehensive plan for Onslow County which sets goals and objectives to provide the legal basis for land use regulations and guides capital improvements planning.	• Prepare a shoreline access plan • Prepare a Unified Development Ordinance which will support connectivity between development and limit access from development on roads and highways • Encourage state-maintained roads to include bike lanes during design or expansion • Support public transportation services

Name	Adoption Date	Description	Major Recommendations
Transit System Development Plan	September 2011	Five-year transit system development plan for Jacksonville Transit that identifies service needs and opportunities, reviews existing performance, and recommends a plan to improve service.	• Improve local-fixed route services via route modification, decrease frequency to routes with low ridership, and increase frequency at peak times of day • Change express route service times and move route terminus from Jacksonville Mall to north along Western Boulevard • Offer on-demand service to Tarawa Terrace and Midway Park, Onslow Memorial Hospital, and northern Jacksonville around Western Boulevard and Gum Branch Road • Establish commuter services between Jacksonville and Wilmington
JUMPO Comprehensive Transportation Plan	April 2012	Comprehensive transportation plan required by North Carolina for the Jacksonville Urban Area.	• Several roadway projects which include ITS, widening, new roadways, and median construction • Implement new bus transit route along Hargett Street and Country Club Road • Construct sidewalks along major roadways • Construct new greenways and extend existing greenways to connect major destinations
Jacksonville Area Multimodal Center Feasibility Study	June 2012	Feasibility study for a regional multimodal transportation center in Jacksonville.	• Locate and design the multimodal transportation center to provide for growth in Jacksonville's transportation system and to contribute to smart growth patterns and potential redevelopment
Feasibility Study for the proposed widening of NC 172/NC 210 from US 17 to the USMC Gate (FS-1003C)	January 2013	Feasibility study for the proposed widening of NC 210 from US 17 to NC 172 and NC 172 from NC 210 to USMC Gate.	• Widen both NC 210 and NC 172 to four-lane divided shoulder sections with 12' travel lanes, a 23' raised grass median, 8' shoulders • Construct an interchange at US 17 and NC 210, dual bridges over Stones Creek, a flyover at NC 210 and NC 172, and dual bridges over the New River
NC 24 Corridor Study	April 2013	Corridor study for NC 23 from Bell Fork Road to Piney Green Road which reviews existing roadway issues and recommends improvements related to traffic management, non-motorized connectivity, traffic congestion, and safety.	• Implement preferred development principles through revisions to the CAMA Land Use Plan, Jacksonville UDO, and supporting policies and ordinances • Consider the creation of an access management overlay ordinance • Pursue high priority intersection lane additions and resurfacing • Enhance crosswalks and pedestrian signals and construct sidewalks along the corridor

Name	Adoption Date	Description	Major Recommendations
Western Boulevard (NC 53) Corridor Study	May 2014	Corridor study for Western Boulevard from NC 24 to US 17 which includes an assessment of transportation operations and a series of recommendations for all modes.	• Improve signage along Western Boulevard • Implement access management through installation of landscaped medians • Install street lighting • Construct a multi-use path along east side of corridor • Increase frequency of transit service
Jacksonville Urban Area Metropolitan Planning Organization Long Range Transportation Plan	2015	Previous long range transportation plan for the Jacksonville Urban Area.	• Implement fiscally constrained bicycle, pedestrian, transit, aviation, freight, and roadway projects
Downtown Circulation Study	2016	Comprehensive study considering all modes of transportation to streamline connectivity in the downtown area	• Convert Court Street to two-way traffic • Roundabouts to replace existing traffic signals along New Bridge Street • Modify streets to increase parking
Sneads Ferry Community Plan	July 2015	Develop a community vision tied to land use recommendations that identifies strategies to address traffic, safety, and access for all modes of transportation	• Construct multi-use path along NC210 • Improve/widen Old Folkstone Road • Widen NC 210 between US 17 and Betty Dixon Road to four-lane divided with amenities • Improve intersection of NC 127 and Sneads Ferry Road • Improvement intersection of NC 210 at NC 172
Burton Commerce Park Traffic Assessment	June 2016	Traffic assessment for the build-out of the 735-acre Burton Commerce Park to analyze existing and future traffic conditions to identify improvements	• Additional access points or additional turn lanes • Signalize the intersection • Internal roadways may require exclusive turn lanes upon full build-out
Camp Lejeune Railroad Commercial Freight Feasibility Study	June 2016	Evaluate the feasibility and advisability of establishing commercial freight rail service on the Camp Lejeune Railroad Line	• Potential industries and suitable properties for development available • Updated trackage agreement needed
2040 Long Range Transportation Plan – Amendment 1	January 2018	Additional projects added to support the NCDOT prioritization process and the addition of Map-21 and FAST Act national goal areas	• Recommendation for corridor improvements • Identified short-term and long-term projects • Add NCDOT safety targets
Albert J. Ellis Airport Master Plan Update	July 2018	Action plan for airport development that supports existing and forecasted demand for aviation services.	• Runway expansion project and realignment of Hwy 111 • Long term rental car facility • New entrance road to airport • Construct one T-hanger and apron expansion to accommodate it

Name	Adoption Date	Description	Major Recommendations
Jacksonville Transit System Development Plan Update	November 2018	Provide a five-year operational and financial strategy focusing on connecting fixed routes to new multi-modal transit station	• Offer additional payment options for riders • Partnership with WAVE for commuter service • Expand service along Gum Branch Road • Increase frequency on fixed-routes
2040 Long Range Transportation Plan – Amendment 1A	January 2019	Continuation of Amendment 1 by further incorporating performance measures as well as updated bicycle, pedestrian and collector street maps	• Updated bicycle and pedestrian map and projects • Updated collector streets • Additional of yearly safety targets, pavement and bridge targets, system performance and freight targets, and transit asset management targets

Conclusion

Documenting the existing system helps balance the competing interests of improving mobility and preserving the region's important natural, cultural, and transportation resources. The location of these resources must factor into the decision process when determining transportation investments—because it is good practice and a federal requirement. The earlier these features are identified, the more likely sustainable solutions will arise to reduce unnecessary delays and expenses throughout the design and construction of the projects.

Introduction

Since 2001 when Jacksonville's first fixed route public transportation launched in coordination with Onslow United Transit System (OUTS) and the North Carolina Department of Transportation, the greater region has continued to expand, adjust, and enhance public transportation service. The Moving Ahead for Progress in the 21st Century Act (MAP-21) requires MPOs to consider all modes of transportation in the analysis of region-wide mobility and the formulation of recommended plans, programs, and policies. The MTP should be an integrated, balanced intermodal transportation system that safely and efficiently moves people and goods. The purpose of the Public Transportation chapter of the *JUMPO 2045 MTP* is to build upon previous planning efforts and evaluate opportunities to create a coordinated system that serves existing and potential needs of the area and satisfies Federal and State eligibility requirements for financial assistance.

Planning Considerations

MAP-21 requires MPOs to consider all modes of transportation in the analysis of region-wide mobility and the development of recommended plans, programs, and policies. For public transportation, the following considerations are important.

Choice and Captive Riders

Transit serves two types of users: captive riders and choice riders.

- Captive riders do not have access to or the ability to use a personal vehicle. Transit options for them are essential. These riders include persons too young to drive, the elderly, persons with disabilities, and those without the financial means to own and operate a personal vehicle.
- Choice riders otherwise have access to a personal vehicle but instead choose to use transit. These riders include persons who decide not to own a personal automobile and those who decide to use transit for work, social, medical, or personal trips. Reasons choice riders use transit include saving money, convenience, comfort, or environmental principles.

Population in the Jacksonville area is becoming increasingly dispersed, making convenient transit service more complex and expensive to operate. To encourage transit use and decrease dependence on the automobile, a safe, comfortable customer delivery system with attractive and convenient amenities must be developed around bus stops. The customer delivery system requires a network of sidewalks, safe street crossings, and lighting. The efficiency of transit also depends on an interconnected street network suitable for bus traffic and convenient ways for riders to shift between public transportation modes. For these reasons, transit cannot be considered in isolation, and the strategies presented in this chapter support improvements to the larger transportation system.

Transit and Urban Form

People are more likely to use transit when service is convenient, dependable, and easy to use. While this level of service requires a complete network of roads, sidewalks, and bikeways, it also demands connections to the places people need to go at a time when they need to get there. Where possible, transit should occur in areas with transit-supportive urban form. Development types that maximize potential transit ridership include transit-oriented development, transit-ready development, and single-use transit destinations.

Transit-Oriented Development

Transit-oriented developments (TODs) provide a mixture of residential and commercial uses focused around a transit station or bus stop. The transit stop is surrounded by relatively high density development that spreads out as you move away from the center. The scale of a TOD generally is limited to ¼- to ½-mile in diameter to establish the walkability of the neighborhood. The design of such places maximizes access to transit and supports walking and biking between destinations.

Transit-Ready Development

In locations that lack existing transit facilities or lack the demand to support a TOD, regulations and guidelines that support transit-ready development should be enforced. Transit-ready development describes the coordinated design of new neighborhoods and activity centers that supports future transit expansion. Like TODs, transit-ready developments include a mixture of land uses, pedestrian-friendly design, appropriate locations and/or routes for transit, an interconnected network of internal streets, and appropriate densities supportive of future transit use.

Single-Use Transit Destinations

While transit-oriented and transit-ready developments represent ideal urban form for transit destinations, many existing single-use locations in the Jacksonville area are viable long-term facilities. Coastal Carolina Community College, Onslow Memorial Hospital, and Jacksonville Mall are a few examples of vital destinations for many residents of the Jacksonville region. These types of locations represent places where access to public transportation continues to be an important priority.

Ongoing Planning for Public Transportation

Public transportation does not exist in a vacuum, operating apart from regional land uses and other transportation modes. Even seemingly irrelevant decisions, such as where to locate a small residential development, can create a significant challenge for a provider to operate efficiently if those residents are highly dependent on public transportation service to meet their mobility and accessibility needs. Therefore, public transportation must be included in land use and transportation decision-making. Triggers that call for public transportation planning include:

- Population growth, decline, shifts, or natural changes (e.g. an aging population);
- Employment growth, decline, or shifts (e.g. retail, commercial, industrial);
- Loss or addition of a major employer
- Changes to existing employment levels at major employers
- Major retail or other activity center development (e.g. big box stores, revitalization projects, malls, etc.);
- Residential development plans;
- Changes to local zoning codes, especially those that increase or decrease density; and
- Regional and local transportation decisions, such as those regarding the highway and road network, bicycle and pedestrian network, and regional bus, train, or airline services.

Thus, similar to many other modes, public transportation planning is ongoing and continuous.

Service Design Guidelines/Performance Metrics

Transit is the primary player in local Jacksonville public transportation services. In line with the principle of ongoing planning, Jacksonville Transit and OUTS can rely on service design guidelines and performance metrics to continuously monitor their services, act as a trigger for reevaluating and redesigning existing services, and developing new services. Service design guidelines and performance metrics help transit agencies target improvements in the quality of transit services over today's levels to meet customer desires.

The first step to developing service design guidelines and performance metrics is for Jacksonville Transit, OUTS, and other stakeholders to create a vision, goals, and objectives for transit in Jacksonville that reflect the opportunities and financial resources available. Transit often requires trade-offs and the characteristics of an area never remain stagnant, so having these discussions early means easier decision-making down the road. Service design guidelines and performance metrics can then be created that reflect the vision, goals, and objectives, ensuring benefits such as:

- An efficient and effective allocation of resources that balances available resources with needed improvements to the level of service;
- Meeting pre-determined levels of service quality for all existing customers, potential customers, and geographic areas; and
- A consistent and fair basis for evaluating proposed improvements to existing transit services and for considering new transit services.

For a small system like Jacksonville, the service design guidelines and performance metrics can be simple at first and progress over time; they should be living documents. Setting realistic targets, such as ridership per trip by service type, helps to evaluate services objectively and make improvements, changes, or cuts on a regular and defensible basis. The process of goal setting can also lead to greater follow-through on recommendations.

Previous Planning Efforts

Jacksonville Transit System Development Plan (September 2011)

This comprehensive transit plan was intended to identify service needs and opportunities, review existing service performance and productivity, and lay out a five-year strategic plan to address gaps and opportunities that improve the delivery of service. The analysis and resulting recommendations include the full spectrum of service delivery, spanning organizational, communication, capital, and operation structures. The document also lays out a funding and implementation plan to support the recommendations.

Focused mostly on Jacksonville Transit, but recognizing OUTS as a critical partner in successful transit service, the development plan recommends changes to local fixed route services, express route services, services to new areas, and development of new service models. Implementation was broken down into the immediate term (6-18 months), short term (18 months-3 years), and longer term (3+ years).

Jacksonville Transit has been committed to implementing the recommendations from the development plan but work remains. Many of the recommendations have thus been incorporated into this long range transportation plan for additional consideration and promotion. Along with many smaller changes, significant transit changes have already been made to include a third fixed route along Hargett Street

and Country Club Road, improvements to the eastern end of the Green Route, and development of a new multimodal center. Jacksonville Transit is in the process of modifying Route 103 (Orange) in order to free up a resource to use in the implementation of a new route, Route 104 (Blue). Route 104 will serve the Bellfork and Gum Branch Road Corridor from the Brynn Marr area up to Western Blvd. It will serve a portion of the Western Blvd. extension from Gum Branch to Carolina Forest Blvd.

Additional Plans

Jacksonville has grown quickly in the last decade, which resulted in a variety of planning efforts aimed at accommodating the growth and ensuring that transportation needs are met. In addition to the Jacksonville Transit System Development Plan, six of the most significant public transportation plans include:

- Jacksonville & Onslow County Coordinated Human Services Transportation Plan (April 2009) – Transportation often is an overlooked component of support for individuals who are unable to provide for their own transportation due to disabilities, lack of financial resources, or other circumstances. This plan acts as a guide for continuing and potentially expanding coordination of transportation between Jacksonville Transit, OUTS, and other social service agencies with the region.
- Albert J. Ellis Airport Master Plan (July 2009) and Updates (July 2018) – Onslow County initiated a master planning effort for Albert J. Ellis Airport to outline a course of action for airport development that supports the forecasted demand for aviation services. The plan included an evaluation of the airport's facilities and surrounding environs, evaluation of alternatives, and a listed of prioritized capital projects.
- OUTS Community Transportation Service Plan (September 2009) – This plan reviews the performance and organization of OUTS services. The plan makes recommendations to increase mobility options for citizens and improve operations and management through a coordinated transit system with OUTS and Jacksonville Transit.
- MCB Camp Lejeune/MCAS New River Transportation Demand Management Plan (June 2011) – This plan created a set of strategies to utilize the existing transportation system in Jacksonville efficiently without making significant physical modifications. A broad range of recommendations were made, including numerous public transportation options, such as vanpools, park-and-ride lots, better public information, and a rideshare coordinator.
- Jacksonville Urban Area Multimodal Center Feasibility Study (June 2012) – A regional multimodal center in Jacksonville is a priority for the City and State of North Carolina. Integrating all forms of public transportation—along with the pedestrian and bicycle network—helps create an accessible, safe, and efficient transportation system for all users that can grow as the region grows. By expanding the mobility of citizens, the multimodal center also promotes the use of alternative transportation in the region.
- Comprehensive State Rail Plan (August 2015) – The plan defined a vision for North Carolina's rail infrastructure and identified projects that have economic and quality-of-life benefits for the state's residents and businesses. Development of the plan was in response to surging popularity of rail travel and increasing congestion on the state's highways. Leaders ultimately seek to connect people, places, and goods through efficient alternatives to car travel.

Beyond these, numerous plans include additional information on public transportation but are older or do not focus on the topic exclusively:

- City of Jacksonville Bicycle and Pedestrian Transportation Plan (2008)
- New River Regional Transit Master Plan (2009)
- Jacksonville MPO Long Range Transportation Plan (2010)
- Comprehensive Transportation Plan (2012)
- Sneads Ferry Community Plan (2014)

These plans are accessible at www.jumpo-nc.org/plans-documents.

Recommendations

The public transportation recommendations of the *JUMPO 2045 MTP* are a continuation of the prior MTP. The recommendations are broken down by operational, facility, additional capital investments, and partnerships. In consultation with Jacksonville Transit (JT) and Onslow United Transit System (OUTS), the recommendations are prioritized into short- (through 2029) and long- (2030-2045) term priorities. (Note: An asterisk next to a recommendation signifies a combined action or need for both JT and OUTS.)

Operational Recommendations

Short-Term Priorities (through 2029)

- New Fare Structure and Media
- Universal Pass Programs
- Mobility Management
- Marketing and Outreach
- Expand Veteran Service (OUTS)
- Municipal Non-ADA On-Demand Response Service (OUTS)
- Reduce Headways
- Service to Public Events
- Route Restructure for Multimodal Center
- Expand ADA Service to City Limit
- Amtrak and Greyhound Service Integration
- Airport Service
- MARSOC Expansion/Sneads Ferry

Long-Term Priorities (2030 to 2045)

- Employment Transportation
  - o Vanpool Service
  - o Park-and-Ride/Commuter Service
  - o Express Service to Municipalities and Urbanized Areas
  - o Rural Fixed Route
- Expand Service to Bases
- Intercity Express Service

Short-Term Priorities (through 2029)

New Fare Structure and Media

Improvements to the fare structure and the types of fare media made available to riders is a key opportunity to improving passenger convenience and encourage ridership. Recommendations include a Day Pass, Weekend Pass, Monthly Pass, and Ten-Ride Ticket Book. Half-fares should also be available for each of these fare options. Diversifying the outlets where passes are sold, such as online, grocery stores, military bases, the mall, colleges, and the USO, make using transit easier and more accessible.[1]

Universal Pass Programs

One of the most important ways transit users can benefit from partnerships between transit agencies and major employers and schools is through pass programs. Universal pass programs are typically structured so that an employer or institution pays a lump sum amount based on current transit usage to provide a transit pass to every employee or student. This approach, which has been successful around the country, offers employers a mechanism to promote use of public transportation at a very low initial cost. The intention of the program it to make transit more convenient – individuals have a pass and there is no cost – so they will start to use the bus for occasional trips. Once people try riding the bus, they often transition to more regular riders. As a result, transit ridership should increase over time. Potential participants in a program such as this include the City of Jacksonville, Coastal Carolina Community College, Onslow Memorial Hospital, Onslow County Public Schools, Jacksonville Mall, Onslow County, Camp Lejeune, New River Air Station/Camp Geiger, Camp Johnson, and other major employers (see Partnerships).[2]

Mobility Management

Previous planning efforts include a number of projects that involve strategies outside of traditional transit service planning, such as outreach, marketing, and passenger information systems, as well as the development of partnerships with external agencies and institutions, such as human service agencies, military installations, private employers, and community colleges. A mobility manager should be hired to undertake these, plus other community transportation programs. Funding for the position may be partially available through federal grants. Specifically, the mobility manager may be tasked to:

- Conduct marketing and outreach strategies to support implementation of the TSDP, including educating residents about how to use on-demand services.
- Collaborate more closely with OUTS to ensure people have access to the appropriate service and that transportation is provided as effectively and efficiently as possible.
- Create transit pass programs.
- Coordinate with the military installations and work with partners (specified in the Partnerships section) to ensure transportation services are effectively marketed.[3]

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[1] Ibid.
[2] Ibid.
[3] Jacksonville Transit System Development Plan, http://www.jumpo-nc.org/plans-documents, September 2011.

The 2011 MCB Camp Lejeune/MCAS New River Transportation Demand Management (TDM) Plan also recommended creating a rideshare coordinator position. The rideshare coordinator would be the single point of contact for TDM implementation oversight, fostering closer coordination between the military installations and the community, as well as implementing a cohesive TDM program.[4] Responsibilities for the rideshare coordinator are very similar to the responsibilities of the mobility manager. Thus, these two positions can be combined, creating a position with enough responsibilities to be on a full-time basis, though the City and military installations may wish to start with a part-time position.

Marketing and Outreach

Marketing and outreach increase support for and awareness of Jacksonville Transit and OUTS in the broader community. Strategies for marketing and outreach also help transit operators open new markets and develop partnerships that directly and indirectly lead to increased transit use. Potential steps associated with developing an outreach strategy include:

- Attend community meetings to hold "listening sessions" and make presentations about service changes. By reaching out to the most relevant community groups, Jacksonville Transit and OUTS will increase awareness, develop trust, and encourage ridership.
- As any service changes are implemented, meet with institutions regularly to understand their transportation needs and constraints and discuss opportunities for transit to meet those needs.
- Strengthen the existing relationship with the military installations so that Jacksonville Transit and OUTS are increasingly considered a partner in meeting base transportation needs.
- Develop strategic relationships with other regional transit operators, such as the Wilmington Wave, to explore opportunities for future service coordination and development.
- Continue and expand participation in community activities.

Numerous opportunities exist that could improve marketing for Jacksonville Transit and OUTS:

- Update existing marketing materials that show Jacksonville Transit services and timetables and build on those materials to show new services. Route schedules should be clear and simple, highlighting transfer points and times, and should be packaged as tri-fold brochures for easy portability.
- Create a system map that shows Jacksonville Transit local fixed-route, OUTS on-demand, and express services on an integrated schedule and map. The map should be posted online as well as in key physical locations, such as in City Hall, Coastal Carolina Community College (CCCC), Jacksonville Mall, and other major stops. This will allow current and prospective customers to see the full range of transit services available to them, and help them better navigate throughout the service area.
- Create a service schedule brochure that includes all transit services in Jacksonville. The brochure should be dated so people know the information is relevant.
- Strengthen Jacksonville Transit's online presence. This would likely include creating a standalone webpage that contains online pass and ticket sales, an online trip planner, a place

[4] MCB Camp Lejeune/MCAS New River Transportation Demand Management (TDM) Plan, http://nceastmgtf.com/modules/evolvecms/upload/LejeuneNewRiverTDM_06-17-11%281%29.pdf, June 2011.

for residents to ask questions or make comments, and links to other regional transportation services.

- Distribute schedules and brochures widely and at key locations such as the CCCC, Jacksonville Mall, City Hall, and at major stops.
- Update and conduct periodic checks of the Jacksonville Transit and OUTS websites so that all information is relevant, consistent, and easy to find.
- Create tailored "how to ride the bus" materials for large institutions (military installations, community colleges and the Department of Social Services) and/or select markets (college students, older adults). These materials should also be widely distributed, available online, and featured on G10 TV.
- Develop introductory "how to ride the bus" materials for military institutions and CCCC that can be provided to individuals as part of an initiation or introductory materials.
    - Attend CCCC registration events to provide information about public transportation.
    - Attend information sessions organized by the military institutions to tell attendees about Jacksonville Transit and OUTS services and to provide marketing materials.[5]

Expand Veteran Service (OUTS)

OUTS currently works with the Disabled American Veterans (DAV) chapter in Jacksonville to provide some transit service to veterans. However, the funding for trip cost is not fully-allocated, so OUTS subsidizes the trip. In addition, OUTS provides some veteran service through the Family Endeavors program in Jacksonville. Once veterans leave this program, OUTS also has to subsidize those trip costs. Some of the frequently visited locations by veterans include a clinic on Henderson Drive and a residential complex 5-6 miles outside of the city. Expanding OUTS service to these locations would be a mutual benefit for both the program and the OUTS riders. The agency has started to track riders who are veterans, but records are still inconsistent. Once recording this information is reliable, various programs and funding opportunities exist to expand the service.

Municipal Non-ADA On-Demand Response Service (OUTS)

The City of Jacksonville currently offers on-demand response services beyond those supported by federal transportation funding through public-private partnership grants and the Community Development Block Grant (CDBG) program. The city recognizes the value of these grants to enhance the quality of life of residents by allowing government and private entities to work closely together. This collaboration allows for the greatest and most efficient use of funds. OUTS and the City have a partnership for transportation services to residents within the city limits (destinations and origins of trips must be within the city limits). Maintaining and potentially expanding this program helps to serve people who cannot ride traditional fixed routes, and reduces gaps in the service area and operating hours of fixed routes.

The Onslow Memorial Hospital/Jacksonville Mall is one of the highest ridership areas in Jacksonville. While currently served by the Green Route, OUTS also serves this area very frequently because of high demand. Thus, opportunities may exist for additional demand response service in this area in the

[5] Jacksonville Transit System Development Plan, http://www.jumpo-nc.org/plans-documents, September 2011.

future. Additionally, high residential and commercial development around Gum Branch Road/Western Boulevard exists. Jacksonville Transit is currently in the process of adding this connection.

Reduce Headways

Current Jacksonville Transit services, both local and express, operate hourly. Planning recommendations include increased frequency on local service during peak periods. Ridership could increase by as much as 75 percent on weekdays because of increased service frequency. Increasing frequency requires significant investment and can be one of the most costly ways to improve service. However, a transit agency often will see measurable increases in ridership, especially when improving from an hourly frequency. High costs are associated with additional labor hours and vehicle costs.

Service to Public Events

Public event transportation not only provides additional transportation options for event-goers but also demonstrates that the transit agency is a good community steward. Planning parking and transportation for a public event can be difficult, but transit agencies are typically already set up to help. Transit agencies should reach out to event organizers, public officials, or other involved community members to signal their willingness to coordinate. Reducing the number of cars that need to come to the event also is environmentally responsible. Charter regulations can make this type of service difficult to implement; advance research and partnership development is essential.

Route Restructure for Multimodal Center

Various local plans for the Jacksonville region, along with state and federal plans and policies, have called for development of a multimodal center to consolidate operations and increase connectivity. The center would integrate the pedestrian and bicycle networks of Jacksonville, all forms of public transportation services, offices for transportation staff, and potentially additional transportation services, such as private shuttles and vanpools. Local plans indicating a clear need for this type of center include the Jacksonville & Onslow County Coordinated Human Services Transportation Plan (April 2009), Community Transportation Service Plan (September 2009), New River Regional Transit Master Plan (October 2009), City of Jacksonville Coastal Area Management Act Land Use Plan (July 2011), and the Jacksonville Transit System Development Plan (September 2011).

Findings from a June 2012 Multimodal Center Feasibility Plan confirm that a multimodal center would be a sound investment for the Jacksonville community to improve regional and local mobility. The city identified a site on N. Marine Boulevard between E. Thompson Street and Bell Fork Road for the multimodal center, and plans are moving forward to design the center for this lot. Construction is expected to begin spring 2020 with completion the summer of 2021.

Expand ADA Service to City Limit

The Americans with Disabilities Act (ADA) currently requires transit agencies to operate demand response service for those unable to use fixed route service for trips that start and end within ¾ of a mile from fixed route service (not including express service). Jacksonville Transit meets its ADA obligation through a contract with OUTS. Complimentary service is available during regular operating hours. OUTS operates a single call center for passengers and is responsible for determining eligibility for the service, scheduling calls, and providing service.

OUTS currently offers additional demand response service throughout Onslow County at fares ranging from $3 to $5 for a one-way trip. Expanding ADA service to the city limit could lead to financial benefits

for OUTS by shifting the cost of some trips that start and end within Jacksonville to Jacksonville Transit, which has a greater ability to leverage federal and other funding. Funding for public transportation alternatives beyond those required by the ADA were previously funded under the federal New Freedom Program (Section 5317); however, with the enactment of the Moving Ahead for Progress in the 21st Century Act (MAP-21), New Freedom was folded into Section 5310 (Mobility Enhancements for Older Adults and People with Disabilities).

ADA service is also easier to plan and communicate to potential users – when a user is eligible under ADA guidelines, he or she has a guaranteed ride. In addition, city-wide ADA service allows for fixed route planning and redesign to occur without the worry of taking away service for those who cannot use regular buses.

Greyhound and Amtrak Service Integration

Both Amtrak and Greyhound have expressed a desire to integrate service at the proposed multimodal center, where administrative staff could also be housed:

Greyhound

Greyhound Lines, Inc. operates daily intercity bus service to Jacksonville from a terminal located on Onslow Drive. This service provides connections to many destinations throughout North Carolina and the United States; however, connectivity to Jacksonville Transit is limited to the terminal location served by existing routes. Greyhound riders often hail a taxi or walk from the terminal to extend their range of mobility. Greyhound staff has indicated a desire to improve coordination among the systems by routing service through the Jacksonville multimodal center when it is operational.[6]

Amtrak

Amtrak has regional bus shuttle services that connect multiple urban areas in southeastern North Carolina to passenger rail service in Wilson, North Carolina. Currently, one thruway shuttle runs between Wilmington and Wilson via Jacksonville, Kinston, and Goldsboro. Train users can take Jacksonville Transit to City Hall to reach this daily shuttle. Amtrak offers riders the ability to purchase a single ticket for access to both the shuttle and train service.

Travelers from Jacksonville can choose between two train routes at Wilson, both of which run once per day in each direction: 1) the Palmetto, which operates between New York City and Savannah, Georgia, and 2) the Carolinian, which operates between New York City and Charlotte, North Carolina, though northbound trains arrive in Wilson before the thruway shuttle. Connections to additional Amtrak trains are possible to travel throughout the U.S.

Amtrak staff has indicated a strong desire to continue to coordinate the thruway shuttle with existing local public transit systems. Furthermore, Amtrak has indicated a desire to sustain coordination among the systems in the future by routing service through the Jacksonville multimodal center when it is operational.[7]

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[6] Jacksonville Urban Area Multimodal Center Feasibility Study, http://www.jumpo-nc.org/plans-documents, June 2012.
[7] Jacksonville Urban Area Multimodal Center Feasibility Study, http://www.jumpo-nc.org/plans-documents, June 2012.

The North Carolina Department of Transportation's Comprehensive State Rail Plan (CSRP) was adopted in 2015 and is updated every five years. This plan clearly communicates the vision for North Carolina's rail system while supporting the state's goals and policies when it comes to rail to improve freight and passenger rail transportation. Leaders ultimately seek to connect people, places, and goods through efficient alternatives to car travel.

The executive summary of NCDOT's Comprehensive State Rail Plan includes numerous passenger rail projects, many of which will affect Jacksonville residents either directly or indirectly. The most noticeable of these projects includes new trainsets for the Carolinian line (within a timeframe of 2020-2035), station improvements at Wilson (2018-2025)[8], and southeastern NC passenger service from Raleigh to Wilmington (2020-2035).

Airport Service

Similar to the intercity express service, an airport shuttle or something similar would meet a specific transportation need. U.S. Airways and Delta currently serve Jacksonville on a limited schedule (approximately 15 flights each way). Shuttles should be timed to meet certain flights. The multimodal center could serve as the shuttle staging area and facilitate transfers.

MARSOC Expansion/Sneads Ferry

Sneads Ferry has grown rapidly since 2000 due to the growth of the U.S. Marine Corps Forces Special Operations Command (MARSOC) and increased access to Camp Lejeune via the back gate since 2011. The population of about 10,000 residents today is expected to more than double by 2045. Significant increases in traffic along N.C. 210 and N.C. 172 by 2035 have also prompted concerns over preserving the area's environment and heritage. To address the challenges, JUMPO and Onslow County worked with residents and other stakeholders to develop a vision and strategy that guides land use and transportation called the Sneads Ferry Community Plan.[9]

No public transportation currently exists within or connects to Sneads Ferry beyond the demand response service provided by OUTS. However, improved public transportation plays an important role in numerous goals of the plan, such as improving the overall access and mobility of the area, promoting economic vitality and tourism, preserving the unique character of Sneads Ferry, and integrating multiple transportation modes. With the adoption of this combined land use and transportation plan, the Sneads Ferry community hopes to spur development and growth without compromising cultural and environmental resources.[10]

Bell Fork/Gum Branch Service

Gum Branch Road (north of N. Marine Boulevard) and Bell Fork Road (south of N. Marine Boulevard) is a major northwest-southeast thoroughfare in Jacksonville. Though development is high in the area, much of it is low density residential. Few major employers or activity centers exist directly along the corridor but some exist in the near vicinity. Previous planning efforts identified select high need areas along the corridor, particularly near Western Boulevard and at some locations to the southwest of the

[8] Comprehensive State Rail Plan, Executive Summary. NCDOT Rail Division, https://www.ncdot.gov/divisions/rail/Pages/rail-plan.aspx, August 2015.
[9] Sneads Ferry Community Plan
[10] Sneads Ferry Community Plan

corridor.[11] Development and population and/or employment characteristics of the corridor should be continuously monitored and studied. Jacksonville Transit is expanding its service by adding a route along Gum Branch Road to address the demand in this area. Additionally, the construction of the multi-modal facility near the intersection of Gum Branch and Marine Boulevard will help to interconnect all of the bus routes allowing for greater connectivity and mobility within Jacksonville. Construction is expected to begin spring 2020 and to be completed summer 2021.

Long-Term Priorities (2030 to 2045)

Employment Transportation

On most transit services, especially fixed routes, the most common trip type is to reach jobs. Paying particular attention to this market often leads to a more successful service. Various plans completed by JUMPO – including the 2011 TSDP, 2009 Community Transportation Service Plan, and the 2009 County Coordinated Plan – have recognized this need. Developing an effective transit service to meet these specific transportation needs takes time and continuous evaluation. The service design guidelines can help evaluate the effectiveness of these services.

Vanpool Service

As an added or intermediate step toward commuter service, Jacksonville Transit should facilitate the development of vanpool service. A vanpool program would allow Jacksonville Transit to offer Jacksonville and Onslow County residents a service option in areas that do not meet the density requirements to support traditional fixed-route transit service. One potential vanpool opportunity includes service between Camp Lejeune (City of Jacksonville) and Marine Corps Air Station Cherry Point. A vanpool program allows for regional travel options, as vanpools are able to serve destinations both within and beyond the current Jacksonville Transit service area.

Vanpools typically can be started with just five participants, and routes and schedules are customized by the participants themselves to serve their specific destinations and shift times. The number of pickup and dropoff locations depends on the needs of the vanpool group, but park-and-ride lots are often utilized on one or both ends of the trip. Vanpools can also provide invaluable insight for transit agencies into where there is demand for more traditional transit services. If demand for vanpool service is strong between a particular origin/destination pair, Jacksonville Transit could eventually introduce fixed-route commuter bus service in its place. The cost of vanpool service to a transit agency can be quite minimal. In many cases, a private contractor such as Enterprise or VPSI provides the vans, and the vanpool participants split the cost of the service among themselves. The role of the transit agency is usually limited to marketing and ride-matching, but some agencies choose to subsidize the cost for participants.[12]

[11] Jacksonville Transit System Development Plan, http://www.jumpo-nc.org/plans-documents, September 2011.
[12] Jacksonville Transit System Development Plan, http://www.jumpo-nc.org/plans-documents, September 2011.

Commuter Service

Commuter service tends to operate in the morning and afternoon peak hours when most people are trying to get to and from work. In smaller urbanized areas, there are often only a few trips per day and only two stops (at the beginning and end). Park-and-ride lots serve as the stop on at least one end in many cases. Many stakeholders and community members would like commuter service to Camp Lejeune. Commuter services to Camp Lejeune would be targeted towards specific commute times and offer weekday services in the morning and afternoon peak. The need for this service is primarily associated with congestion at the base gates. Previous planning efforts did not end up recommending this service in the immediate term, primarily because of the ongoing infrastructure development at Camp Lejeune. This is still true as Camp Lejeune has let several large redevelopment/development projects expected to begin in 2020 and last approximately five years.

As development slows, revisiting the potential for this is warranted. To make this type of service most successful, stakeholders should support an initiative to create priority treatment for express buses, allowing them to bypass other traffic. While this approach is politically difficult, this type of initiative could provide a significant marketing boost for transit.[13]

Park & Ride Facilities

Realizing the shortage of available parking at key destinations complied with the demand for commuter service outside of Jacksonville, Jacksonville Transit constructed the Commons Park & Ride Facility which serves as a central parking facility conveniently located near the Jacksonville Commons Recreation Complete. It allows for quick and easy access to businesses as well as an easy connection to main corridors.

Express Service to Municipalities and Urbanized Areas

Typically, express services to surrounding small communities are coordinated with standard work hours or shift times of specific employers. In this way, the service is also more of a commuter service, though stops tend to be limited like express service. This type of service also would align with state interests of regionalization. However, this service should only be considered after vanpools have been implemented and demonstrate a strong interest in the travel pattern or if the service is underwritten/jointly funded by a particular employer or other destination. That reduces the risk for the transit agency on what could be a challenging service to successfully operate.

Rural Fixed Route

Productive transit service relies heavily on dense development, which is not the predominant land use policy in the area. Employers will often locate outside of an urbanized area to take advantage of low property taxes, tax incentives, and/or the generally low cost of land. Similar to the discussion on express service to other municipalities, serving these employers is challenging and costly for transit agencies. Working with the employer to develop service that matches shift times and employee locations can lead to a service that is relatively low cost without necessitating too much deviation.

[13] Jacksonville Transit System Development Plan, http://www.jumpo-nc.org/plans-documents, September 2011.

Consulting with OUTS can also help develop routes around specific rural needs. Vanpools are an alternative to rural fixed routes that may prove more successful in the end.

Expand Service to Bases

The military installations are the major employers in Jacksonville. Thus, it is important for Jacksonville Transit to work with the military bases to increase ridership and provide better service. However, no service operates directly on the bases, with the exception of the Express Route on Fridays, weekends, and holidays. Strengthening the existing partnership with Camp Lejeune/ New River Air Station to develop useful and productive service would provide mobility and accessibility benefits to those who live on base. Other plans provide additional recommendations for coordinating base service and local bus service, though these studies were completed before the base bus service was eliminated.[14] [15]

Intercity Express Service

Support for intercity service, especially headed south to Wilmington, exists within the Jacksonville community. In addition, state policies encourage regionalization efforts such as these.[16] The need for service between Jacksonville and Wilmington not only is associated with commuter trips but also to support non-work trips such as medical trips and connections to the Wilmington airport. Jacksonville Transit also has identified New Bern and Morehead City as potential connections. The market of riders who expressed most interest in this type of service included those who had access to a vehicle but would consider these types of services to meet specific transportation needs. As services diversify and expand, this is an important market for Jacksonville Transit to capture. Developing a multimodal center would facilitate transfers between transit service types and other transportation options while also providing a comfortable and safe waiting area.

Facility Recommendations

Ongoing Priorities

- Amenities
- ADA Compliance

One-Time Priorities

- Multimodal Center
- Park-and-Rides
- Satellite Transfer Facilities
- Maintenance Facility Expansion
- Bus Yard with Dispatch Office

Ongoing Priorities

[14] Ibid.
[15] MCB Camp Lejeune/MCAS New River Transportation Demand Management (TDM) Plan, http://nceastmgtf.com/modules/evolvecms/upload/LejeuneNewRiverTDM_06-17-11%281%29.pdf, June 2011.
[16] Jacksonville Transit System Development Plan, http://www.jumpo-nc.org/plans-documents, September 2011.

Amenities

The quality of bus stop or station amenities plays an important role in attracting and keeping customers both in the short- and long-term. Reliable and useful transit service is most often the top priority for riders, but the public "face" of the agency – drivers, bus stops, vehicles, etc. – dramatically affects the user experience and is the priority after operating characteristics. Ideally, amenities should not be placed arbitrarily, but rather systematically through a scoring system based on ridership and other characteristics developed in the service design guidelines. Often amenities have low up-front costs, but maintenance can require significant time and effort. Partnerships with business and other transit-friendly groups to do periodic volunteer maintenance is a frequently used method for upkeep.

ADA Compliance

With the enactment of the ADA in 1990, much of the existing transit infrastructure and facilities in the U.S. fell out of compliance with federal law. Many agencies are still in the process of bringing these structures in line with the requirements. A program should be set up to evaluate and retrofit or reconstruct existing facilities that are not in compliance in the Jacksonville area. This program can also provide guidance on any new facilities or infrastructure proposed.[17]

One-Time Priorities

Multimodal Center

A multimodal center has the potential to significantly improve transit operations and visibility in Jacksonville, while also connecting bike, pedestrian, intercity services, and alternative transportation modes. This center is also in line with local, state, and federal transportation and land use policies, and North Carolina identified the project as a top ten priority in 2012.[18]

The local financial burden associated with the facility is minimal in proportion to the total project cost. Ninety percent of the development/construction expenses are eligible for federal and state grants. The city already owns the land, which offsets the required 10 percent local match for capital projects. Finding and securing the local match is often the most difficult aspect of funding these projects, so with all or a part of the local match already accounted for, the city will have less of a challenge securing funding. Operating costs of the facility are also eligible for state and federal funding; however, these costs may also be offset by revenues generated from tenants within the facility – potentially including OUTS, Greyhound, Amtrak and private business.

Park-and-Rides

Discussed briefly in the operational recommendations above, park-and-rides can play an important role in developing a more robust commuter service. Congestion at the military base gates is of particular concern in Jacksonville, and park-and-rides could be a viable option for reducing traffic. However, there has to be some preferential treatment of buses for this service to work, and the location of the park-and-ride cannot be too close to the final destination. Otherwise, riders will not find the service useful or perceive it as a forced transfer, which often drives away potential riders. Many of the existing routes or

[17] Jacksonville Transit System Development Plan, http://www.jumpo-nc.org/plans-documents, September 2011.
[18] Jacksonville Urban Area Multimodal Center Feasibility Study, http://www.jumpo-nc.org/plans-documents, June 2012.

routes under development already serve locations that can act as a shared-use park-and-ride (e.g. mall or grocery parking lots). In addition, if commuter service to neighboring communities is developed, park-and-ride lots are often necessary to attract riders.

Satellite Transfer Facilities

As the system grows, expands routes, and creates transfer opportunities, there is an increased need for comfortable waiting areas and transfer facilities. Improvements to these facilities can be tiered based on ridership and the number of routes serving the stop. Many transfer facilities are simply an enhanced bus stop with additional amenities and improved passenger information. Satellite transfer facilities are especially useful and important at jurisdictional interfaces if services exist on both sides.

Maintenance Facility Expansion (relocation)

As Jacksonville Transit and OUTS grow, the two bays for bus maintenance will be inadequate. The current space does allow for growth. In addition, the space cannot accommodate any larger vehicles than what the agencies operate now. An expansion and/or relocation of the maintenance facility will be needed in the future depending on how fast the system grows.

Bus Yard with Dispatch Office

Similar to the maintenance facility, the bus yard and dispatch offices will be inadequate as the system grows. Current improvements to the yard are only an interim solution, and the dispatch offices are small and inconvenient, which make operations inefficient. Again, depending on how fast the system grows, an expansion of the bus yard and dispatch offices could be a mid- to long-term priority.

Additional Capital Investments

Ongoing Priorities

- Fleet Expansion
- Bus Replacement Cycle

One-Time Priorities

- Technology Upgrades - passenger communication and convenience
  - Online Trip Planners
  - Real-Time Passenger Information Systems
  - Smart Phone and Text Messaging Alerts
  - Interactive Voice Response
- Electronic Fare System
- Cisco Call Center

Ongoing Priorities

Fleet Expansion and Bus Replacement Cycle

For many transit agencies, vehicles are a significant portion of capital costs, but delaying replacement often leads to increased costs in maintenance and upkeep. In addition, as Jacksonville Transit and OUTS grow, their vehicle fleets will also need to grow and be upgraded to meet expectations of enhanced transit service. Depending on demand, larger vehicles may also be necessary. Thus, vehicle costs are revolving and continuous and cannot be ignored. A significant portion of vehicle costs can be covered by federal and/or state funding, but local matches are almost always necessary.

One-Time Priorities

Technology Upgrades

An essential part of attracting riders to Jacksonville Transit, including both transit dependent and choice riders, will be to expand the ways that people learn about existing transit services, interact with the agency, and plan and make their trips. Although marketing and outreach strategies as described above will always be important for transit systems, most systems are finding it is increasingly important to make information about transit services available in real-time and in as many formats as possible. Technology upgrades may be costly up-front but can save agencies money in the long run. Research has shown, for example, that real-time information can in some cases replace part of the need for greater route frequency. When a passenger has knowledge of when the bus is coming, planning is easier and more convenient.

Jacksonville Transit and OUTS have been in the process of implementing a series of ITS projects that have increased opportunities to provide more and different types of information. Given these new technological capabilities, potential technology upgrades include:

- *Online Trip Planners* give specific instructions to users for how to travel between two locations by public transportation. This is a straight-forward tool that can be implemented with fairly low costs. For example, in the short-term, it can be a useful system for people on the military installations to learn about the Express Services.
- *Real-Time Passenger Information Systems*, or "next bus" systems, provide passengers with real-time or live information about the location of their bus. These systems can be accessed at a stop with signage, on computers or smart phones, or by calling into a central telephone number. Real-time information systems will benefit all riders, but will be especially useful for people using on-demand services and passengers traveling to/from the military installations.
- *Smart Phone and Text Messaging Alerts*, while less important than on-line trip planners and real-time passenger information systems, can let people know when there are service delays. These types of system rely on people registering for the service and when/if systems get delayed, the travelers can be alerted.
- *Interactive Voice Response* allows customers to interact with an agency's call system via a telephone keypad or by speech recognition, helping to answer some of the more repetitive or straightforward questions received by an agency without tying up a human customer service representative. While it is vital to have a live person available for more complicated questions

and scheduling, interactive voice response will help the call center handle larger volumes of calls more quickly and efficiently.[19]

Electronic Fare System

Jacksonville Transit is planning to upgrade its current fare collection system (secure cash boxes) to electronic fareboxes. The fareboxes will allow passengers to purchase multi-trip or multi-day transit passes on the vehicle and receive change cards for cash fares.

Cisco Call Center

The integrated call center has been a vitally important step for Jacksonville Transit and OUTS coordination. It has helped the systems grow more efficient, effective, and closer together. However, with planned growth for both Jacksonville Transit and OUTS, the call center's capabilities will need to be expanded in the future with additional physical space.

Partnerships

Developing good working partnerships within a community, discussed throughout the operational recommendations, is the most effective way of not only marketing transit service, but also leveraging additional resources. Potential partnerships in Jacksonville include:

- City of Jacksonville and Onslow County
    - City of Jacksonville and OUTS – Legacy issues have prevented Jacksonville Transit and OUTS from becoming fully merged, but various plans have discussed this as a future recommendation.[20] [21] Close coordination among the two systems should continue so that they continue to naturally grow together.
- Onslow County Human Services
- MCB Camp Lejeune and MCAS New River
- Coastal Carolina Community College
- Onslow Memorial Hospital
- Walmart
- Onslow County Public Schools
- Jacksonville Mall
- Greyhound

[19] Jacksonville Transit System Development Plan, http://www.jumpo-nc.org/plans-documents, September 2011.
[20] New River Regional Transit Master Plan, http://www.jumpo-nc.org/plans-documents, October 2009.
[21] Jacksonville Transit System Development Plan, http://www.jumpo-nc.org/plans-documents, September 2011.

Aviation Recommendations

The aviation recommendations include roadway improvements that will enhance the roads near the Albert J. Ellis Airport as well as facility improvements were identified in the 2016 albert J. Ellis Airport (OAJ) Layout Plan Update in July 2018. These projects are summarized below.

Relevant Roadway Recommendations

The following roadway recommendations are of particular interest to aviation operations in the Jacksonville area. These improvements are described in more detail in Chapter 5.

- NC 111 (Catherine Lake Road) from US 258 to Airport Road – Widen to 3 lanes
- NC 111 (Catherine Lake Road) extension from US 258 to Gum Branch Road – Construct new roadway
- US 258 (Richlands Highway) from Pony Farm Road to NC 53 (Burgaw Highway) – Construct superstreet
- US 258 (Richlands Highway) from NC 111 to Pony Farm Road – Construct median and other improvements
- NC 111 (Catherine Lake Road) at Fowler Manning Road – Intersection improvements

Facility Projects

The Strategic Transportation Investments (STI) Law establishes a statewide prioritization process that funds improvements to the every transportation mode. The process has identified four projects for Albert J. Ellis Airport:

- Extend runway 23 and taxiway A (AV-5806)
- Acquire land for runway extension and roadway relocation (AV-5806)
- Design and construct runway 23 holding apron (AV-5733)
- Acquire land for roadway relocation, rpz and runway extension (AV5804)

NCDOT approved the 10-year State Transportation Improvement Program (STIP) in September 2019. The document schedules projects identified for full or partial funding between 2020 and 2029. Funding has been programmed in the STIP for these for a total of $15.4M through discretionary funding provided from federal Crisi Grant, STI, and/or other airport funds.

Master Plan Recommendations

The Albert J. Ellis Airport Master Plan was completed in July 2009 with the intent to provide Onslow County with a blueprint that ensures airport facility improvements respond to forecasted demand for aviation services. The airport completed the construction of a 67,000-square-foot terminal that replaced the current 35,000-square-foot terminal. The $40 million two-story facility has three gates and capacity to serve up to four aircrafts. The airport also constructed an air traffic control tower, and the corporate and general aviation terminal. In general, the *JUMPO 2045 MTP* recommendations continued work on executing the master plan with necessary adjustments to the plan occurring under the discretion of airport management.

Introduction

Communities with successful transportation networks balance multimodal accommodations for different types of trips-- recreational and utilitarian. To take a closer look at multimodal elements that would enhance the region's overall livability, *JUMPO 2045 MTP* used a transportation planning process that took a closer look at the movement of people regardless of chosen mode.

The Active Transportation focus of the *JUMPO 2045 MTP* embodies how local decisions can enhance the overall mobility and safety for cyclists and pedestrians. The recommended plan incorporates information from previous plans, discussions with stakeholders, and feedback from the community. These sources indicate demand for bicycle and pedestrian facilities for users of all levels and types in the Jacksonville area is growing. Underlying concepts of modal integration, livability, and connectivity are consistent themes in the Active Transportation strategies that follow. The plan for cyclists and pedestrians coordinates closely with other elements, notably through an emphasis on incidental projects tied to roadway recommendations presented in Chapter 5.

The E's of Bicycle and Pedestrian Planning

Successful bicycle and pedestrian planning requires consideration of five interrelated components: Engineering, Education, Encouragement, Enforcement, and Evaluation/Planning.

Engineering Refers to on-road and off-road facilities that must be planned and designed. To create a successful, well-integrated pathway network, design and route choices must be established and properly implemented.

Education Refers to the resources available for all users of the network, including cyclists and motorists. Cyclists and motorists, new and experienced, need to know how to ride safely in different networks (from off- road multi-use paths to congested arterials) as well as how to share multimodal facilities with other pedestrians, cyclists, or motorists.

Encouragement Refers to various ways to promote bicycling and walking. Cyclists and pedestrians need access to programs and a cycling or walking culture that comes by focusing planning efforts on specific facilities suitable for cyclists or pedestrians. This can be as simple as providing a means for desirable, attractive destinations that people want to visit.

Enforcement Refers to intentional actions that protect the safety of all users. It includes the cycling and pedestrian communities. Targeted enforcement can encourage cyclists and motorists to more safely use multimodal facilities.

Evaluation/Planning Refers to the periodic review of existing and planned facilities. The friendliest communities for cyclists and pedestrians have a system in place to assess existing programs and outline steps for future expansion. The facilities recommended as part of the *JUMPO 2045 MTP* should be supplemented with coordinated programs and policies that instruct and encourage cyclists and pedestrians in the full and proper use of the non-motorized transportation network.

Types of Users

To integrate the bicycle and pedestrian network into the overarching vision for the transportation system, the types of users and facilities must be understood. Types of users can be described in terms of trip purpose and skill level. Different reasons for traveling by bike or foot, combined with the varying levels of skill, require a flexible and responsive approach to bicycle and pedestrian planning.

Trip Purpose

Utilitarian

- Non-discretionary travel where the user is traveling to a specific destination such as work, school, grocery store, or home.
- Those without access to or ability to drive motor vehicles
- Often includes the elderly, children, and persons with disabilities
- Varying skill level

Recreational

- Discretionary travel where the user is using alternative modes (i.e. biking, walking) to travel just for fun
- Those who prefer a healthy, active lifestyle regardless of access to personal vehicles
- Typically includes persons of all ages and abilities
- Varying skill level

Skill Level

Both types of trip purposes require a complete network of bicycle and pedestrian facilities and programs that educate and encourage current and future users. Bicyclists can be further grouped by skill level.

Advanced Cyclists

- Typically the most experienced on the road
- Can safely ride on typical arterials that have higher traffic volumes and speeds
- Most prefer shared roadways in lieu of striped bike lanes and paths
- Represent about 20% of adult cyclists but account for nearly 80% of annual bicycle miles traveled

Basic Adult Cyclists

- Less experience on the road
- Less secure in their ability to ride in traffic without special accommodations
- Casual or new adult and teenage riders
- Typically prefer multi-use paths or bike lanes that reduce their exposure to fast-moving and heavy traffic
- Represent approximately 80% of adult cyclists

Child Cyclists

- Little to no experience on the road
- Limited field of vision while riding
- Generally keep to neighborhood streets and greenways
- Likely will ride on sidewalks along busier streets

Types of Facilities

Careful attention must be given to each facility type, particularly how each type and its users fit into the overall system-wide multimodal transportation network.

Striped Bike Lane

- Exclusive-use area adjacent to the outer most travel lane
- Typical width: 4′ to 5′ (preferred)

Target User
- Basic and Intermediate

Estimated Cost
- $2,400 per mile (striping only)

Wide Outside Lane

- Extra width in outermost travel lane
- Best on roadways with speed limits of 35 mph or higher and moderate to high daily traffic volumes
- Typical width: 14′ outside lane preferred

Target User
- Intermediate and Advanced

Shared Lane Markings (Sharrows)

- Pavement markings on lanes to indicate shared space for bicyclists and motorists
- Should be used on roads where bicycle lanes are desirable but impossible due to pre-existing constraints
- Typical spacing: 100-250 feet along corridor

Target User
- Intermediate and Advanced

Estimated Cost

$15,000 per mile ($260 each)

Sidewalk

- Dedicated space within right-of-way for pedestrians
- Should include a landscaped buffer from roadway
- Typical width: 5′ preferred (ADA Compliant)

Target User
- Pedestrians

Estimated Cost
- $180,000 per mile

Paved Shoulder

- Additional pavement adjacent to travel lane
- Extends service life of road and provides greater safety and comfort for bicyclists
- Typical width: 4′ (no minimum width required)

Target User
- Advanced

Estimated Cost

$600,000 per mile (assumes 4′)

Multiuse Path

- Separated from traffic and located in open space (greenway) or adjacent to road with more setback and width than sidewalks (sidepath)
- Typical width: 10-14′ preferred

Target User
- All Cyclists; Pedestrians

Estimated Cost
- $270,000 per mile

Recommendations

Bicycling and walking are available to people of all ages and socioeconomic backgrounds. In urban areas such as downtown Jacksonville, these modes are more efficient and convenient options. Throughout the study area, recreational bicycling is gaining in popularity as expert and novice cyclists take to the scenic rural roads. Regardless of the trip purpose, bicycling and walking provide a high level of independence, flexibility, and freedom of choice relative to where you want to go and when you want to get there.

Connections to Destinations

Establishing additional connections to the existing and future connections to the rail trail and filling gaps in the sidewalk network within the city limits are key considerations. These improvements will improve access to key destination points and tie into existing and proposed bus stops. The recommendations should make biking and walking to activity centers safer and more attractive. The recommended facilities will provide additional connections to a variety of destinations:

- Schools (in Jacksonville and on base)
- Commercial nodes, particularly along Western Boulevard, Marine Boulevard, and downtown Jacksonville
- Onslow Memorial Hospital and other medical facilities
- Coastal Carolina Community College
- Jacksonville Mall
- Parks and recreation centers
- Public facilities (e.g. libraries and museums)
- Activity nodes at MCB Camp Lejeune and MCAS New River

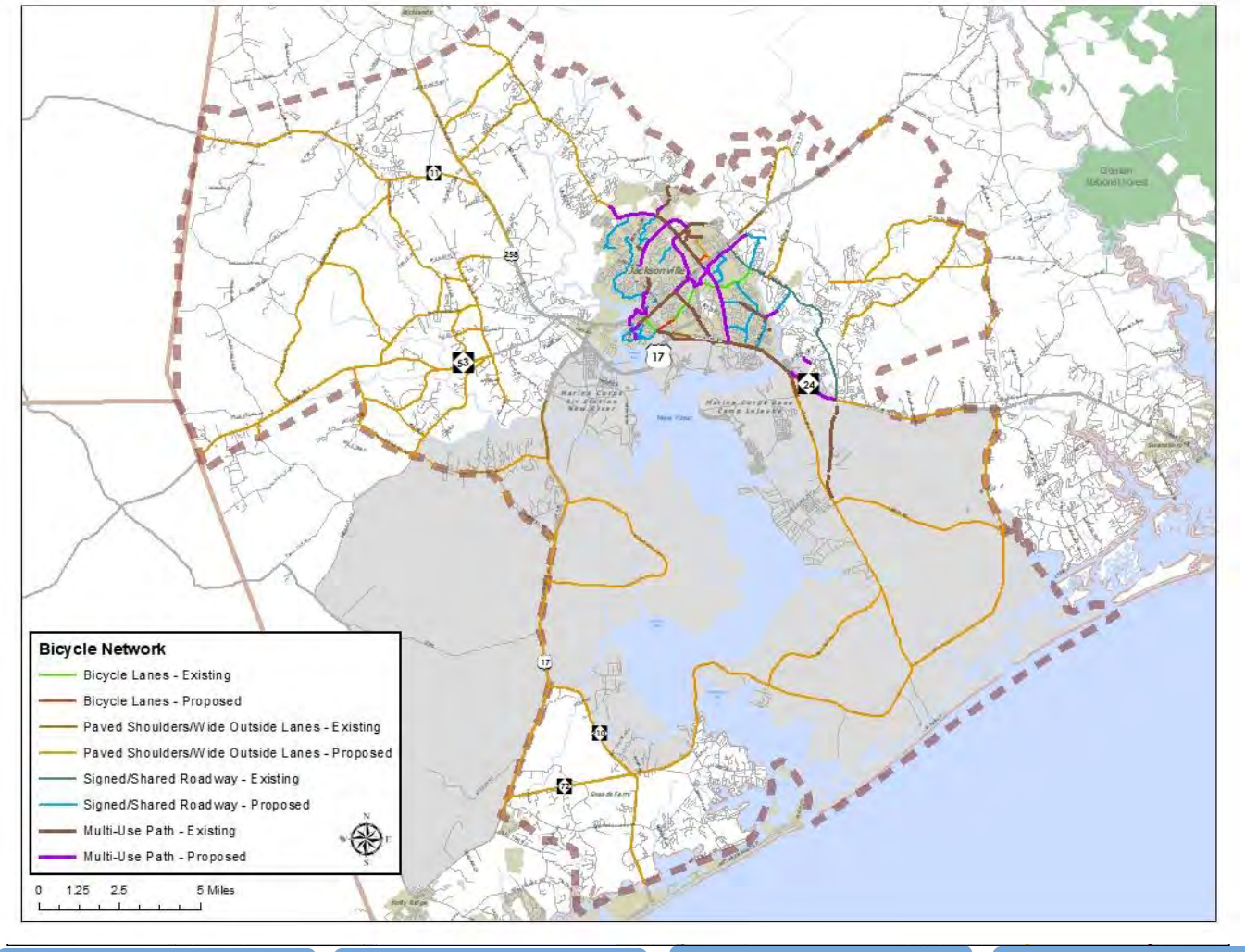
As roads become more congested, it is important to identify better ways to move people from place to place. Because roads cannot be expanded infinitely, bikeways, sidewalks, and transit service are important critical ways to provide transportation choices. A complete network of bicycle and pedestrian facilities, as well as, programs that educate and encourage current and future users is necessary for bicycling and walking to reach its potential as a transportation alternative in the Jacksonville area.

Upon completion, the bicycle and pedestrian network in the JUMPO study area will add approximately 84.2 miles of sidewalks, 17.1 miles of multiuse paths, and 42.3 miles of on-street bicycle facilities (bicycle lanes and signed/shared roadways). Nearly 397.2 miles of paved shoulders (minimum 4 feet wide) are recommended, mostly in rural areas. The majority of the bicycle and pedestrian network would be constructed as incidental enhancements associated with larger improvements to the roadways.

Bicycle Network

The recommended bicycle network for the *JUMPO 2045 MTP* includes a coordinated group of on- and off-street facilities. Connectivity was an important consideration as recommendations were developed. The planning process also emphasized vetting previous plans (e.g. bicycle and pedestrian plans, corridor studies, and small area plans) with the updated roadway recommendations. This emphasis was necessary given the limited funds available for standalone bicycle and pedestrian projects. The facility recommendations shown in the maps on the pages that follow are coordinated with the roadway recommendations provided in Chapter 5.

Recommended Bicycle Facilities



Multi-Use Path	Bicycle Lane	Paved Shoulder/WOL	Signed/Shared Roadways
19.3 miles (existing)	5.5 miles (existing)	11.2 miles (existing)	11.6 miles (existing)
17.1 miles (proposed)	2.4 miles (proposed)	397.2 miles (proposed)	39.9 miles (proposed)

Pedestrian Network

Walking is a key element to a healthy community's transportation system. Every trip begins and ends as a walking trip; yet walking often remains a lower priority mode during the planning process. When a proper pedestrian environment exists, walking offers a practical transportation choice with benefits for individuals and their communities. Features that contribute to making communities more walkable include a healthy mix of land uses, appropriately sized sidewalks, buffers between the edge of the pavement and the sidewalk, and trees to shade walking routes. Slowing traffic, narrowing streets to reduce pedestrian crossing distance, and incorporating pedestrian infrastructure (e.g. signage, crosswalks, and adequate pedestrian phasing at signals) into future roadway design plans also enhance walkability. The availability of pedestrian facilities and amenities plays an important role in encouraging the use of alternative modes of travel to the automobile. The success of transit greatly depends on the functionality of pedestrian facilities and amenities.

Some pedestrian recommendations are shown as part of the access management corridors and complete street concepts presented in the Future Multimodal System chapter. Improvements of these types should be considered at locations facing similar issues throughout the region. To address overall pedestrian needs for the region, several prevailing themes emerged.

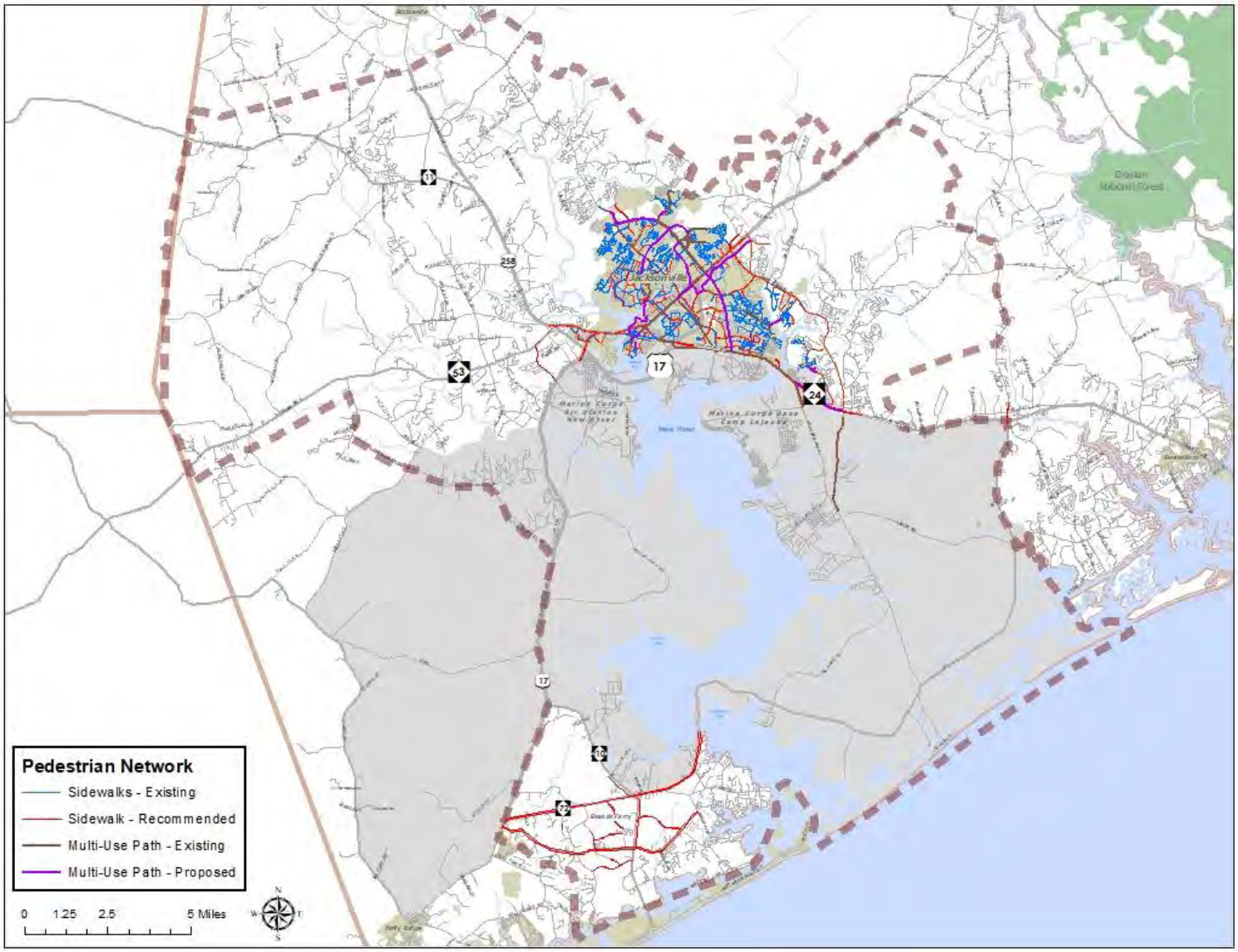
1. Close gaps in the pedestrian network to promote greater use of the existing network.
2. Enhance pedestrian access to activity centers from residential or other activity centers.
3. Perform regular maintenance of existing and future pedestrian facilities to maximize the effectiveness of the infrastructure.

In total, approximately 84.2 miles of new sidewalks are recommended. The recommended network assumes pedestrians will be served by paved shoulders in unincorporated rural areas where construction and maintenance funds for sidewalks are unavailable.

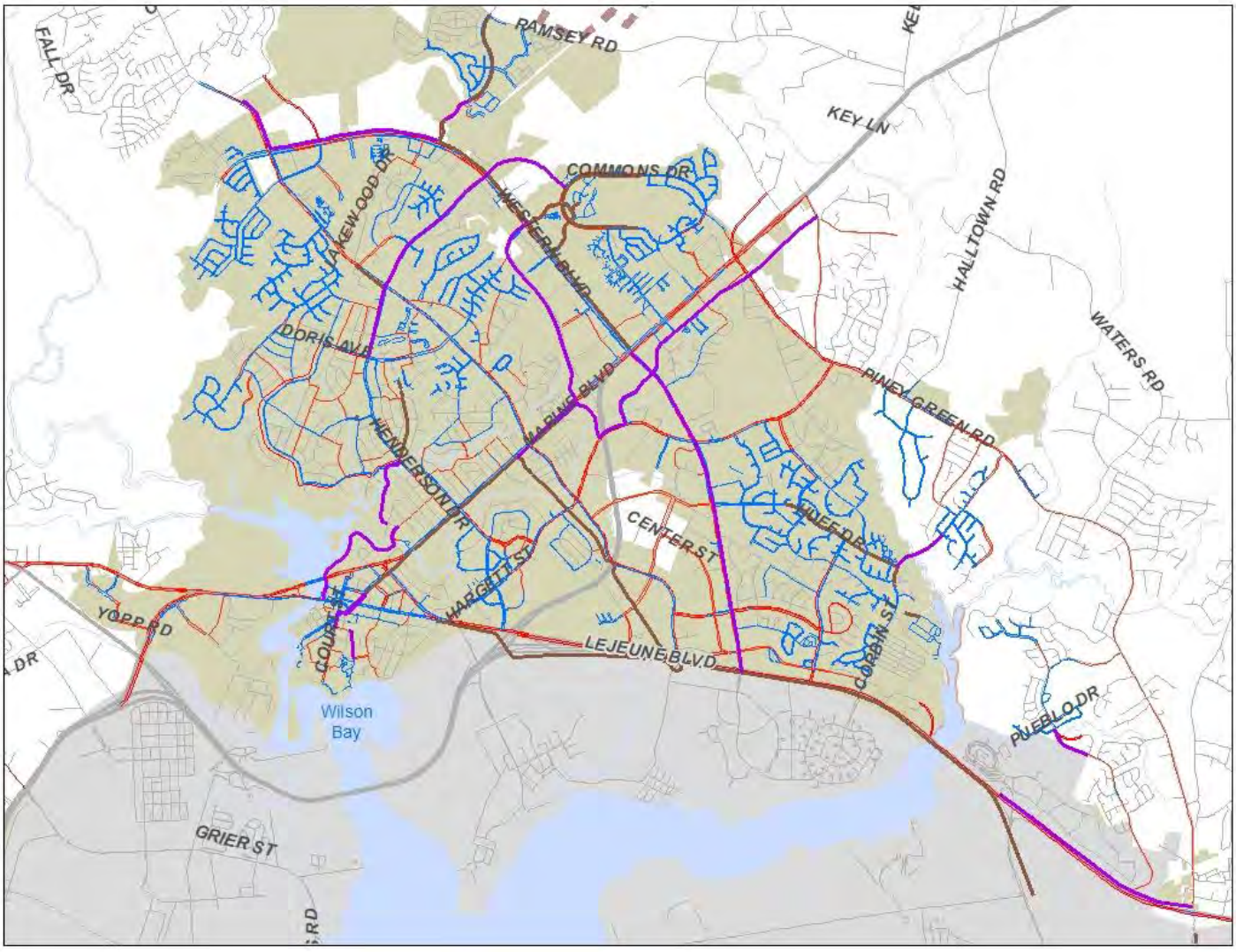
East Coast Greenway

The East Coast Greenway is a long-distance, continuous, traffic-free route that aims to connect existing and planned shared-use paths from Maine to Florida. The East Coast Greenway, planned to lie largely within the public right-of-way, is still in development and aims to follow existing roadways where greenways have not yet been developed. Currently, the main East Coast Greenway route in North Carolina connects the Raleigh-Durham area with Fayetteville before running along the Cape Fear River to Wilmington and points south. An alternative Historic Coastal route connects the North Carolina coast, linking Greenville and Jacksonville before connecting to the main route near Wilmington. To promote better connections between state bike routes and the East Coast Greenway, NCDOT plans to re-route NC Bike Route 3 (shown in Chapter 2) to closely follow the East Coast greenway into downtown Jacksonville while providing additional wayfinding between the two trails at locations where they cross.

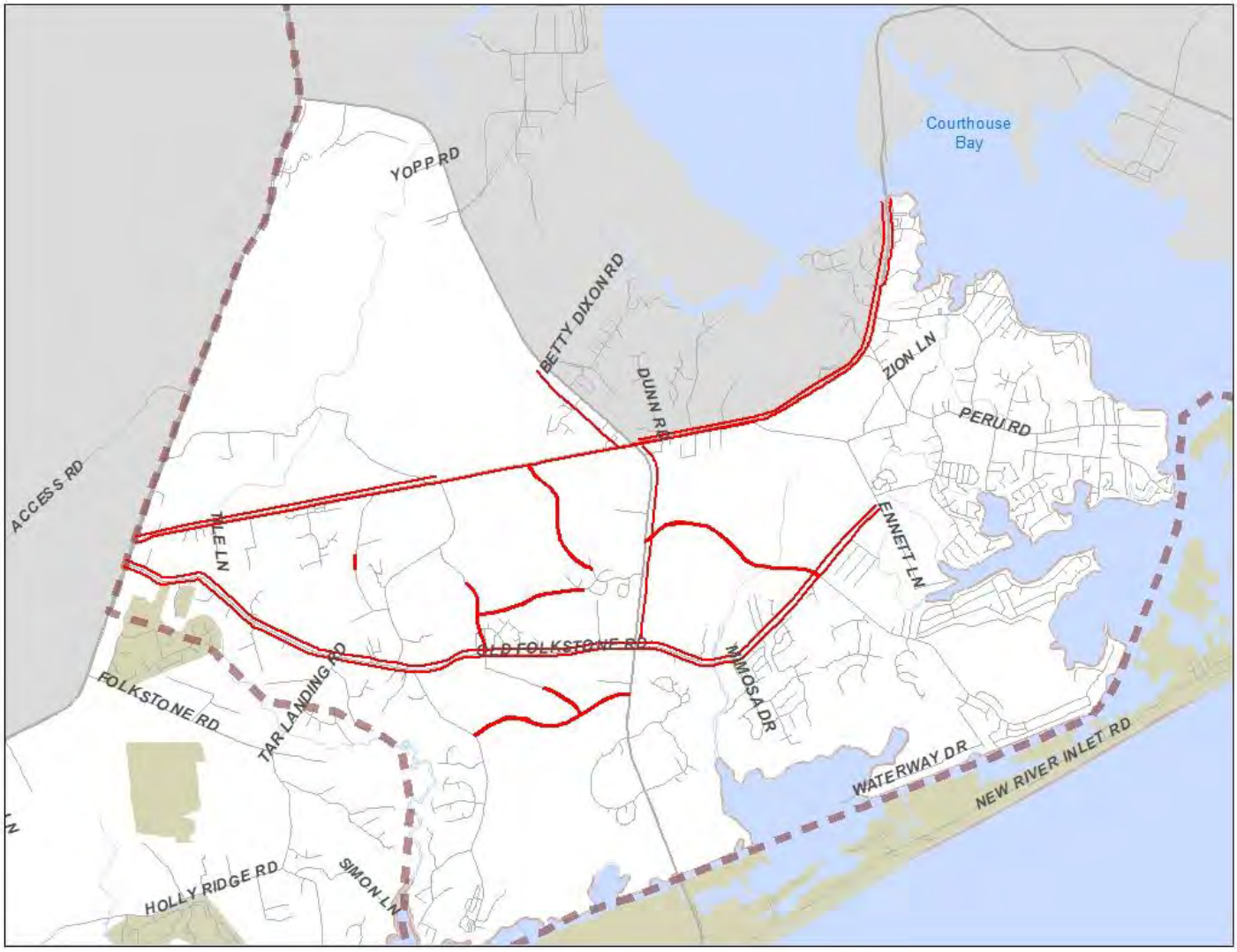
Recommended Pedestrian Facilities; JUMPO Planning Boundary



Recommended Pedestrian Facilities; City of Jacksonville



Recommended Pedestrian Facilities; Sneads Ferry



Introduction

The Future System chapter builds upon the analysis and findings of the Public Transportation and Active Transportation chapters to advance the "complete streets" concept that enables all users (pedestrians, bicyclists, motorists, and transit riders) of all ages and abilities to safely move along and across a street. Roadways with lower travel speeds and greater access points (e.g. local streets and collectors) provide the greatest opportunities for developing complete streets. However, all functional classifications warrant consideration of multimodal users even if only for motorists and regional transit (such as on expressways and freeways). NCDOT has reaffirmed this approach through the development of Complete Streets Planning and Design Guidelines in 2012, and more recently in May 2014 through the development of expanded highway cross sections.

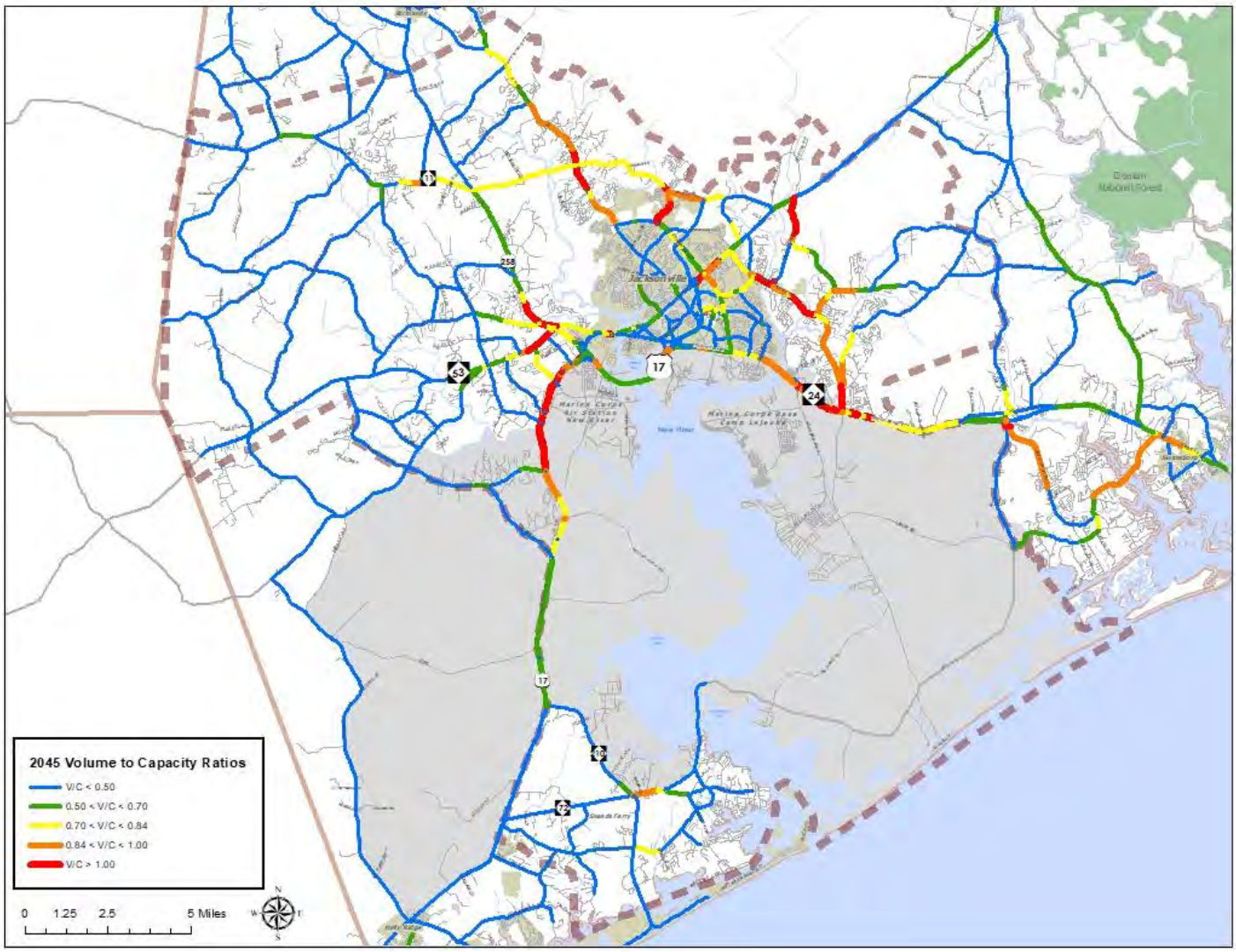
Recommendations for the future multimodal system consider roadways at a corridor level and provide improvements for all travel modes incorporating the complete streets concept along the corridor in a way that is compatible with surrounding land use. Projects improving freight movement as well as the safety and security of the network are discussed separately in the chapter. A methodology for organizing the projects into opportunity bands is discussed, directly leading to the development of the financially constrained plan described in Chapter 6.

This chapter includes five sections:

- Community Growth
- Corridor Characteristics
- Future Multimodal System
- Safety and Security
- Freight Movement

Community Growth

Chapter 2 (Existing System) describes the current conditions and needs of the region's transportation network. It also outlines pressures the transportation network may be facing in the future. Population growth in the Jacksonville area is outpacing that of the state, which is one of many indicators that the area will continue to be attractive for potential residents and employers. Projected population and employment growth has been documented within the regional travel demand model using data from 2016 as the base year. Using this information, the travel demand model was run for the 2045 horizon year of this plan. This run was performed with the existing and full build out of the proposed transportation network. The map that results highlights the deficiencies that the transportation network will likely be facing from a congestion perspective.



The region's growth through 2045 has a dramatic effect on the roadway network. Without improvements to the network, corridors such as NC 24, US 17, Gum Branch Road, and Piney Green Road will experience significant congestion. The long range transportation plan's roadway recommendations were developed in part to address these regional congestion needs.

Transportation and Land Use

The transportation system influences development patterns by dictating the fastest, most convenient, and safest routes of travel. Available travel modes also influence settlement patterns. People who desire daily services accessible by foot, bike, or public transit choose to live in different locations than people who prefer to drive to these destinations. As transportation corridors are improved and expanded, new development typically follows. This push-pull relationship typically results in concentrated growth along major thoroughfares as residents seek to take advantage of the most convenient transportation facilities. When blended with supportive public policies and investment strategies, the transportation network can serve as an effective tool for guiding regional development.

The relationship between urban form and transportation can be expressed in terms of density, diversity, design, and (travel) distance. The evaluation of these elements as part of the *JUMPO 2045 MTP* contributed to the development of the region's multimodal transportation recommendations.

Density

A diversity of housing and travel options is beneficial to the community. Residential density and non-residential intensity can look and feel quite different based on building form and neighborhood's design. As in most communities, location often is the main factor in determining density and intensity in the Jacksonville region. Moving away from downtown Jacksonville, land has typically developed at a lower density and intensity. Managing the location and magnitude of new density or intensity within the built environment helps planners determine infrastructure needs and implementation costs, and it shifts impacts away from environmentally-sensitive areas.

Diversity

Mixed-use developments combine a variety of public amenities with compatible land uses, in turn creating places where people live, play, work, and shop. Mixed-use developments offer advantages over single-use developments by fostering a more efficient, livable transportation system characterized by shorter trip lengths, more choice among modes, convenient access, and more internal trips. The City of Jacksonville and Onslow County continue to work collaboratively to identify preferred locations for these types of development.

Design

Urban design shapes the blocks, neighborhoods, and districts that organize the built environment and give our cities identity. Elements of urban design provide a three-dimensional physical form to locally adopted comprehensive plans or zoning ordinances. Urban design connects people, places, and buildings. Some elements of urban design (e.g. street pattern, streetscape design, block size, building scale and massing, parking, and landscaping) directly influence travel mode choice and travel behavior. These design elements provide context to the transportation system and directly relate to the complete streets described in the following section. The type, placement, and scale of design elements generally vary with the context of the surrounding environment, and programming improvements need to be tailored to rural, suburban, and urban environments.

Distance

The distance between the origin and destination is a primary factor (along with travel mode choice) for influencing travel behavior. The physical distance between complementary land uses in rural or suburban settings tends to promote automobile travel, particularly since safe, convenient facilities usually are not available for pedestrians and bicyclists. Denser mixed-use areas decrease the travel distance between complementary land uses and support transit, bicycle, and walking as viable alternatives to the automobile.

Corridor Characteristics

As the region's economy expands and people continue to relocate to Jacksonville, the frequency and length of trips on existing roads will increase. This increase in traffic will make current delays worse and create new delays where none exists today. It helps to understand existing transportation characteristics as a way to anticipate future areas of concern. Once these areas are identified, establishing a set of transportation recommendations requires consideration of how area roads are classified and an understanding of how to balance the needs of multiple users along a given corridor.

Functional Classification

An effective roadway network must manage two competing demands placed on the system:

1. Providing access to specific destinations
2. Offering mobility between centers

These two demands are inherently adversarial (i.e. increasing access typically limits mobility along the same corridor). Therefore, it is helpful to instill diversity into the network by providing easy access on some roads and protecting the mobility on others. Balancing access and mobility creates roadways that respond to the unique context and user groups along specific corridors. For example, local streets primarily provide access within residential neighborhoods or commercial districts. These streets are not intended to carry large volumes of through traffic. In contrast, arterials primarily provide mobility by limiting intersections and driveways. Arterials are designed to carry more traffic than generated within its corridor but often at the expense of bicycle and pedestrian amenities. As detailed in Chapter 2, roadways in the Jacksonville area are categorized into one of five functional classifications. It should be noted that the lines between these classifications are not exact, and functional classification often is defined differently in different jurisdictions.

Complete Streets

"Complete streets" are community-oriented streets that safely and conveniently accommodate all modes of travel. Common goals for complete streets include economic vitality, business retention and expansion, and public safety. Creating a complete street requires community support and leadership as well as coordination among planners, urban designers, transportation engineers, utility experts, and land development specialists. Successful complete streets programs include the following principles:

- Achieve community objectives.
- Blend street design with the character of the area served.
- Capitalize on a public investment by working diligently with property owners, developers, economic development experts, and others to spur private investment in the area.
- Design in balance so traffic demands do not overshadow the need to walk, bicycle, and ride transit safely, efficiently, and comfortably.
- Empower citizens to create their own sense of ownership in the success of the street and its numerous characters.

The *JUMPO 2045 MTP* communicates the desired balance between functional classification and complete streets through a Street Design Priority Matrix.

Street Design Priority Matrix

The planning process for the *JUMPO 2045 MTP* clarified the connection between roadway types and features by developing a customized planning tool that represents the complete streets philosophy. The Street Design Priority Matrix assigns priorities to various transportation features for different types of street classifications with consideration for its character area (e.g. urban, suburban, or rural). It was built upon the context zones offered in the NCDOT Complete Streets guidelines. It provided a useful reference tool during the creation of the recommendations presented later in this chapter. Following adoption of the MTP, staff can use the matrix during modifications to the plan or when interacting with the public, businesses, and development communities.

	Freeway	*Principal Arterial*			*Minor Arterial*			*Collector*			*Local*		
		Urban	Suburban	Rural	Urban	Suburban	Rural	Urban	Suburban	Rural	Urban	Suburban	Rural
Shared Vehicle Zone													
Multiple travel lanes	H	H	H	H	M	M	M	M	M	L	L	L	L
Width of travel lanes	H	H	H	M	H	H	M	H	H	M	L	L	L
Vehicle capacity at intersections	M	H	H	H	H	H	M	H	M	M	L	L	L
Design for large vehicles	H	H	M	M	H	M	M	M	L	L	L	L	L
Multimodal intersection design	H	H	H	M	H	H	M	H	H	M	M	M	L
Bicycle Zone													
Bicycle lanes	L	M	M	L	H	M	L	H	H	L	L	L	L
Wide lanes / paved shoulders	L	H	H	M	M	M	M	M	M	M	L	L	L
Sharrows	L	L	L	L	M	M	L	H	M	L	L	L	L
Parking/Transit Zone													
On-street parking	L	L	M	L	M	M	L	H	H	L	H	L	L
Bus pullouts	L	H	M	L	M	M	L	M	L	L	L	L	L
Green Zone													
Landscaping	H	H	H	M	H	H	L	H	H	L	H	M	L
Lighting	H	H	H	L	H	H	L	H	H	L	H	M	L
Street furniture	L	M	M	L	M	M	L	M	M	L	L	L	L
Bus shelters	L	H	H	L	H	H	L	H	H	L	L	L	L
Sidewalk Zone													
Wide sidewalks	L	H	M	L	H	M	L	M	M	L	L	L	L
Standard sidewalks	L	M	H	L	H	H	L	H	H	L	H	M	L
Multiuse Paths	L	L	M	M	M	M	L	L	M	L	L	L	L
Median Zone													
Narrow medians	L	H	M	L	H	M	L	H	M	L	L	L	L
Wide medians	H	L	M	H	L	M	H	L	M	L	L	L	L
Other Elements													
Access management	H	H	H	M	H	H	M	M	M	M	L	L	L

H **High Priority** M **Medium Priority** L **Low Priority**

The zones above are based on the July 2012 NCDOT Complete Streets Planning and Design Guidelines.

Future Multimodal System

The development of the recommended future multimodal system involved input from JUMPO, the City of Jacksonville and Onslow County, Jacksonville Transit and OUTS, state and federal agencies, and members of the public. The 2020-2029 Transportation Improvement Program was used as the basis for the short-term projects identified for funding. Recommendations in Chapter 3 were combined to identify multimodal amenities on these facilities.

Corridors and Intersections, FY 2020-2029 TIP (Short-Term)				
TIP ID	Route	Project Limits	Description	Bike/Ped[1]
B-5944	SR 1509 (Queens Creek Rd)	Over Queen's Creek	Replace bridge	B
SF-4903F	NC 53 (Burgaw Hwy)	At Holly Shelter Rd	Realignment and lane construction	n/a
U-4007E	US 17 (Marine Blvd)	to SR 1326 (Drummer Kellum Rd)	Construct additional lanes	n/a
U-4906	SR 1308 (Gum Branch Rd)	W of SR 1313 (Mills Field Rd) to E of SR1324 (Ramsey Rd)	Widening add paved shoulders	B
U-5508	NC 24 (Lejeune Blvd)	At NC 53 (Western Blvd)	Upgrade intersection and drainage	n/a
U-5716	NC 24	At US 258/NC 53	Construct interchange	n/a
U-5728	US 17B (Marine Blvd)	At SR 1308 (Gum Branch Rd/Bell Fork Rd)	Intersection improvement	n/a
U-5735	US 17 (Wilmington Hwy)	At MCAS New River/Old Maplehurst Rd	Construct interchange	n/a
U-5736	NC 53 (Western Blvd)	US 17 (Marine Blvd) to NC 24 (Lejeune Blvd)	Access management	P
U-5739	US 258 (Richlands Hwy)	SR 1212 (Pony Farm Rd) to NC 53 (Burgaw Hwy)	Construct superstreet	None
U-5741	NC 24 (Lejeune Blvd)	NC 24B (Johnson Blvd) to Urban Area Boundary	Access management	B + P
U-5787	SR 2715 (Trade St)	NC 53 (Western Blvd) to McDaniel St	Construct roadway on new alignment	P
U-5789	NC 53 (Western Blvd)	At Jacksonville Pkwy	Intersection improvement	n/a
U-5791	SR 2714 (Jacksonville Pkwy)	NC 53 (Western Blvd) to US 17 (New Bern Hwy)	Construct new roadway	B
U-5793A	SR 1308 (Gum Branch Rd)	SR 1322 (Summersill Rd) to SR 1324 (Ramsey R)	Superstreet	n/a
U-5783B	SR 1308 (Gum Branch Rd)	SR 1324 (Ramsey Rd) to SR 1390 (Country Club Rd)	Superstreet	n/a
U-5878	Commerce Dr Extension	Commerce Dr to SR 1406 (Piney Green Rd)	Construct roadway on new alignment	P
U-5903	SR 1336 (Henderson Dr)	SR 1308 (Gum Branch Rd) to NC 53 (Western Blvd)	Superstreet	B + P
U-5949	NC 210	US 17 to south of Old Foldstone Rd	Widen to multi-lanes	n/a
U-5950	US 17 (Marine Blvd)	Henderson Dr/Onslow Dr	Improve intersection	P
U-5951	US 17	US 17 @ US 17B	Construct partial interchange	B + P
U-6065	US 17	NC 172 to Old Folkstone	Superstreet	n/a
U-6081	NC 53 (Western Blvd)	SR 1308 (Gum Branch Rd to US 17 (Marine Blvd)	Superstreet	B + P
U-6082	SR 1308 (Bell Fork Rd)	at SR 1403 (Country Club Rd)	Intersection improvement	P
U-6107	McDaniel Dr	at US17/Workshop Lane	Improve Intersection	P
U-6148	US 258/NC24	SR 1329 (Rhodestown Fire Dept Rd)	Improve Intersection	P
U-6200	SR 1308 (Gum Branch Rd)	Williamsburg Parkway to Indian Dr	Construct superstreet	P
W-5602	NC 172	NC 210 to Sneads Ferry Gate	Widen to 3 lanes	B + P

[1] *B indicates a bicycle improvement; P indicates a pedestrian improvement.*

The following section describes the corridor and intersection recommendations for the *JUMPO 2045 MTP*. These improvements include new location roadways, roadway widening, access management improvements, interchange and intersection improvements, and enhancements to the collector street network. Each recommendation was developed in concert with the recommendations shown in the Public Transportation and Active Transportation chapters. This coordinated approach is most evident in the number of incidental improvements to the bicycle and pedestrian network. Projects identified as short-term were carried forward and supplemented by those identified as deficient by the region's travel demand model or through the public input process. Future collector street locations and alignments will be determined by collaborating with the development community, City, County, and State.

Recommended Corridor Improvements

Corridor	Start	End	Total Lanes	Bicycle / Pedestrian[1]
Completed				
Funded US 17 Bypass	Country Club Road	Western Boulevard	4	B
Piney Green Road	NC 24 (Lejeune Blvd)	US 17	4	P
Carver Drive	Piney Green Road	Hunters Trail	2	B
New Location				
Hemlock Drive Ext	Piney Green Road	Waters Road	4	B,P
NC 111	US 258	Gum Branch Road	2	B
Old 30 Road/Waters Road	US 17	NC 24	4	B
Commerce Drive	Existing termini	Piney Green Road	2	B,P
Jacksonville Parkway	Western Boulevard	Ramsey Road	2	
Western Boulevard	Weatherford Drive	NW Corridor Boulevard	4	B,P
Blue Creek Road	Eastgate Drive	US 258 (Richlands Hwy)	2	
Henderson Drive Ext	Western Boulevard	Commons Drive N	2	B,P
Halltown Road	Hemlock Drive Ext	Old 30 Rd	2	B,P
Hunter's Trail	Brandymill Lane	Remington Drive	2	B,P
Trade Drive	Western Boulevard	McDaniel Drive	2	B,P
New Location (Collector)				
Hunters Trail	W Brandymill Drive	Remington Drive	2	B,P
East Drive	East Drive	NC 24	2	B,P
Center Street	Center Street	Lexie Lane	2	P
New Collector	Drummer Kellum Road	Piney Green Road	2	P
New Collector	Western Boulevard	Maynard Boulevard	2	P
New Collector	Hubert Boulevard	NC 24	2	B,P

[1] *B indicates a bicycle improvement; P indicates a pedestrian improvement.*

Recommended Corridor Improvements – Continued				
Corridor	Start	End	Total Lanes	Bicycle / Pedestrian[1]
New Location	NC 210	Old Folkstone Road	2	P
New Location	NC 172	Pebble Shore Drive	2	P
New Location	Hartsfield Road	Old Folkstone Road	2	P
New Location	New Location	Bald Cypress Lane	2	P
New Location	NC 210	Turkey Point Road	2	P
New Location	Scuba Drive	New Location	2	P
New Location	Virginia Lane	Whippoorwill Lane	2	P
Operational/Access Management				
NC 24	NC 24B	Study Area Boundary	4	B,P
Western Boulevard	US 17	NC 24	6	B,P
US 17B	Broadhurst Road	Bell Fork Road	6	B,P
US 17	Piney Green Road	Ramsey Road	4	B
NC 24B	US 17B	US 17	4	B,P
New Bridge Street	Court Street	Hargett Street	4	B,P
Gum Branch Road/Bell Fork Road	Western Boulevard	NC 24 (Lejeune Boulevard)	4	B,P
US 258	Pony Farm Road	NC 53 (Burgaw Highway)	4	B,P
US 258	Pony Farm Road	NC 111	4	B,P
Western Boulevard	US 17	Gum Branch Road	4	B,P
Gum Branch Road	Williamsburg Parkway	Indian Drive	4	B,P
US 17	High Hill Road	Douglas Road	4	
US 17	NC 172	Old Folkstone Road	4	
US 17B	NC 24	US 258	4	P
High Hill Road	US 17	Dawson Cabin Road	2	
NC 111	US 258	Airport Road	2	
US 17	Old Maplehurst Road	High Hill Road	4	
Widening				
Country Club Road	Bell Fork Road	Piney Green Road	4	B,P
Henderson Drive	Gum Branch Road	Western Boulevard	4	B,P
Old 30 Road	Water Road	NC 24	4	B,P
Old Maplehurst Road	US 17 (Wilmington Hwy)	NC 53 (Burgaw Hwy)	4	B,P
Ramsey Road	Gum Branch Road	Jacksonville Parkway	4	B,P
Gum Branch Road	Summersill School Rd	Study Area Boundary	4	B,P
NC 111	Fowler Manning Road	US 258	3	B
NC 210	US 17	Old Folkstone Road	4	B,P
NC 172	US 17	Bridge	4	B,P

[1] *B indicates a bicycle improvement; P indicates a pedestrian improvement.*

Recommended Corridor Improvements – Continued				
Corridor	Start	End	Total Lanes	Bicycle / Pedestrian[1]
Old Folkstone Road	US 17	Ennett Lane	3	B,P
Tar Landing Road	Old Folkstone Road	Study Area Boundary	3	B
Liberty Drive	Western Boulevard	Corbin Street	4	B,P
Pine Valley Road	NC 24 (Lejeune Boulevard)	Village Drive	4	B,P
Riggs Road	Gillcrest Lane	Blue Haven Drive	4	B
Hargett Street	Johnson Boulevard	Bell Fork Road	4	B,P
NC 53	Murrill Hill Road	US 258	4	B, P
NC 210	US 17	Old Folkstone Road	4	B,P
.Country Club Road	Western Boulevard	Piney Green Road	4	P
Gum Branch Road	Summersill School Road	Ramsey Road	4	P
Gum Branch Road	Ramsey Road	Country Club Boulevard	4	P
Western Boulevard	Marine Boulevard	Gum Branch Road	6	B,P
Ramsey Road	Gum Branch Road	Jacksonville Parkway	4	P
Ramsey Road	Jacksonville Parkway	US 17	4	
Ramsey Rd	Jacksonville Parkway	US 17	4	B,P
Intersection Improvement				
Bell Fork Road at Country Club Road	N/A	N/A	N/A	B,P
US 17 Marine Boulevard at McDaniel Drive	N/A	N/A	N/A	B,P
US 258 at Rhodestown Fire Department Road	N/A	N/A	N/A	
Interchange Improvement				
US 17 at US 17B	N/A	N/A	N/A	

[1] *B indicates a bicycle improvement; P indicates a pedestrian improvement.*

Intersections and Interchanges

Recommendations for the future system include improvements to critical intersections and interchanges. Some of these locations were identified as safety improvements and are detailed in the following section. Additional locations were identified through previous and ongoing planning efforts and an analysis of future congestion issues as indicated by the regional travel demand model. These locations are identified here, along with a brief description of the recommended improvement type:

Intersection Improvements

- US 17 Business at Gum Branch Road (SR 1308)/Bell Fork Road (SR 1308)*(2020-2029 TIP)*
- Western Boulevard (NC 53) at Gum Branch Road (SR1308) *(2020-2029 TIP)*
- Western Boulevard (NC 53) at Jacksonville Parkway *(2020-2029 TIP)*
- Western Boulevard (NC 53) at NC 24 *(2020-2029 TIP)*
- NC 53 at Holly Shelter Road (SR 1108) *(2020-2029 TIP)*
- McDaniel Drive at US 17 *(2020-2029 TIP)*
- Rhodestown Road (SR 1316) at US 258 *(2020-2029 TIP)*
- Gum Branch Road (SR1308) at Country Club Rd (SR 1403) *(2020-2029 TIP)*
- US 17 at Gum Branch Road (SR 1308) *(2020-2029 TIP)*
- US 17 at Western Boulevard (NC 53) *(2020-2029 TIP)*
- NC 172 at Sneads Ferry Road (SR 1515)
- NC 172 at NC 210
- NC 24 at NC 172
- NC 210 at Old Folkstone Road (SR 1518)
- US 17 at Onslow Drive (SR 1336) / Henderson Drive (SR 1336)
- US 17 at Old Folkstone Road (SR 1519)
- NC 111 at Fowler Manning Road (SR 1221)

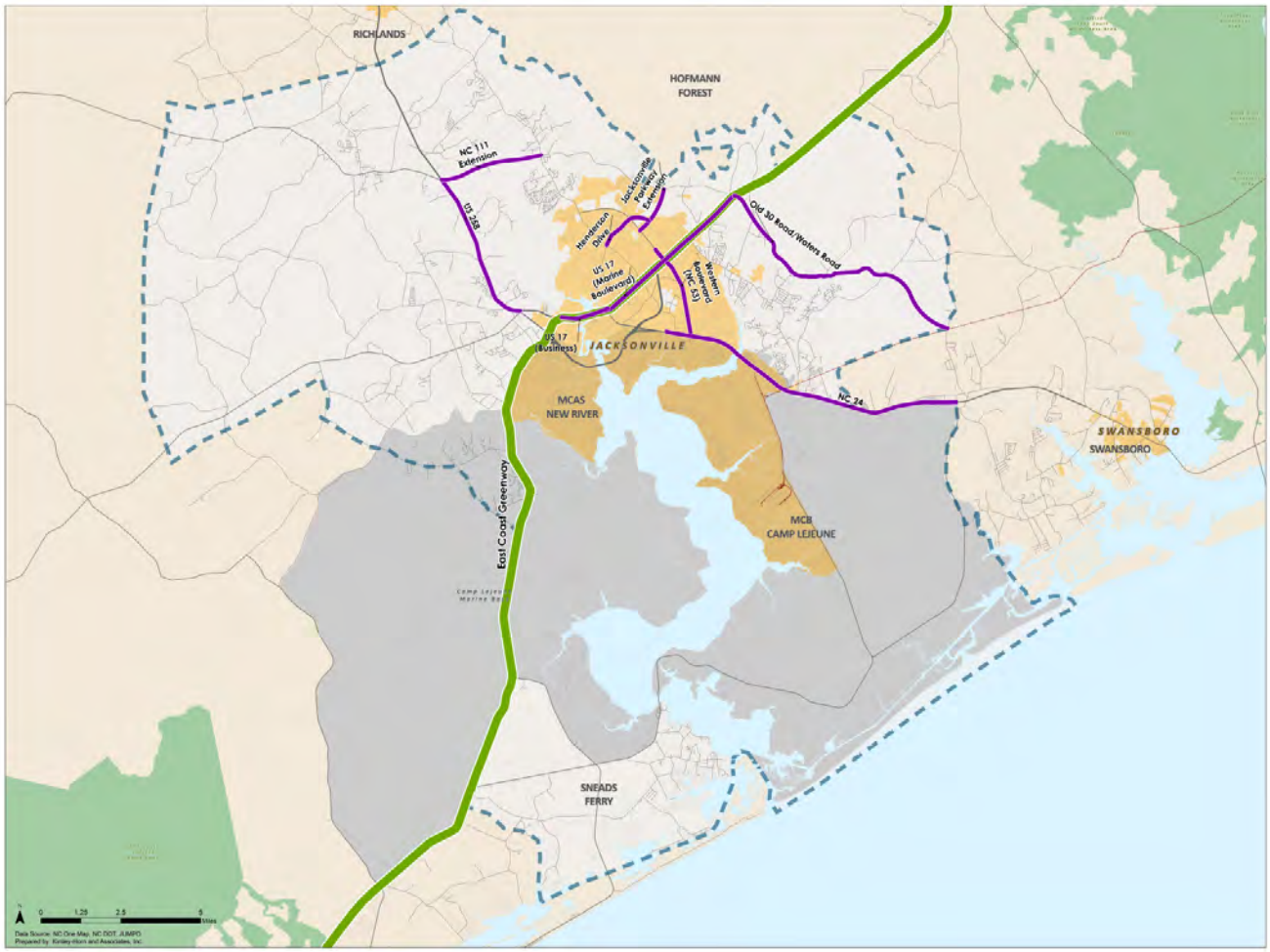
Interchange Recommendations

- NC 24 at US 258/NC 53 *(2020-2029 TIP)*
- US 17 at MCAS New River/Old Maplehurst Road (SR 1130) *(2020-2029 TIP)*
- US 17 at US17B *(2020-2029 TIP)*
- US 17 at NC 210

Corridor Profiles

Ten corridors were identified to illustrate the proposed multimodal recommendation in more detail. A corridor profile developed for each segment described existing issues and recommended solutions. The corridor profiles for the following segments are available under separate cover.

- East Coast Greenway
- Henderson Drive (SR 1336)
- Jacksonville Parkway Extension
- NC 111 Extension
- NC 24
- Old 30 Road/Waters Road
- US 17 (Business)
- US 17 (Marine Boulevard)
- US 258
- Western Boulevard (NC 53)



Safety and Security

The importance of safety and security is heightened in the Jacksonville region due to a variety of factors. First, the region's proximity to the coast makes it likely that natural events will lead to large scale evacuations. Second, the presence of MCB Camp Lejeune and MCAS New River means safety and security issues could include or influence risks to national security. And third, the region's extensive natural landscape centered on the New River requires dozens of bridges and culverts to be maintained. The elements of the region's transportation network typically intersect—and often conflict—at the region's critical corridors and nodes.

Planning Considerations

Guidelines that ensure safety remains a core component of transportation planning in the Jacksonville region include consideration for engineering, education and enforcement, and emergency services.

Engineering

The MTP provides a comprehensive, multimodal approach to improving safety through engineering. The roadway recommendations in particular should improve traffic flow while increasing safety for all users. General engineering strategies to maximize safety include:

- improving highway and road design guidelines;
- implementing corridor-based access management strategies;
- identifying appropriate intersection improvements to mitigate crashes;
- constructing a coordinated network of on-street bicycle facilities and off-street trails;
- designing streets to be pedestrian-friendly;
- recommending appropriately designed streets for truck freight; and
- maintaining adequate standards for railroad crossings and bridges.

Education and Enforcement

Education and enforcement activities include ways to monitor and maintain appropriate behaviors by users (motorists, bicyclists, pedestrians, and transit riders). These activities usually include law enforcement, task forces, and partnerships with organizations dedicated to improving safety. These activities include:

- **Governor's Highway Safety Program** – Booze It & Lose It; Click It or Ticket; BikeSafe North Carolina; No Need to Speed; and Nuestra Seguridad: The Hispanic Highway Safety Education Campaign
- North Carolina State Highway Patrol—Operation TACT; Operation Slow Down; Operation Drive to Live

Reaching children through education programs is an important way to support lifelong habits of safely using the transportation system. The Safe Routes to School program (now part of the Transportation Alternatives Program) is one example of educating children on the proper use of sidewalks, bicycle facilities, and roadways.

Emergency Services

When local officials speak about safety, they often mention the need for ambulances and fire trucks to respond quickly to incidents. For crashes, timely response is essential to reducing the severity of injuries

and minimizing disruptions to other travelers. The *JUMPO 2045 MTP* will improve emergency response times and encourage an interconnected network of streets that provides route choices and reduced congestion. Improvements to the signal system and Intelligent Transportation System (ITS) deployment will also improve safety.

Security and Transportation Planning

Emphasizing security during the transportation planning process helps identify and implement ways to improve security and mitigate imminent threats. JUMPO has the advantage of considering security at a regional level, which is a logical first step to ensuring protection at the local level. Implementation for many strategies often is the responsibility of local jurisdictions or require state and federal resources and oversight. In the Jacksonville area, key security considerations include evacuation routes, failure of sensitive facilities, protection and maintenance of bridges, and the safeguard of freight operations.

The *JUMPO 2045 MTP* is an important part of the region's approach to providing secure options for moving people and goods. Security considerations include ways to prevent, manage, or respond to threats to the region and its transportation system. In general, security measures typically fall into one of four categories:

- Prevention - mainly limits access to ensure the safety of the transportation system
- Protection - focuses on vulnerable components of the transportation system such as bridges and rail corridors and is closely coordinated with prevention elements
- Redundancy - creating alternative routes within the transportation network and allows for an interconnected street network which should also be extended to the bicycle and pedestrian network, transit system, and rail corridors where possible
- Recovery - refers to both the initial response during an emergency and the long-term activities that aid in the return to normal operations

Recommendations

Intersection Safety Improvements

Chapter 2 examined historic crash data and identified high crash locations. Contributing factors to high crash frequency often include intersection design, access considerations, and traffic congestion. Since this relationship exists between traffic congestion and crash frequency, recommended roadway corridor projects that reduce traffic congestion should be recognized as having secondary safety benefits. A more detailed look at the top 10 intersections ranked by severity was performed to confirm existing conditions and opportunities to improve safety at the intersections. The ranking is based on the Equivalent Property Damage Only (EPDO) rate. EPDO is a measure of severity that takes into account the number of crashes and the severity of injuries.

1. US 17 (North Marine Boulevard) at NC 53 (Western Boulevard) – Interim recommendations such as improving signal head layout and timings will improve visibility and predictability, thereby helping to address these crash issues. Future capacity improvements have been identified at this location through the Western Boulevard (NC 53) Corridor Study and improvements have been identified in the U-5736 project.
2. US 258/NC 24 (Richlands Highway) at Burgaw Highway – Interim improvements could include lighting, advance traffic signal warnings, and a review of signal timings and clearance intervals. This intersection will be upgraded to an interchange as part of the U-5716 project.
3. NC 53 (Western Boulevard) at Gum Branch Road (SR 1308) – This intersection is identified in NCDOT's 2015 safety program and includes dual lefts on southbound Gum Branch Road along with improved signal timings and clearance intervals. These improvements are currently under construction with an expected date in 2021.
4. NC 24 at Piney Green Road (SR 1406) – Piney Green Road was widened and this intersection was significantly improved in 2015. This intersection now serves as the main point of commercial access for the Marine Corps Base Camp Lejeune (MCBCL). At times, stacking occurs on NC 24 as vehicles wait to enter the MCBCL. Interim recommendations continue to be coordinated communication between the MCBCL and JUMPO to ensure that stacking does not occur along NC 24, as well as, working towards identifying solutions to eliminate this issue.
5. NC 53 (Western Boulevard) at Country Club Road (SR 1403) – Identified as part of the Western Boulevard (NC 53) Corridor Study, capacity, access management, and safety improvements are recommended at this intersection. These recommendations have been addressed in the planned improvement project known as Western Boulevard Access Management Project (U-5791).
6. NC 53 (Western Boulevard) at Gateway Drive – Crashes at this intersection are likely due to the heavy left turn movement from Jacksonville Parkway onto Western Boulevard. Improvements such as additional lanes for turning and through movements will increase the capacity of this intersection. Improvements similar to these have been identified in the FY 2020-2029 STIP as U-5791.
7. NC 24 (Lejeune Boulevard) at NC 53 (Western Boulevard) – Improvements such as enhanced drainage and turn lane additions are programmed for this intersection within the next five years. The NC 24 Corridor Study identifies additional long term capacity and safety improvements for the intersection.
8. NC 53 (Western Boulevard) at Marlin Drive – The intersection was recently constructed, meaning historic crash data may not be an accurate indicator of its performance. The City of Jacksonville is working to coordinate the signalization of this corridor. If issues still persist, a roadway safety audit along with signal improvements might be warranted.
9. US 17 at Old Maplehurst Road (SR 1130) – This intersection serves as the single point of access for New River Air Station. As such, past improvements included the addition of three dedicated left turn lanes from US 17 to Curtis Road (Base entrance). An interchange has been identified at this intersection to reduce the crash rate. This is a planned project in the FY 2020-2029 STIP.
10. NC 53 (Western Boulevard) at Trade Street (SR 2715) – Crashes at this intersection are likely due to congestion along Western Boulevard which serves as a main corridor road for the

MPO. Recent improvements include the installation of off-set left turn lanes along Western Boulevard. Construction was completed in 2019 and there is not enough data to determine yet how these improvements impacted the crash statistics.

Evacuation Route Improvements

As noted in Chapter 2, designated evacuation routes in the Jacksonville area include US 17, US 258, NC 24, NC 53, NC 111, NC 172, and NC 210. The future system described in this chapter includes safety and operational improvements to all or portions of each of these corridors that will enhance safety and security.

Emergency Response and Fire Protection

Emergency management in the study area falls under the purview of Jacksonville Fire and Emergency Services and Onslow County Department of Emergency Services. Jacksonville Fire and Emergency Services serve the city through a combination of prevention, readiness, and response to threats on the lives and property in the city. The Onslow County Department of Emergency Services houses a variety of facilities and services, including the E-911 Communications Center, Emergency Management Office, Emergency Medical Services, and the Fire Rescue Services. In addition to these emergency services, elements of safety and security prevention and response occur through other municipal and county departments, MCB Camp Lejeune (e.g. Provost Marshal Office and Fire and Emergency Services Department), Onslow County Sheriff's Office, Onslow County Chapter of the American Red Cross, health department, and private security providers. Jacksonville Transit and OUTS are also important partners in coordinating emergency response plans, particularly assisting with emergency evacuation. To that end, it is recommended that these agencies develop a security and emergency management plan that dovetails with existing City, County and MCB Camp Lejeune plans.

Systems Management

Transportation systems management (TSM) and intelligent transportation systems (ITS) are additional tools that alleviate traffic congestion and improve safety. Referred to as systems management, these features have been deployed across the country and locally in the Jacksonville area. In 2014, the City of Jacksonville and NCDOT deployed a computerized traffic signal system to improve the mobility and safety of the city's major corridors. The system includes a traffic operations center (TOC) for monitoring traffic conditions and managing incidents, closed circuit television (CCTV) camera surveillance for incident verification, dynamic message signs (DMS) for dissemination of traveler information, and system detectors to measure the system performance. The goals of the computerized traffic signal system include:

- Monitor current traffic conditions and incidents using CCTV video
- Collect real-time vehicle flow data
- Update coordination timing plans
- Monitor for signal system and communications equipment failure
- Coordinate incident management activities with first responders
- Communicate travel information with the public using DMS units
- Use an open architecture for linking to NCDOT and other regional facilities
- Use Ethernet technology to be flexible and accommodate the City's future growth
- Minimize maintenance costs

In order to maximize the utility of the computerized traffic signal system, improvements and expansion of the system will need to be considered to accommodate community growth. In addition, the City's Traffic Operation Center should establish a connection with the State Traffic Operations Center and the City/County Emergency Operation Center.

Freight

No other consideration of the *JUMPO 2045 MTP* is more closely tied to economic development than freight movement. Obstacles facing the freight community can slow population growth and economic development. Successful planning efforts for freight movement incorporate roadway recommendations that increase capacity along critical routes. As a part of the corridor and intersection improvements identified in this chapter, roadway network improvements should help facilitate freight movement. In addition to the future system recommendations, the following strategies should be considered.

General Recommendations

Develop a regional freight plan that identifies corridors and conflict points for freight activity.

A detailed freight plan should evolve through collaboration among policymakers, planners, and stakeholders and a more in depth review of operations data. The plan should establish freight needs and strategies for action.

Continue to implement ITS improvements that deliver on-time information to freight carriers and the public.

Properly designed and executed ITS solutions will provide real-time information to highway users, allowing them time to react as traffic conditions change.

Enhance safety for freight providers and the public by identifying and prioritizing locations for improvements.

Efforts to prioritize projects based on safety and security should continue to include input from the freight sector. Locations with high truck/automobile conflicts should be monitored to reduce injuries and loss of property. Rail grade crossings should be identified and prioritized for improvement or closure. The flow of freight traffic should be improved through monitoring and disseminating roadway conditions using ITS.

Provide for the secure movement of goods within and through the JUMPO area.

Communication with agencies and stakeholders is an essential element of a proactive approach to security issues. This process requires an effective working relationship between planning officials, law enforcement and emergency response personnel and freight providers. Regional freight security issues should be discussed as part of the freight plan development and at JUMPO committee meetings.

Other Considerations

Truck Freight

Primary freight movement in the JUMPO area is by truck. Whether it consists of deliveries to restaurants, big box stores, or through movements of freight headed to the ports, it is imperative that the roadways be accessible to freight trucks. The Jacksonville region has to address the challenge of connecting with major freight routes such as I-40 and I-95.

To do this, collaboration is essential between JUMPO and its neighboring MPOs and RPOs. The design of all roadways should be consistent with their intended function and be responsive to the environment through which they pass. Streets serving trucks are not an exception. Where possible, a context sensitive approach should be used to ensure basic design considerations respect corridors with a propensity for freight traffic. Considerations for lane width, turning radii, and horizontal and vertical transitions should be routine. Adequate space between the edge of the travel way and adjacent pedestrian facilities should be used in strategic corridors.

Coordination should continue with NCDOT on their M.V.P.S Corridor Plan (Military Mobility, Vacationers, Ports, Safe Storm Evacuation). This would provide connectivity from Fayetteville (I-95 to US 17) to Jacksonville with controlled access freeway built to interstate standards. This serves as critical military connectivity and mobility as this route is a designated Strahnet Route serving Fort Bragg, Camp Lejeune and Sunny Point Terminal.

Rail Freight

At this time, rail freight availability in the JUMPO area is limited to the Camp Lejeune Railroad. This facility provides connections between MCB Camp Lejeune and MCAS Cherry Point, as well as connections to the nearby Port of Morehead City. As the Port of Morehead City continues to grow, stakeholders such as the Department of Defense and Onslow County should maintain close coordination with Norfolk Southern to identify potential opportunities for rail freight expansion within the region.

Rail freight has the potential to make a significant impact on overall freight movements in the region. Commercial rail service could be provided to the region by using the USMC rail line as identified and studied in the Camp Lejeune Railroad Commercial Freight Feasibility Study (June 2016) which identified potential industrial and suitable properties for development. It is also important to consider that significant private investment in spurs and/or trans-load facilities is needed to fully realize the potential of this modal choice. Public-private partnerships should be explored to help facilitate future rail system growth.

Air Freight

Chapter 3 identifies a series of recommended improvements to Albert J. Ellis Airport, as well as, its supporting facilities. Improvements to the airport and adjacent roadways will benefit both passenger travel and air freight. JUMPO and its member jurisdictions should continue to closely collaborate with Albert J. Ellis Airport and the Onslow County Airport Commission to identify improvements to the transportation network that will help promote the growth of air freight. Potential expansion of FedEx and UPS services in the region should be monitored to better understand the resulting shift in freight movement on the region's roadway network.

Introduction

The financial plan, required by MAP-21 for long range transportation plans, shows proposed investments that are realistic in the context of reasonably anticipated future revenues over the life of the plan and for "opportunity bands." The horizon years set for the *JUMPO 2045 MTP* are 2035, 2040, and 2045. Meeting this test is referred to as "financial constraint." The mix of transportation recommendations proposed to meet metropolitan transportation needs over the next 25 years is consistent with revenue forecasts. The financial plan details both proposed investments toward these recommendations and revenue forecasts over the life of the plan.

Financial Plan Development

The proposed recommendations were developed in collaboration with the Jacksonville Urban Area MPO, Onslow County, and the North Carolina Department of Transportation (NCDOT). These projects include roadway, freight, bicycle, pedestrian, and transit facilities and services for the life of this plan. The financial plan also reflects existing and committed projects from the TIP along with the future projects recommended in this plan. These recommendations also reflect travel demand benefits and socioeconomic impacts identified in Chapters 2 and 5.

Revenue forecasts were developed after a review of previous state and local expenditures, current funding trends, and likely future funding levels. The revenue forecasts involved consultation with JUMPO and NCDOT. All dollar figures discussed in this section initially were analyzed in current year dollars (i.e. 2020) and then inflated to reflect projected year of expenditure or implementation. Based on current statewide standards and applicable local forecasts, an annual inflation rate of 4% was used to forecast costs and revenues.

This chapter provides an overview of revenue assumptions, probable cost estimates, and financial strategies along with the 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 re-evaluated in subsequent plan updates.

Financial Planning Scenarios

Roadway

The table below reflects the proposed costs and revenues for highway projects with current funding sources. The costs and revenues are broken up between highway capital projects and maintenance. An estimated $1.1 billion and $693 million will be available for highway capital and maintenance projects within the JUMPO region, respectively, in the funded plan.

Opportunity Band	Revenues			Costs		
	Capital	Maintenance	Total	Capital	Maintenance	Total
2020-2025	Capital	Maintenance	Total	Capital	Maintenance	Total
2026-2030	$78,306,407	$81,251,299	$159,557,705	$78,306,407	$81,251,299	$159,557,705
2031-2035	$328,948,929	$83,951,116	$412,900,045	$328,948,929	$83,951,116	$412,900,045
2036-2040	$248,717,025	$142,947,108	391,664,133	$248,717,025	$142,947,108	$391,664,133
2041-2045	$236,319,600	$173,917,014	$410,236,614	$236,319,600	$173,917,014	$410,236,614
Total	$1,188,427,534	$693,663,175	$1,882,090,708	$1,188,427,534	$693,663,175	$1,882,090,708

Roadway Maintenance Funding

Maintenance funding in the JUMPO region primarily is used for roadway maintenance, though pedestrian and bicycle facilities also are maintained with these funds. This funding source is not expected to increase. The maintenance costs generated annually are assumed to equal the revenue available.

Capital Roadway Funding

Projections of funding for capital roadway projects are based on current funding levels shown in the FY 2020-2029 Statewide Transportation Improvement Program (STIP). Revenue forecasts were adjusted to reflect a 4% inflation rate per guidance from NCDOT. The available capital highway funding for JUMPO totals approximately $1 billion over the life of the MTP.

Opportunity Band Methodology

After establishing the funding levels, the next step was to consider what recommendations can be included as part of the funded plan. While it would be ideal to implement all of the recommended projects, only a portion can be accommodated in the financially constrained plan. As a result, higher rated projects were considered for implementation prior to lower rated projects. Three Opportunity Bands were established to categorize and prioritize the capital roadway projects included in the MTP. The Opportunity Bands are described as follows:

1. The Short-Term Opportunity Band consists of all of the projects in the Jacksonville MPO FY 2020-2029 Metropolitan Transportation Program. This category represents all of the projects that are anticipated to be funded by the long-range transportation plan's 2025 interim year.
2. The Long-Term Opportunity Band consists of all of the projects that are not in the TIP, but are expected to receive funding by the MTP's 2045 horizon year, including unfunded portions of projects currently included in the TIP. Phased projects or projects adjacent to those in the Short-Term Opportunity Band received greater priority. Per MAP-21 guidelines, the projects in the Long-Term Opportunity Band are further categorized into three five-year cost bands. Projected funding for projects in the Long-Term Opportunity Band are based on the annual average of funding shown within the Short-Term Opportunity Band and adjusted for inflation.

3. The Unfunded Opportunity Band is comprised of all projects that cannot be funded within the Short-Term or Long-Term Opportunity Bands. This includes projects recommended as part of the MTP to address future roadway deficiencies shown in the Regional Travel Demand Model.

The roadway projects in the JUMPO FY 2020-2029 TIP, included in the Short-Term Opportunity Band, are shown in the table below.

2020-2029 TIP Roadway Projects (Short-Term Opportunity Band)

TIP ID	Route	Project Limits	Description	Cost
U-4906	SR 1308 (Gum Branch Rd)	East city limits of Richlands to SR 1322 (Summersill School Rd)	Widen to 3 lanes	$13,978,000
U-5508	NC 24 (Lejeune Blvd)	at NC 53 (Western Blvd)	Upgrade intersection and drainage	$3,012,000
U-5787	SR 2715 (Trade St)	NC 53 (Western Blvd) to McDaniel St	Construct roadway on new alignment	$4,157,000
U-4007E	US 17 (Marine Blvd)	at NC 53 (Western Blvd) and at SR 1406 (Piney Green Rd)	Upgrade intersections	$210,529,000
U-5789	NC 53 (Western Blvd)	at Jacksonville Pkwy	Intersection improvement	$6,083,000
U-5735	US 17 (Wilmington Hwy)	at MCAS New River/Old Maplehurst Rd	Construct interchange	$27,720,000
U-5728	US 17B (Marine Blvd)	at SR 1308 (Gum Branch Rd/Bell Fork Rd)	Intersection improvement	$7,201,000
U-5736	NC 53 (Western Blvd)	US 17 (Marine Blvd) to NC 24 (Lejeune Blvd)	Access management	$30,560,000
U-5741	NC 24 (Lejeune Blvd)	NC 24B (Johnson Blvd) to Urban Area Boundary	Access management	$63,253,000
U-5716	NC 24	at US 258/NC 53	Construct interchange	$49,150,000
U-5739	US 258 (Richlands Hwy)	SR 1212 (Pony Farm Rd) to NC 53 (Burgaw Hwy)	Construct superstreet	$14,614,000
U-5791	SR 2714 (Jacksonville Pkwy)	NC 53 (Western Blvd) to US 17 (New Bern Hwy)	Construct new roadway, widen existing to multi lanes	$49,395,000
U-5793	SR 1308 (Gum Branch Rd)	SR 1322 (Summersill Rd) to UAB	Widen existing	$44,260,000
U-6107	McDaniel Drive/Workshop Lane		Upgrade Intersection	$1,410,000
U-6065	NC 172 (Sneads Ferry Rd)	at SR 151B (Old Forkstone Road)	Superstreet	$4,750,000
U-5951	US 17 (Marine Blvd)	at US 17	Interchange	$18,350,000
U-6081	SR 1308 (Gum Branch Rd)	to US 17 (Marine Blvd)	Superstreet	$4,400,000
U-5949	NC 210	US 17 to south of SR 1518 (Old Folkstone Rd)	Widen to multilanes	$47,948,000
U-5903	SR 1336 (Henderson Dr)	SR 1308 (Gum Branch Rd) to NC 53 (Western Blvd)	Superstreet	$14,200,000
U-6082	SR 1308 (Gum Branch Rd)	SR 1403 (Country Club Rd/Hargett)	Intersection improvement	$3,900,000
U-6200	SR 1308 (Gum Branch Rd)	Williamsburg Parkway to Indian Drive	Superstreet	$3,843,000
U-6148	US 258/NC 24	SR 1329 (Rhodestown Fire Department Rd)	Intersection improvement	$1,526,000
U-5950	US 17B	SR 1336 (Henderson Dr)	Upgrade Intersection	$1,000,000
U-5878	Commerce Rd Extension	Commerce Rd to SR 1406 (Piney Green Rd)	New roadway	$5,475,000

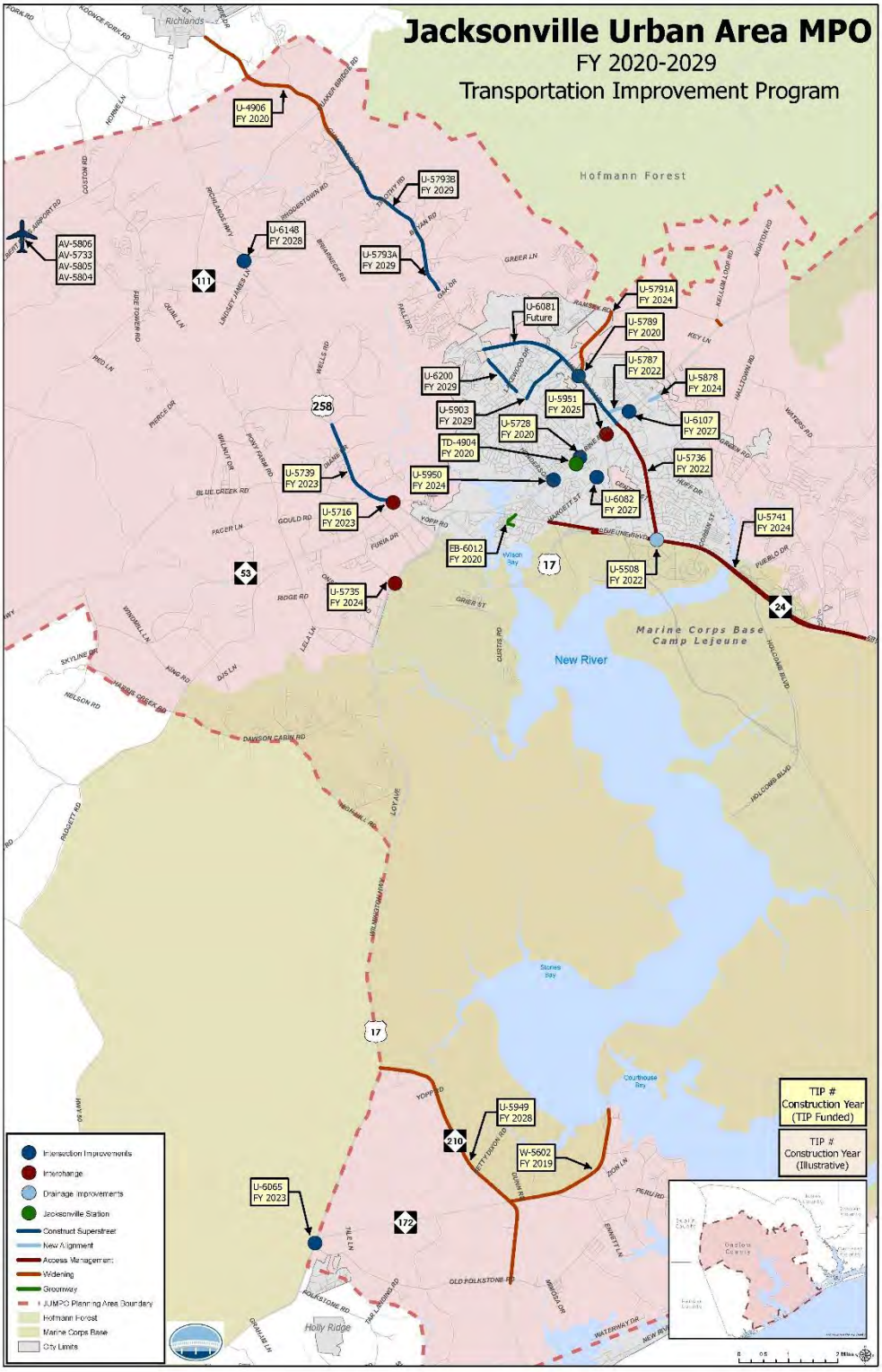
Financially Constrained Projects (Long-Term Plan) and Unfunded Opportunity Bands

Cost Band	ID	Route	Limits	Description	Cost
2030-2035	U-5903	Henderson Dr	Gum Branch Rd to Western Blvd	Widen divided facility with bicycle and pedestrian accommodations	$17,200,000
		Gum Branch Rd	Ramsey Rd to Country Club BLvd	Updated to 4-lane superstreet	$33,953,000
	H17067	Country Club Rd	Western Blvd to Piney Green Rd	Upgrade to superstreet	$14,186,000
	U-5913	Henderson Dr Extension	Western Blvd to Jacksonville Pkwy Extension	Construct roadway on new location	$24,900,000
	H140427	Old Maplehurst Rd	US 17 to NC 53	Widen to 3 lanes	$8,800,000
	H140357	NC 111	Airport Rd to Haw Branch Rd	Realign roadway	$32,900,000
	H140368	Commerce Dr Extension	Country Club Rd to Huff Dr	Construct roadway on new location	$5,600,000
	W-5602	NC 210	NC210 to New River Bridge	Widen to 3 lanes	$3,210,000
	H111207	Ramsey Rd	Gum Branch Rd to Jacksonville Pkwy Extension	Upgrade to superstreet	$109,500,000
	S1	NC 172	At Sneads Ferry Road	Improve intersection	$1,500,000
2036-2040	H090479	Country Club Rd	Bell Fork Rd to Piney Green Rd	Widen to multilane with bicycle and pedestrian accommodations	$50,300,000
		Old Folkstone Rd	US 17 to Ennett Lane	Widen to 4 lanes	$37,000,000
	H090885	Pine Valley Rd	NC 24 to Liberty Dr	Widen to 4-lanes	$6,000,000
	H090912	New Bridge St	Hargett St to Court St	Streetscape	$11,500,000
	H090913	Gum Branch/Bell Fork	Western Blvd to NC 24	Access management/construct median	$60,800,000
	H111203	Hemlock Drive Extension	Piney Green Rd to Waters St	New roadway	$42,700,000
	H140111	Tar Landing Rd	Old Folkstone Rd to Holly Ridge Rd	Widen lanes and add wide paved shoulders	$2,700,000
	H140414	NC 111	At Fowler Manning Road	Intersection Improvements	$1,500,000
	H141024	Liberty Rd	Western Blvd to Corbin St	Widen to 4-lane median divided	$16,600,000
	S-2	NC 172	At NC 210	Intersection Improvements	$1,800,000
	S-3	NC 24	At NC 172	Intersection Improvements	$1,800,000
	S-4	NC 210	At Old Folkstone Road	Intersection Improvements	$1,800,000
	S-6	US 17	At Onslow/Henderson Drives	Intersection Improvements	$1,800,000

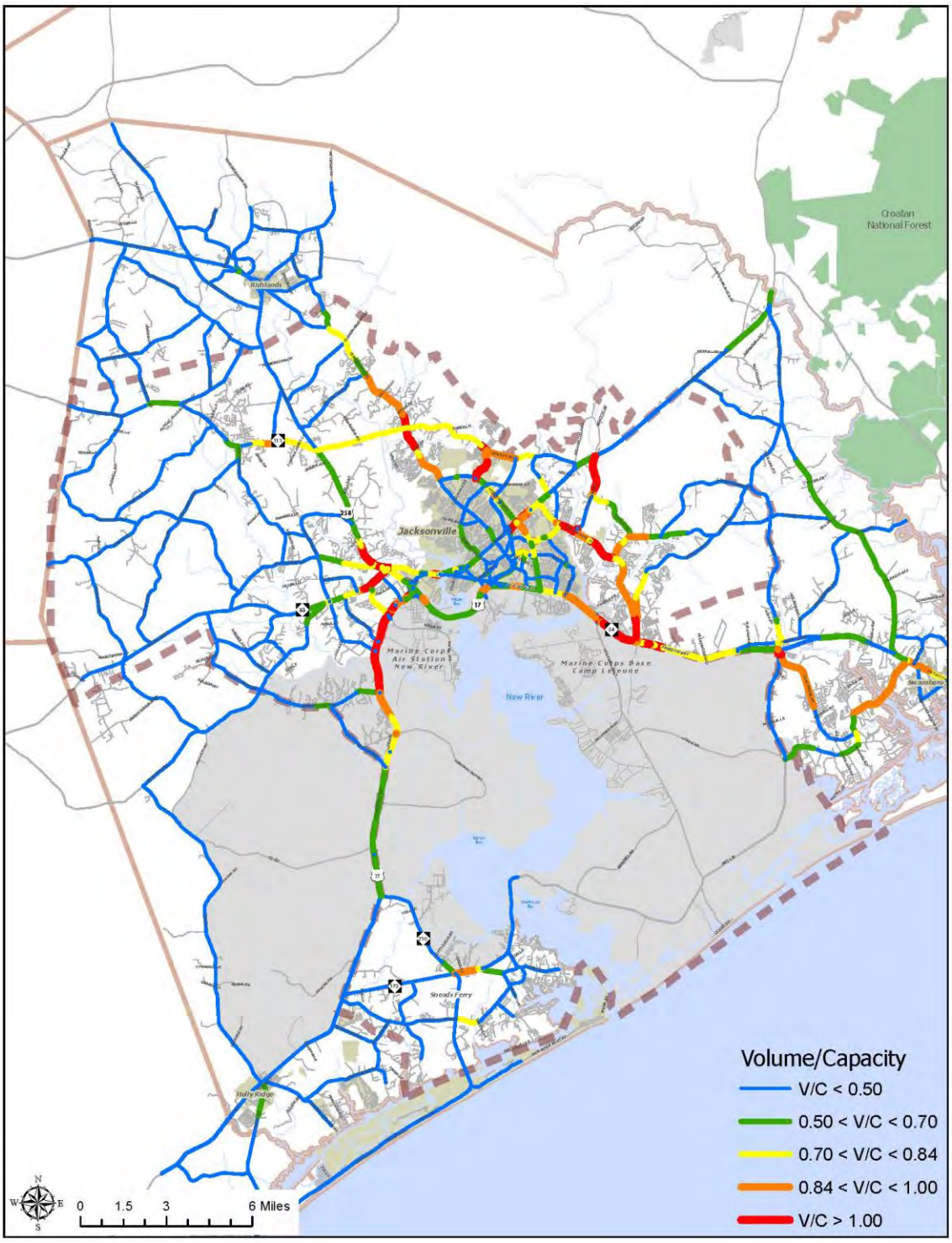
Financially Constrained Projects (Long-Term Plan) and Unfunded Opportunity Bands Cont.

Cost Band	ID	Route	Limits	Description	Cost
2041-2045	H090884	NC 53	NC 24 to Murrill Hill Rd	Widen to 4-lane median divided facility	$153,788,000
	H111200	US 17 Bus (Marine Blvd)	Jacksonville Pkwy to US 258	Construct median and other improvements	$153,800,000
	C-4	US 17 Bus (Marine Blvd)	SR Piney Green Rd to Ramsey Rd	Access Management	$37,900,000
Unfunded Opportunity Band	H090519-A	Northwest Corridor Blvd	Extension to Western Blvd	Construct 4-lane median divided	$226,039,000
	H090774	NC 172	US 17 to NC 210	Widen to 4 lanes	$291,664,000
	H090915	NC 24 Bus	US 17 Business to US 17	Access management	$10,890,000
	H111193	Old 30 Rd/Waters Rd	US 17 to NC 24	Widening and new location	$495,069,000
	H111199	US 17 Business	US 17 Business to US 17	Widen - add one additional southbound on-ramp lane	$11,212,000
	H111205	NC 210	US 17 to New River Inlet Rd	Widen with bike lanes	$227,453,000
	H140524	Plantation Blvd	Extension to New Frontier Way	New roadway	$5,115,000
	H140844	US 258	At US 17 Business	Upgrade to interchange	$69,617,000
	C-1	Hargett St	Johnson Boulevard to Bell Fork Rd	Widen to 4 lanes	$36,319,000
	C-3	US 258	Pony Farm Rd to NC 111	Access management/superstreet	$79,293,000
	C-5	Halltown Rd	Hemlock Dr extension to Halltown Rd to Old 30 Rd	Construct new roadway and upgrade existing	$69,312,000
	S-5	US 17	At NC 210	Trumpet interchange	$69,312,000

2045 MTP Financially Constrained Roadway Projects (Current 2020-2029 MTIP)



2045 Congestion with 2045 MTP Financially Constrained Roadway Projects (Short-Term and Long-Term Opportunity Bands)



Public Transportation

The table below reflects the proposed costs and revenues for public transportation projects over the life of the MTP. The costs and revenues are broken up between public transportation capital projects and operating/maintenance. An estimated $20.1 million and $5.4 million (adjusted for inflation) are currently included in the Jacksonville MPO FY 2020-2029 TIP for public transportation capital projects and operations/maintenance, respectively. However, additional revenues may be available through fare revenues, contracts, etc. and the TIP. These additional revenues, estimated and included in the table below, leave a balance of $20.7 million needed between 2020 and 2029 to support public transportation projects.

Public Transportation Revenue/Cost Forecast							
Opportunity Band	Revenues			Costs			Balance
	Capital	Operations	Total	Capital	Operations	Total	
2020-2024	$9,322,862	$7,224,595	$16,547,456	$10,835,130	$14,925,919	$25,761,050	($9,213,593)
2025-2030	$6,005,288	$9,239,394	$15,244,682	$6,127,471	$20,657,273	$26,784,744	($11,540,062)
2031-2035	$7,306,351	$11,514,620	$18,820,971	$7,151,132	$27,071,537	$34,222,669	($15,401,698)
2036-2040	$8,889,293	$14,674,770	$23,564,063	$5,003,373	$36,633,737	$41,637,110	($18,073,047)
2041-2045	$7,880,948	$10,663,345	$18,544,293	$7,279,276	$14,746,871	$22,026,147	($3,481,855)
Total	$39,404,741	$53,316,723	$92,721,464	$36,396,382	$114,035,337	$150,431,719	($57,710,255)

Public Transportation Operations and Maintenance Funding

Operations and maintenance funding for public transportation is primarily used to run Jacksonville Transit (JT) and the Onslow United Transit System (OUTS) in the JUMPO region. Projecting current funding assistance for operations and maintenance and comparing this with projected costs to operate the existing system show that revenues fall short for all opportunity bands (see table below). New sources of operating funding are necessary, therefore, to grow the system and implement any of the operational recommendations included within this plan.[1]

Public Transportation – Existing O&M Revenue and Cost Forecasts

Opportunity Band	Operating Revenue	Operating Cost	Balance
2020-2025	$9,842,471	$9,982,628	($140,158)
2026-2029	$8,155,517	$10,314,331	($2,158,813)
2030-2035	$9,922,434	$12,548,961	($2,626,527)
2036-2040	$12,072,158	$15,267,729	($3,195,571)
2041-2045	$14,687,626	$18,575,527	($3,887,901)
Total	$54,680,206	$66,689,176	($12,008,970)

A phased implementation of the operational recommendations for public transportation (listed below) shows that total operations and maintenance costs through the 2045 horizon year of the MTP is about $113 million. Implementing these new projects and programs will bring additional revenue through fares, contracts, etc. Data suggests that fare revenues cover about 18 percent of operating costs in Jacksonville. Projecting existing funding sources (adjusted for inflation) and including additional fare revenue, the total operations and maintenance funding available for Jacksonville Transit through 2045 is approximately $52 million, resulting in a shortfall of about $61 million.

2020 to 2025	Marketing and Outreach; Reduce Headways; Service to Public Events Bell Fork/Gum Branch Road Service
2026 to 2030	Expand ADA Service to City Limit; Airport Service; MARSOC Expansion/Sneads Ferry
2031 to 2035	Employment Transportation
2036 to 2040	Intercity Express Service
2041 to 2045	Expand Service to Bases

[1] With the exception of mobility management, which is categorized as an operational recommendation but funded as a capital expense and included in the 2020-2029 TIP.

Public Transportation Capital Funding

Projections of funding for capital public transportation projects are based on current funding levels shown in the TIP. Revenue forecasts were adjusted to reflect a 4% inflation rate. The available capital funding for Jacksonville Transit totals approximately $64.6 million over the life of the MTP.

Opportunity Band Methodology

In collaboration with JT and OUTS, recommendations for short-term priorities (2020-2029) and long-term priorities (2030-2045) were developed and categorized. Many facility and other capital projects for public transportation were included in the TIP, and thus were considered a short-term funded opportunity. After establishing the funding levels beyond the short-term (2025), the next step was to consider when each of the recommendations should be included as part of the funded plan. All of the capital projects recommended can be included in the financially constrained plan but not all can be accommodated within the years desired. Higher priority projects were considered for implementation prior to lower priority projects. Two Opportunity Bands were established to categorize and prioritize the capital public transportation projects included in the MTP. The Opportunity Bands are described as follows:

1. The Short-Term Opportunity Band consists of all of the projects in the Jacksonville MPO FY 2020-2029 TIP plus one additional recommendation to bring infrastructure within federal ADA regulations (ADA compliance). This category represents all of the projects that are anticipated to be funded by the MTP's 2029 interim year. Mobility management and routine capital (amenities) were not funded past 2027 in the TIP, so extra costs are included in the projections to continue funding for these programs.
2. The Long-Term Opportunity Band consists of all of the projects that are not in the TIP but are expected to receive funding by the MTP's 2045 horizon year. Projected funding for projects in the Long-Term Opportunity Band are based on the annual average of funding shown within the Short-Term Opportunity Band and adjusted for inflation. Per MAP-21 guidelines, the projects in the Long-Term Opportunity Band are categorized into three five-year cost bands.

The capital public transportation projects included in the Short-Term Opportunity Band, primarily those found in the Jacksonville MPO FY 2020-2029 TIP, are shown in the table below.

FY 2020-2029 TIP Public Transportation Projects (Short-Term Opportunity Band)

TIP ID	Project	Type	Description
TG-5220, TG-5225C	Mobility Management	Operational	-
TG-5225	Amenities	Facility	Routine capital – bus stop shelters, benches, shop equipment, spare parts, engines, service vehicles, etc.
TD-4904	Multimodal Center	Facility	Downtown transit center
TD-4905	Park-and-Rides	Facility	-
TA-4943	Fleet Expansion	Additional Capital	Expansion bus
TA-4944	Bus Replacement Cycle	Additional Capital	Replacement bus

The following table presents the projects in the Long-Term Opportunity Band and their cost estimates.

JUMPO 2045 MTP Financially Constrained Projects (Long-Term Opportunity Band)			
Project	Type	Cost Band	Cost
Satellite Transfer Facilities	Facility	2031-2035	$259,751.44
Maintenance Facility Expansion	Facility		$4,329,191.36
Bus Yard with Dispatch Office	Facility	2036-2040	$5,267,122.64
Cisco Call Center	Additional Capital	2041-2045	$2,563,304.64

OUTS

Many of the above projects include collaboration and participation from both JT and OUTS. Some of the public transportation recommendations are primarily the responsibility of OUTS. However, expanded veteran transportation service and continuing to provide municipal non-ADA on-demand responsive service remains the responsibility of JT. OUTS relies heavily on fare revenues and state funding for capital and operating funding (see the table below), which differs from JT, and so specific OUTS recommendations are not included in this financial plan.

2018 OUTS Funding Sources (National Transit Database)						
Funding Source	Operating		Capital		TOTAL	
Fare Revenue	$1,037,408	67%	-	-	$1,037,408	59%
Local	$85,003	6%	$20,771	9%	$105,774	6%
State	$239,515	15%	$20,771	9%	$260,286	15%
Federal	$187,177	12%	$180,072	82%	$367,249	21%
Total	$1,549,103	100%	$221,614	100%	$1,770,717	100%

Active Transportation

Bicycle/Pedestrian Maintenance Funding

The City of Jacksonville funds sidewalk and greenway maintenance via their sidewalk fund included in the City budget. Currently, maintenance for these facilities is funded at $18,000 annually. This amount is assumed to increase with the rate of inflation.

Capital Bicycle/Pedestrian Funding

Currently, new bicycle and pedestrian facilities in the JUMPO region are primarily funded using federal programs, discretionary funds, and local dollars. The City of Jacksonville dedicates $100,000 a year from their sidewalk fund for construction of new facilities. There are currently no state funds dedicated to the construction of bicycle and pedestrian projects. However, the JUMPO region actively seeks out discretionary funds for these projects. In order to ascertain potential future funds available for these projects, the amount currently dedicated to bicycle and pedestrian projects in the FY 2020-2029 TIP was combined with City of Jacksonville funding and increased annually at the rate of inflation. Using this methodology, the available bicycle and pedestrian funding for the duration of the 2045 MTP is estimated to total $14.8 million. The financial plan assumes that all available funding will be expended.

Aviation

Aviation projects in the Jacksonville region are funded using a blend of federal, state, and local funds. Federal funding is disbursed through the FAA and comprises the main funding source for the airport. Local spending is the next highest funding contribution, with NCDOT providing only a very small portion of the airport's overall needs. According to the Albert J. Ellis 2017 Capital Improvement Plan, the airport plans on spending $103,907,000 (2017 dollars) between 2017 and 2022. The primary projects that the airport is looking to accomplish in the short term are the extension of the runway/taxiway and the realignment of Hwy 111.

Alternative Funding Sources

Federal and state revenues alone will not sufficiently fund a systematic program to construct transportation projects in the JUMPO area. Therefore, the City of Jacksonville, Onslow County, and JUMPO must consider alternative funding measures that could help implement this plan. Alternative funding measures being considered and applied in areas around the state and the nation are included here.

Local Option Sales Tax

The local option sales tax is implemented at the city or county level and typically requires a voter referendum. The sales tax is temporary and may be renewed at the time of its expiration date. While several different types of local option sales tax exist, only one may be enacted at a time. Since 2007, North Carolina counties (but not cities) have had the option to increase the sales tax by a quarter of a penny, pending voter referendum, to fund transportation improvements, based on G.S. 105 Article 46. From November 2007 to November 2012, 90 referendums had been held in 59 counties, and 25 were approved while 65 failed. The tax does not apply to groceries, prescription drugs, gasoline, automobile purchases, or utilities. Onslow County is not currently assessing this local option sales tax.

In additional to the general local option sales tax, Onslow County is also eligible to enact a quarter-cent sales tax for transit (G.S. 105 Article 43). Enacted in the same manner as the general local option sales tax, revenue generated from this source must be used to fund the financing, construction, operation, or maintenance of public transportation systems. Improvements eligible for funding through this revenue source can also include projects supportive of the transit system, such as supporting bicycle and pedestrian infrastructure and signal system improvements. Three counties currently assess the quarter-cent sales tax for transit: Mecklenburg, Durham, and Orange Counties.

Transportation Impact Fees

Local governments may impose transportation impact fees on new development projects that will help fund transportation improvements. Impact fees are intended to recuperate the costs associated with new development. However, significant opposition to impact fees exists in North Carolina, specifically regarding the implementation of impact fees for schools or residential developers. The imposition of impact fees requires the approval of the General Assembly. Twenty-two cities and three counties have been given impact fee authority in North Carolina.

Transportation Utility Fees

Transportation utility fees are charged to properties based on their land uses and intensities. This financing mechanism treats the transportation network as a utility and charges monthly fees in

proportion to network use. Accordingly, the fee is collected from residential and commercial property owners via their local utility bills. While not currently in use in North Carolina, localities can create the legal presumption that a transportation utility fee is a fee, not a tax, by collecting it with fees for other public services.

Transportation Improvement Bonds

Transportation bonds require voter approval and allow municipalities to sell bonds to investors, generating funds for transportation projects sooner. The investors are paid back via a tax increase. Transportation bonding is a common funding mechanism that has been successful in North Carolina. A $75 million bond referendum was passed by Raleigh voters in October 2013 to fund 18 projects including 14 roadway projects. This bond increased the property tax rate per $100 of valuation by 1.12 cents. The previous transportation bond referendum to pass in Raleigh was in 2011 for $37 million, which is currently funding seven projects. Onslow County has not pursued a transportation improvement bond in the past 10 years.

Oversize Agreements

Localities and developers may engage in an oversize agreement in which the locality compensates the developer for constructing a collector street instead of a local street. This can result in bike accommodations along the road constructed at a cost shared between the city or county and developer.

Grant Anticipation Revenues Vehicles (GARVEE) Bonds

North Carolina has issued four federal GARVEE bonds in total, the most recent having been issued in January 2012 at a value of $179.54 million. GARVEE bonds enable localities to obtain an advance on anticipated federal or state funding. The localities can then implement projects more quickly, capitalizing on present-day construction and design costs, and then pay debt service to the bonding entity.

Build NC

Build NC, which became effective January 1, 2019, is a financing tool that allows NCDOT to continue delivering critical road projects at the regional and division tiers that do not qualify for a similar federal funding tool. This funding tool is similar to the federal GARVEE Bond but applicable at the State level.

Action Plan

Planning for future needs and matching them to available funding will continue to pose a challenge for the Jacksonville Urban Area MPO. In light of growing demands on JUMPO's transportation system and limited funding for both capital projects and maintenance, JUMPO should consider the following action items when developing a strategy to obtain funding for high priority projects:

- Pursue opportunities for projects that would score well in NCDOT's Prioritization process.
- Continue to identify and utilize discretionary funds such as Transportation Alternatives Program (TAP) funds or Better Utilizing Investments to Leverage Development (BUILD) grants.
- Continue to partner with the Department of Defense to identify and support transportation projects that improve the functionality of the region's military installations.
- Coordinate with Jacksonville Transit and OUTS to identify potential alternative funding sources that are supportive of transit needs.
- Begin implementing public transportation recommendations that have little to no cost, especially a new fare structure, new fare media, and marketing and outreach. These can help boost ridership and revenues at minimal costs.
- Maintain existing and seek out new partnerships throughout the JUMPO region.
- Investigate alternative funding sources that may be viable in the JUMPO region.
- Educate local officials and the public about alternative funding sources.

Introduction

Performance management is a strategic approach that uses system information to make investment and policy decisions to achieve goals set for the multimodal transportation systems in the MPO study area. Performance-Based Planning and Programming (PBPP) refers to the transportation agencies' application of performance management as standard practice in the planning and programming processes. The goal of PBPP is to ensure that transportation investment decisions— both long-term planning and short-term programming—are based on the ability to meet established goals.

As a federal requirement, states will invest resources in projects to achieve individual targets that collectively will make progress toward national goals. MPOs are also responsible for developing MTPs and TIPs "through a performance-driven, outcome-based approach to planning."

National Goal Areas

Highway Performance

Through the federal rulemaking process, the Federal Highway Administration (FHWA) is requiring state DOTs and MPOs to monitor the transportation system using specific performance measures. These measures are associated with the national goal areas prescribed in MAP-21 and the FAST Act. The following list describes these national goal areas for highway performance as well as measures of performance. It should be noted that the MPO can take on additional measures beyond what is described.

National Goal Areas	
Goal Area	Goal
Safety	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
Infrastructure Condition	To maintain the highway infrastructure asset system in a state of good repair
System Reliability	To improve the efficiency of the surface transportation system
Freight Movement and Economic Vitality	To improve the National Highway Freight Network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
Congestion Reduction	To achieve a significant reduction in congestion on the National Highway System
Environmental Sustainability	To enhance the performance of the transportation system while protecting and enhancing the natural environment

Safety Targets

NCDOT was required to evaluate and report on safety targets for the five required measures in August of 2017. This action started the clock for the MPO to act to evaluate and set regionally specific goals or to accept and support the state's goals. On January 23, 2018, the JUMPO Technical Advisory Committee (TAC) acted to support the NCDOT safety targets for each project measure. However, moving forward the TAC and MPO encourage the NCDOT to focus on engineering, enforcement, and education strategies to achieve these goals, as current and project growth trends may prove safety targets unattainable by solely focusing on infrastructure investment. In support of the safety targets and tracking performance, the MPO will measure safety targets before and after project completion using similar methodology to that performed by the State in creating the targets.

These safety goals are updated annually in August by NCDOT and require action by the JUMPO Technical Advisory Committee (TAC) to formally adopt the revised annual goals.

Safety Targets	2020 Targets			2019 Targets		
	Reduce by	From (2014-2018 average)	To (2016-2020 average)	Reduce By	From (2013-2017 average)	To (2015-2019 average)
Total Fatalities	6.23 %	1,396.4	1,227.8	5.59 %	1,362.8	1,214.7
Fatality Rate	5.39 %	1.211	1.084	5.02 %	1.216	1.097
Total Serious Injuries	8.54 %	3,362.6	2,812.8	6.77 %	2,865.2	2,490.6
Serious Injury Rate	7.64 %	2.886	2.462	6.12 %	2.528	2.228
Total Non-Motorized Fatalities and Serious Injuries	7.13 %	494.6	426.6	6.02 %	457.0	403.7

Safety Targets	2018 Targets		
	Reduce by	From (2012-2016 average)	To (2014-2018 average)
Total Fatalities	5.10 %	1,340.6	1,207.3
Fatality Rate	4.75 %	1.228	1.114
Total Serious Injuries	5.10 %	2,399.8	2,161.2
Serious Injury Rate	4.75 %	2.191	1.988
Total Non-Motorized Fatalities and Serious Injuries	5.30 %	438.8	393.5

Pavement and Bridge Targets

NCDOT was required to evaluate and report on pavement and bridge targets for six measures in May of 2018. This action started the clock for the MPO to evaluate and set regionally specific goals or to accept and support the state's goals. On October 11, 2018, the JUMPO TAC acted to support the NCDOT pavement and bridge targets for each performance measure. In support of the pavement and bridge targets and tracking performance, the MPO will measure these targets before and after project completion using similar methodology to that performed by the State in creating the targets.

The goals established by the state for 2019 and 2021 are as follows:

Pavement and Bridge Measures and Targets		
Performance Measure	2 Year Target 1/1/2018 – 12/31/2019	4 Year Target 1/1/2018 – 12/31/2021
Interstate Pavement Condition (Good)		37.0%
Interstate Pavement Condition (Poor)		2.2%
Non-Interstate NHS Pavement Condition (Good)	27.0%	21.0%
Non-Interstate NHS Pavement Condition (Poor)	4.2%	4.7%
NHS Bridge Condition (Good)	33.0%	30.0%
NHS Bridge Condition (Poor)	8.0%	9.0%

System Performance and Freight Targets

NCDOT was required to evaluate and report on system performance and freight targets for three travel time reliability measures in May of 2018. This action started the clock for the MPO to evaluate and set regionally specific goals or to accept and support the state's goals. On October 11, 2018, the JUMPO TAC acted to support the NCDOT system performance and freight targets for each performance measure. In support of the system performance and freight targets and tracking performance, the MPO will measure these targets before and after project completion using similar methodology to that performed by the State in creating the targets.

The goals established by the state for 2019 and 2021 are as follows:

System Performance and Freight Measures and Targets		
Performance Measure	2 Year Target 1/1/2018 – 12/31/2019	4 Year Target 1/1/2018 – 12/31/2021
Interstate Level of Travel Time Reliability	80.0%	75.0%
Non-Interstate NHS Level of Travel Time Reliability		70.0%
Interstate Truck Travel Time Reliability	1.65	1.70

Transit Asset Management

The FAST Act continued implementation of performance based planning and programming to achieve desired performance outcomes for the multimodal transportation system, including setting targets for future performance by States, providers of public transportation and metropolitan planning organizations (MPO). The Federal Transit Administration (FTA) issued a final rule on transit asset management to establish a system to monitor and manage public transportation assets to improve safety and increase reliability and performance, under which providers of public transportation receiving federal funds were required to set their initial asset management targets by January 1, 2017.

Public transportation operators are directed to share information with MPOs and states so that all plans and performance reports are coordinated. Jacksonville Transit and Onslow United Transit System agree to plan and program projects that contribute toward the accomplishment of NCDOT's Group Transit Asset Management Plan's targets as noted below for each of the listed performance measures:

Asset Category - Performance Measure	Asset Class	Useful Life Benchmark	2019 Target
Revenue Vehicles			
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	AO - Automobile	8	20%
	BU - Bus	14	20%
	CU - Cutaway Bus	10	20%
	MB - Mini-bus	10	20%
	MV - Mini-van	8	20%
	SV - Sport Utility Vehicle	8	20%
	VN - Van	8	20%
	Other	8	20%
Equipment			
Age - % of vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Non-Revenue/Service Automobile	8	20%
	Steel Wheel Vehicles	8	20%
	Trucks and other Rubber Tire Vehicles	8	20%
	Maintenance Equipment	Agency Determined	20%
	Computer Software	Agency Determined	20%
Facilities			
Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	Administration	N/A	20%
	Maintenance	N/A	20%
	Parking Structures	N/A	20%
	Passenger Facilities	N/A	20%

Introduction

The *JUMPO 2045 MTP* recommends a multimodal network that builds upon the requirements set forth by FHWA for a metropolitan long range transportation plan. The multimodal network essentially is a coordinated set of corridor strategies that balance four critical considerations:

- Mobility— How will improvements to the corridor address travel needs?
- Accessibility— How will improvements to the corridor improve access to surrounding land?
- Safety— How will improvements to the corridor limit conflict points and reduce crash frequency or severity?
- Connectivity— How will improvements to the corridor enhance connections between modes?

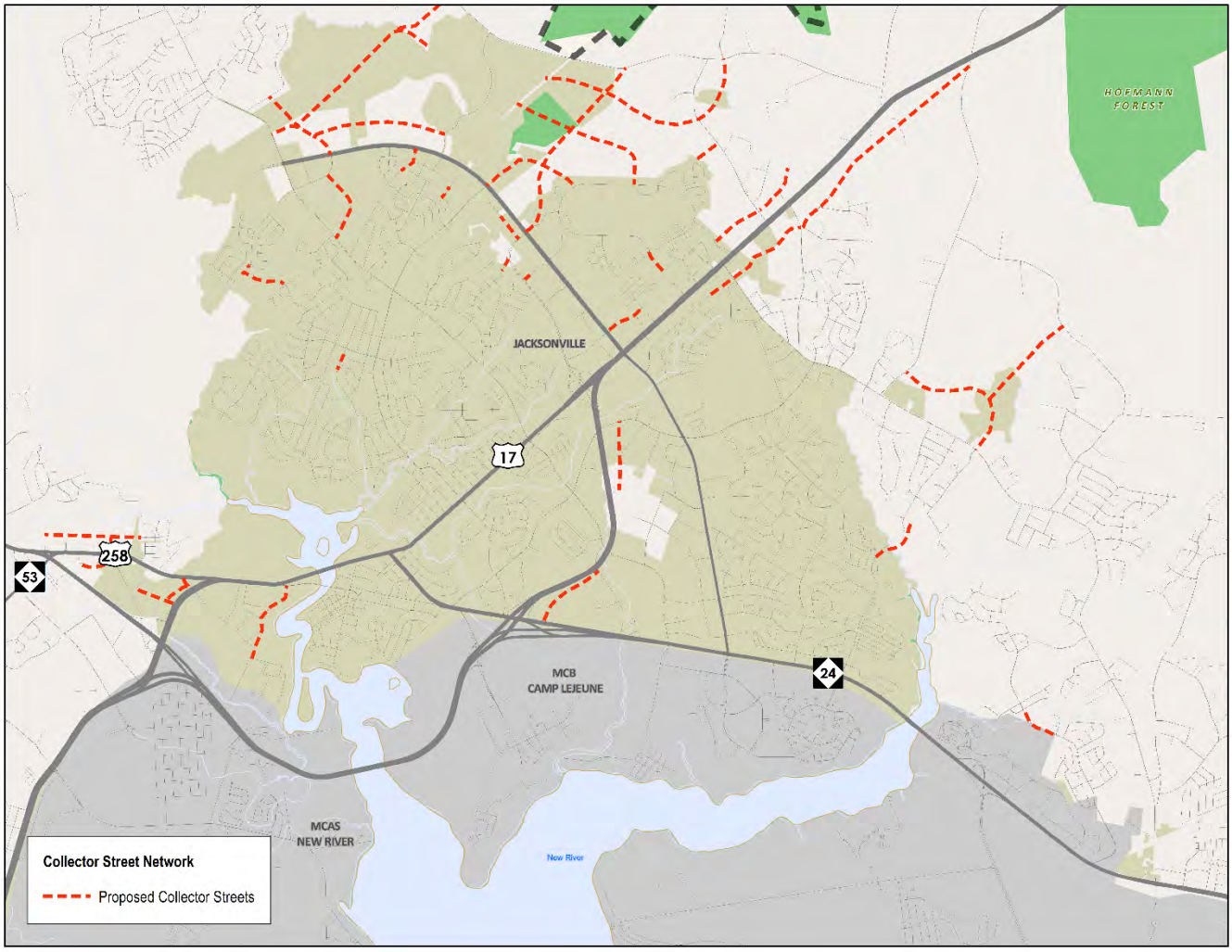
What is a Collector Street?

Many roadways such as arterials and interstate highways are easily identified by residents, tourists, developers, and elected officials as the roadways we depend on to connect us to destinations on the other side of the city, to go downtown, or to visit friends and relatives in other parts of the region or state. We often refer to arterials and interstate highways when giving directions and they are specifically identified on travel maps. At the other end of the roadway hierarchy are local streets. These are also easily identifiable, especially to residents who live along them and whose kids oftentimes use them to play, ride their bikes, or walk to the neighbor's house. Local streets represent the largest proportion of streets within a city and are where residential housing is most prevalent.

Collector streets exist between these roadway types and provide a vital link to many community-gathering places. Their primary function is to gather traffic from the local residential or commercial street systems and deliver it to the closest minor or major arterial. Collector streets provide both local access to adjacent properties and mobility for vehicles and other modes of transportation. Collector streets are an intermediate link supplying important continuity in the functional system between local streets with unlimited access and arterial roads with limited access.

Collector Streets balance access and mobility and provide a necessary connection between the local roads where people begin their daily trips and the roads that carry commuters to their jobs, school, and church and beyond. A well-connected system of collector and local roads can relieve arterials of short trip congestion.

2045 JUMPO MTP Collector Street Map



Ten corridors were selected for more detailed explanation of system recommendations. The pages that follow include a brief background of the corridor's role in the region's transportation network. For some corridors, the description is followed by a brief overview of how it address the four critical considerations: mobility, accessibility, safety, and connectivity. For other corridors, more detail is provided by previous plans or elements specific to the recommendations.

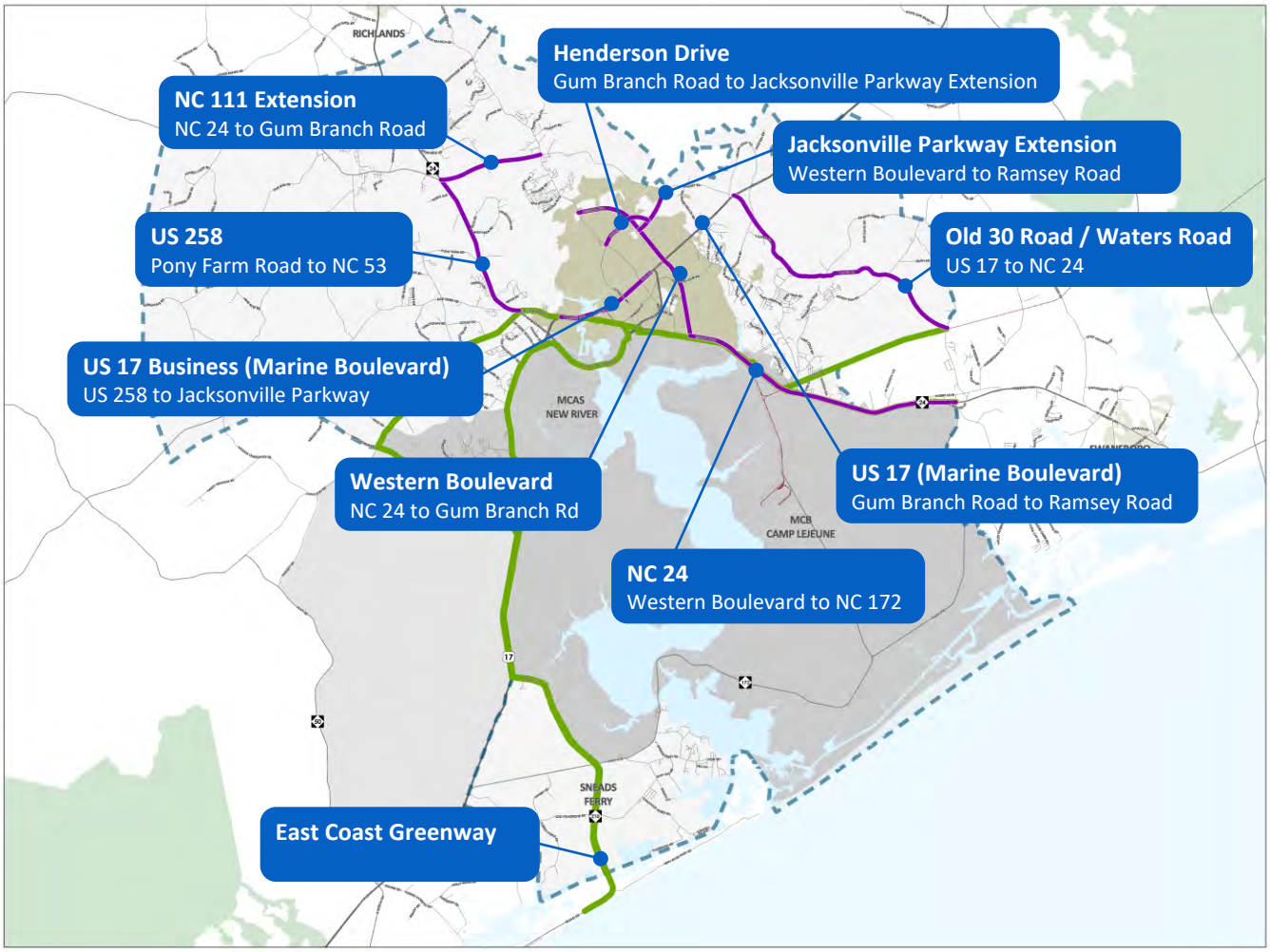


Figure 1. Corridor Profiles Map

Western Boulevard – NC 24 to Gum Branch Road

Western Boulevard (NC 53) is one of Jacksonville's major north-south corridors and connects two primary arterials, US 17 and NC 24. As a major commercial and employment corridor, Western Boulevard includes destinations such as the Coastal Carolina Community College, Onslow Memorial Hospital, and Jacksonville Mall. Currently, Western Boulevard is a 7-lane undivided principal arterial south of US 17 and a 6-lane divided minor arterial north of US 17. Traffic volumes on this roadway, south of US 17 are approximately 40,000 vehicles per day, with a total of 46,000 vehicles per day north of Country Club Road. According to the NC 53 Corridor Study, the crash rate for the segment between Circuit Lane and NC 24 is more than three times the state average for a multilane NC route with a continuous left-turn lane.

2045 Long Range Transportation Plan Recommendations

Roadway

- Improvements at all signalized intersections
- Operational/ Access Management improvements, including median, lighting, connection to intersection offsets

Bicycle

- 10' shared-use path on the east side

Pedestrian

- 10' shared-use path on the east side
- Sidewalks west side
- Pedestrian signals
- Pedestrian lighting
- Pedestrian crosswalks

Transit

- Potential route adjustments following completion of the multimodal center

Mobility *(vehicular)*	The recommended improvements will improve through capacity though future congestion likely will not dip below existing levels. The parallel network offered by the US 17 Bypass and Jacksonville Parkway will relieve some pressure on Western Boulevard.
Accessibility *(land use context)*	With three of the region's most popular destinations, improvements to Western Boulevard and surrounding roads will make it safer and easier for students, patients, and customers to access services and jobs in the area.
Safety *(crashes)*	Access management along Western Boulevard combined with intersection improvements will improve safety by making turn movements more predictable.
Connectivity *(among modes)*	The shared-use path along the corridor will allow protected travel for bicyclists and motorists. Connectivity between the existing rail trail and points north will be enhanced. Changes to transit service may be necessary once the multimodal center is completed.

Related Project Sheets

- US 17 (Marine Blvd) / NC 53 (Western Blvd)
- NC 24 (Lejeune Blvd) / NC 53 (Western Blvd)
- NC 53 (Western Blvd)

Relevant Plans and Studies

- NC 53 Western Boulevard Corridor Study
- Northwest Corridor Feasibility Study

The following exhibits, taken from the NC 53 Corridor Study, show the recommended cross section for Western Boulevard between University Drive and Country Club Road.

NC 111 Extension – US 258 to Gum Branch Road

NC 111 is proposed to be extended from its current terminus at US 258 to the intersection of Ramsey Road and Gum Branch Road. This project, listed as TIP project U-5733, will provide better access to the northern portions of the study area and will reduce traffic congestion on surrounding roadways. The roadway is proposed to be constructed as a two lane facility within a right-of-way sufficient to accommodate a four lane divided roadway in the future. NC 111 Extension as proposed would travel through an area that includes neighborhoods and homes, wetlands and streams, businesses, and agricultural uses. An environmental assessment is currently in process as the initial project planning and design. During this assessment, a series of alternative alignments are being assessed based on social and environmental impacts, feasibility, and public input. Upon completion, consideration should be given to designating Ramsey Road as NC 111.

Alternative Alignments

Four conceptual alignments were identified based on a high level review of the social and environmental features in this area. The four alignments are unified on their western end but deviate as they approach the wetlands associated with the New River. The alignments are illustrated on the next page and include the following potential benefits and drawbacks.

Alternative A

- Least wetland crossing (approx. 1,800')
- 2 bridges or structures required (single span structures lower overall cost)
- 1 large agricultural property impact
- Possible impacts to neighborhoods on eastern side

Alternative B

- Moderate wetland crossing (approx. 4,400')
- Minimizes impacts to residential areas
- 1 larger bridge likely required
- 1 large agricultural property impact

Alternative C

- Moderate wetland crossing (approx. 3,400')
- 2 bridges or structures required (single span structures lower overall cost)
- 1 large agricultural property impact
- Possible impacts to neighborhoods and golf course on the eastern side

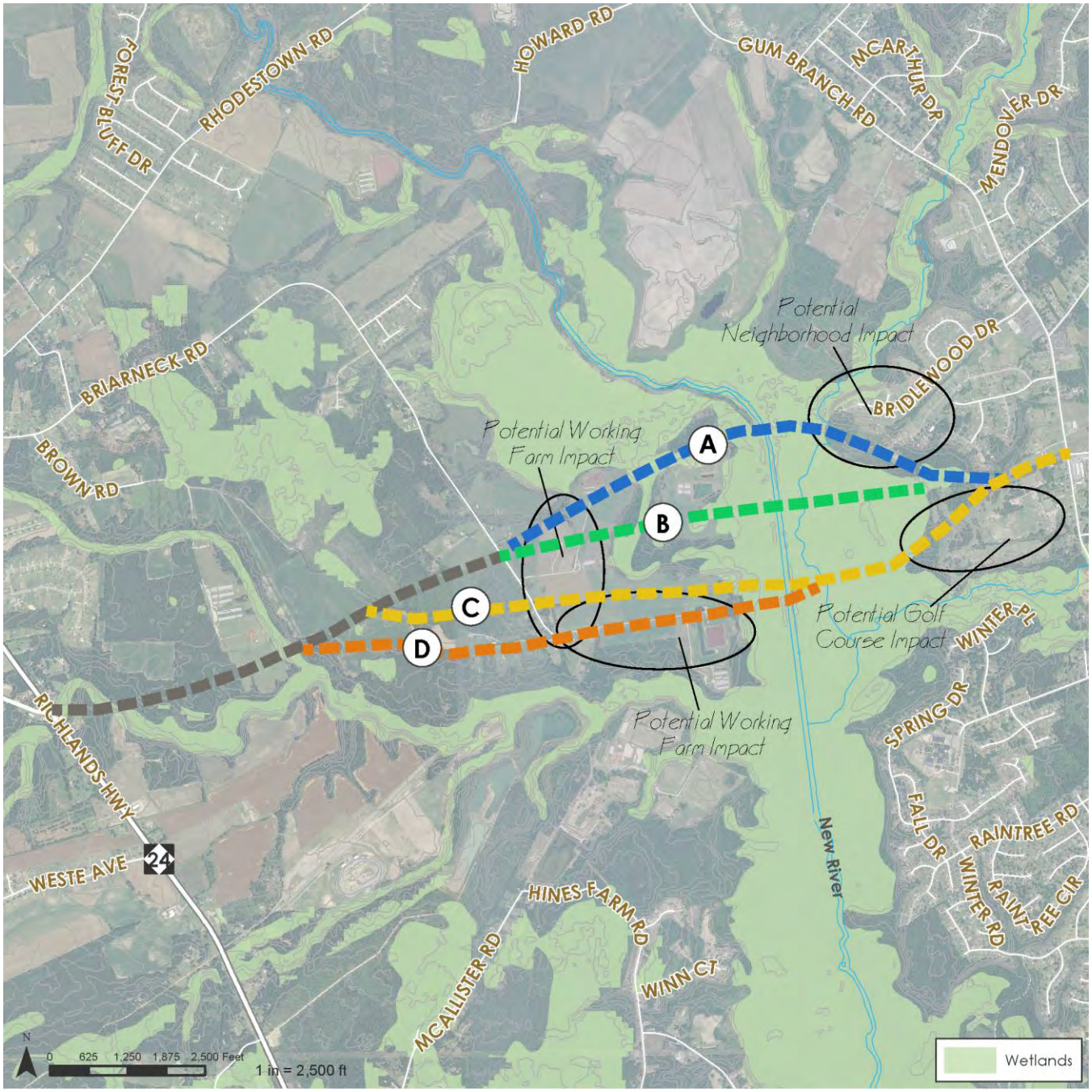
Alternative D

- Moderate wetland crossing (approx. 3,200')
- Bridge crossing similar to Alternative C
- 1 large agricultural property impact
- Uses existing roadways (Nancy Drive and Briarneck Road)
- Impacts to residential areas and golf course

The map below shows four conceptual alternative alignments for the extension of NC 111 from NC 24 to Gum Branch Road. These alignments have been considered during the MERGER process.

Related Project Sheets

- NC 111 (Catherine Lake Road)
- NC 111



Jacksonville Parkway Extension – Western Boulevard to Ramsey Road

The Jacksonville Parkway opened in December 2013, providing a continuous traffic flow from the US 17 bypass and Western Boulevard at Gateway Drive North. The proposed extension would involve the construction of a new four lane divided facility between its current terminus at Western Boulevard to Ramsey Road. Ramsey Road would be widened to four lanes to US 17, in effect creating a northern loop with a consistent cross section. The proposed extension would also tie into the proposed extension of Henderson Drive, opening up a previously inaccessible area for future growth and development.

2045 Long Range Transportation Plan Recommendations

Roadway

- New four lane divided roadway from Western Blvd to Ramsey Rd
- Widen Ramsey Rd to US 17
- Jacksonville Pkwy as the through movement at Ramsey Rd

Bicycle

- Bike lanes

Pedestrian

- Sidewalks

Transit

- Potential route adjustments following completion of the multimodal center

Mobility *(vehicular)*	Jacksonville Parkway was an important connection to enhance mobility in the city. The extension, including associated improvements to Ramsey Road, will provide an alternative connection to US 17.
Accessibility *(land use context)*	Jacksonville Parkway enhanced accessibility to the commercial hub along Western Boulevard. The extension will improve accessibility to Jacksonville Commons and the Onslow County Emergency Services complex. Upon completion, access to undeveloped land will also increase.
Safety *(crashes)*	Safety improvements along other roads in the area are likely when the Jacksonville Parkway Extension is completed. The four-lane divided cross section also will provide a safer design compare to undivided facilities.
Connectivity *(among modes)*	Bicycle lanes and sidewalks associated with the Jacksonville Parkway Extension are critical in the area given the numerous parks, schools, and neighborhoods in the vicinity.

Related Project Sheets

- NC 53 (Western Blvd) / Jacksonville Pkwy
- SR 2714 (Jacksonville Pkwy)

Relevant Plans and Studies

- N/A

As shown in the image below, the Jacksonville Parkway Extension is an important connection north of Western Boulevard. The project, coupled with improvements to Ramsey Road and an extension of Henderson Drive, will provide additional route options for motorists, bicyclists, and pedestrians. The diagram emphasizes a design that makes the Jacksonville Parkway Extension the through movement instead of Ramsey Road.

US 258 – Pony Farm Road to NC 53

North Carolina has identified an integrated network of high priority multimodal transportation corridors with the intent to connect state and regional activity centers, enhance economic development, and promote reliable and efficient mobility and accessibility. Strategic Transportation Corridors in the Jacksonville area include US 17 and US 258 northwest of the city. US 258 exists as part of Corridor W (US 401/NC24/US258) and Corridor X (US 258/NC 11/US 13). Locally, this section of the corridor provides a critical connection between the urban core of Jacksonville and Albert J. Ellis Airport. The corridor is also the primary route to I-40 and I-85 from Jacksonville. Recommendations include operational improvements along US 258 and intersection improvements at key locations. Improvements will address acute issues affecting travel between Jacksonville, I-40, and points north as well as enhance access to the airport.

2045 Long Range Transportation Plan Recommendations

Roadway

- Modified superstreet
- Construction of an interchange at NC 24 / US 258 / NC 53
- Realignment of the US 258 / Ridge Rd / Blue Creek Rd intersection

Bicycle

- None

Pedestrian

- None

Transit

- Shuttle between Albert J. Ellis Airport and the proposed multimodal center

Mobility *(vehicular)*	Operational improvements, a new interchange, and realignment of the Ridge Rd intersection will work in concert to improve mobility for local and through trips.
Accessibility *(land use context)*	Improvements to the corridor will enhance accessibility to the region's airport (with service to hubs in Charlotte and Atlanta), the county's new administrative offices, and associated development.
Safety *(crashes)*	Safety enhancements are expected with the construction of an interchange at NC 24/US 258/NC 53. Realignment of the Ridge Rd intersection and construction of a modified superstreet also will enhance safety.
Connectivity *(among modes)*	The construction of a sidepath on the north side of US 258 from Pony Farm Road to NC 53 should be considered as part of the future corridor study.

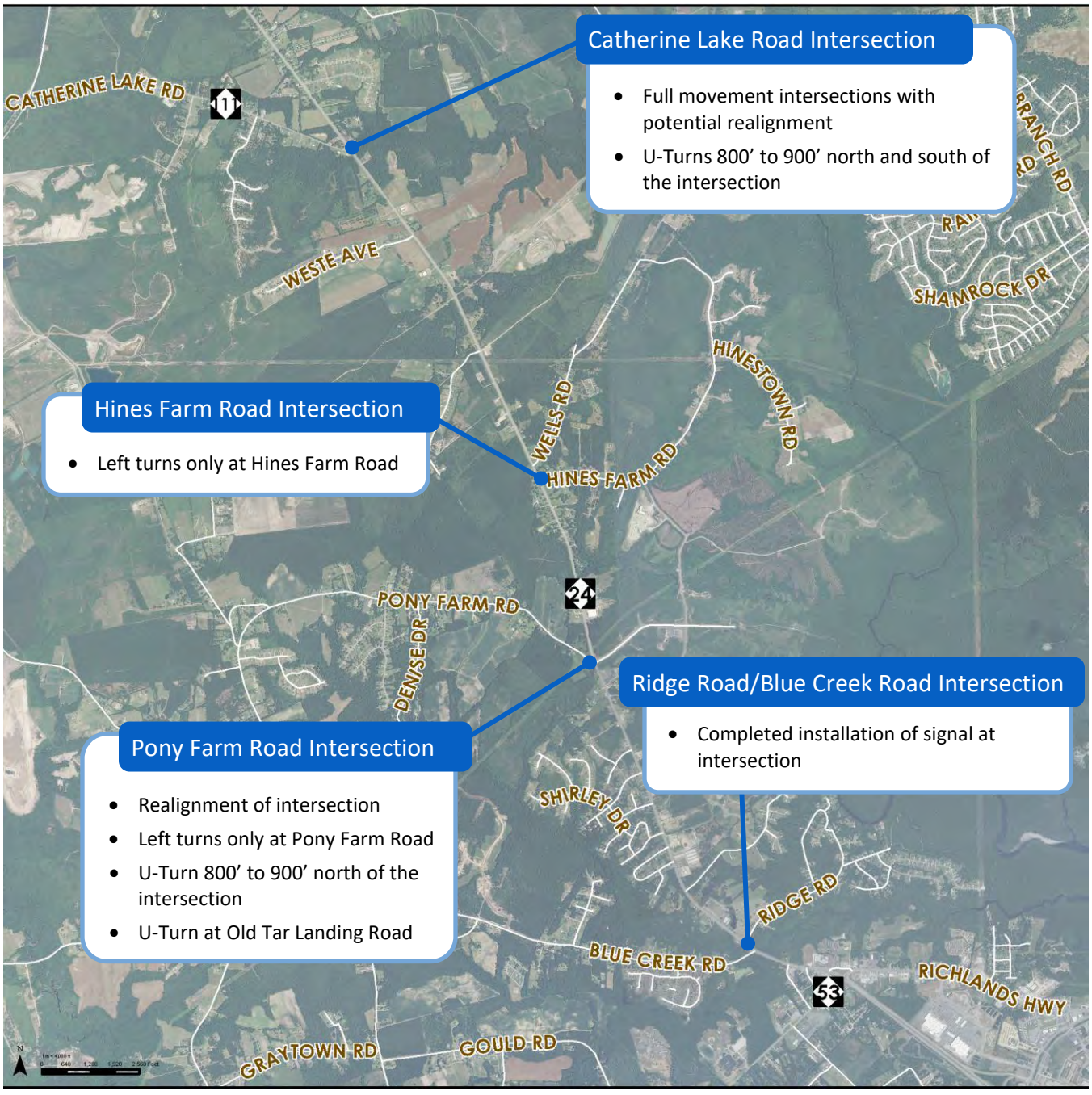
Related Project Sheets

- NC 24 / US 258 / NC 53
- US 258 (Richlands Hwy) / SR 1219 / SR 1396
- US 258 (Richlands Hwy)

Relevant Plans and Studies

- US 258 Corridor Study (Future, Date TBD)
- Northwest Corridor Study (2010)

JUMPO likely will initiate a detailed corridor study with the intent to explore a variety of alternative design improvements and to offer a higher level of design detail of the preferred alternative. As a precursor to the corridor study, the following schematic shows the potential creation of a modified superstreet between Catherine Lake Road and the proposed interchange at the NC 24/US 258/NC 53 intersection.



NC 24 – Western Boulevard to NC 172

NC 24 is part of the statewide strategic transportation corridor network. In Jacksonville, the corridor: 1) serves as a regional commuter route and local east-west connector, 2) provides access to commercial centers and emerging residential neighborhoods, and 3) serves as the front door to MCB Camp Lejeune. Balancing these competing needs is an ongoing challenge and the reason for several recommendations. These recommendations include access management strategies along NC 24, enhancements to drainage and traffic operations at Western Boulevard, and improvements to adjacent streets. The access management strategies and improvements to the NC 24 / Western Boulevard intersection appear in the current TIP as projects U-5741 and U-5508, respectively.

2045 Long Range Transportation Plan Recommendations

Roadway

- Access management improvements within the existing right-of-way
- Creation of a more refined parallel network on Liberty Dr and Texie Ln
- Apply modified superstreet from Northwest Creek to NC 172

Bicycle

- Extension of the existing shared-use path
- Bike lanes on Liberty Dr

Pedestrian

- Extension of the existing shared-use path
- Sidewalks on the north side of NC 24
- Sidewalks along the surrounding network (Liberty Dr, Piney Valley Dr, Corbin St)

Transit

- Ongoing service improvements

NC 24 Corridor Study – Preferred Traffic Management Strategy

The NC 24 Corridor Study outlines a preferred traffic management strategy for the corridor between Bell Fork Road and Piney Green Road. The strategies includes the following improvements.

- No change to the existing NC 24 cross section
- Enhanced parallel route through improvements to Liberty Dr
- Connector roads, including Texie Ln extension to Center Street and a connector between East Dr and NC 24
- Intersection modifications at Bell Fork Road and Western Blvd
- Closed median openings between Western Blvd and Iwo Jima Blvd; between Corbin St and East Dr
- Creation of left-over crossings between Bell Fork Rd and Western Blvd; at Iwo Jima Blvd; between Pine Valley Rd and Corbin St; and between East Dr and the South Fork of the New River

For More Information www.jumpo-nc.org/plans-documents

The following graphics are from the NC 24 Corridor Study. These images reflect the preferred traffic management strategy and associated bicycle and pedestrian improvements.

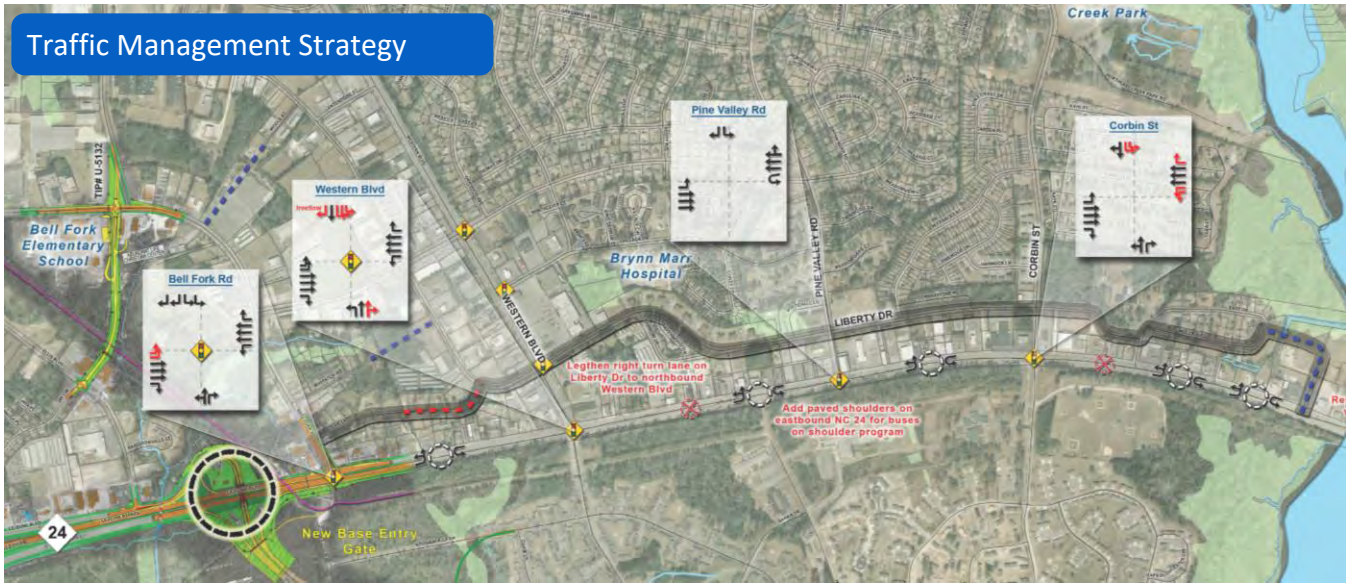
Related Project Sheets

- NC 24 (Lejeune Blvd) / NC 53 (Western Blvd)
- NC 24 (Lejeune Blvd)
- Liberty Road

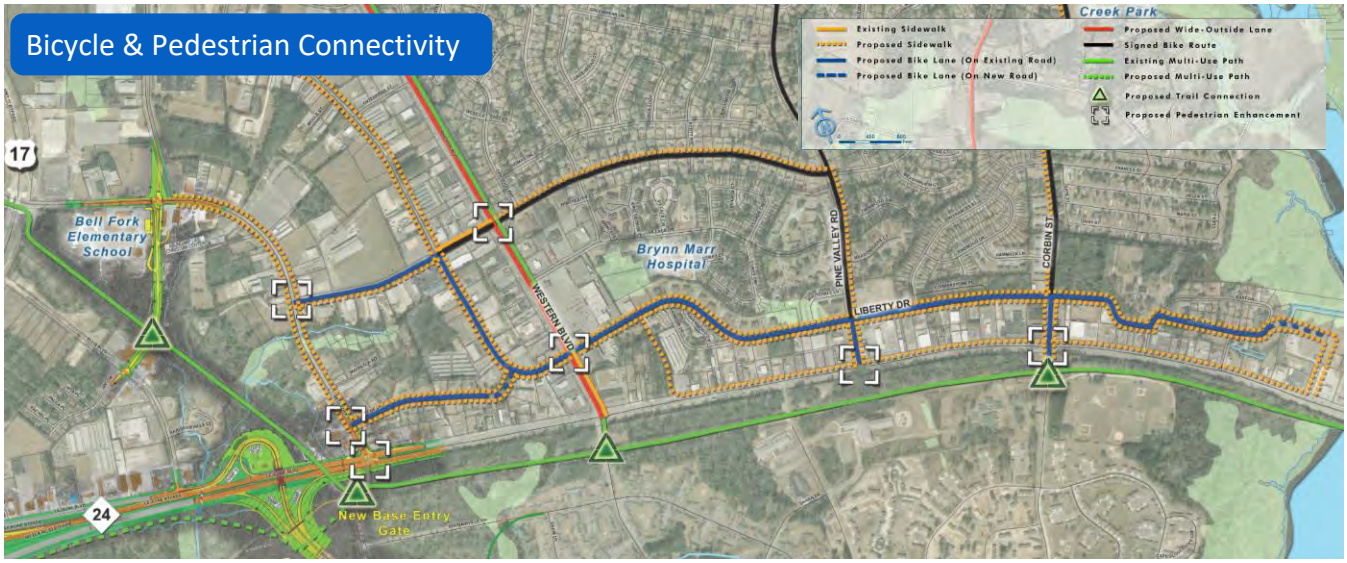
Relevant Plans and Studies

- NC 24 Corridor Study
- Western Boulevard Corridor Study
- MCB Camp Lejeune Bicycle and Pedestrian Safety Study

Traffic Management Strategy



Bicycle & Pedestrian Connectivity



Henderson Drive – Gum Branch Road to Jacksonville Parkway Extension

Henderson Drive provides an east-west connection north of downtown between Gum Branch Road and Western Boulevard. Extensions of Henderson Drive and Jacksonville Parkway will open up previously inaccessible areas for future development and provide connections to regional amenities such as the Jacksonville High School, and major shopping destinations. This extension also will provide an access route to the northern bypass created by the improvements to Ramsey Road. Proposed capacity additions along the existing portion of Henderson Drive will help reduce congestion in other areas of the network, while also underscoring the future functionality of Henderson Drive as a major arterial in the region. Bicycle, pedestrian, and transit movements in the region will be enhanced due to the corridor's provision of multimodal amenities.

2045 Long Range Transportation Plan Recommendations

Roadway

- Widen Henderson Dr between Gum Branch Rd and Western Blvd to four-lane divided
- Construct new four-lane divided road between Western Blvd and Jacksonville Pkwy Extension

Bicycle

- Bike Lanes

Pedestrian

- Sidewalks on both sides
- Pedestrian signals
- Pedestrian crosswalks

Transit

- Existing service on the Purple route to be supplemented with service improvements
- Potential service modifications following completion of the multimodal center

Mobility *(vehicular)*	The completion of the Jacksonville Parkway in 2013 greatly enhanced mobility north of US 17. Mobility would be further enhanced with improvements to existing Henderson Drive and the construction of a four-lane divided facility that connects to the proposed Jacksonville Parkway extension.
Accessibility *(land use context)*	Henderson Drive will enhance accessibility to the Western Boulevard commercial corridor as well as the civic and institutional uses associated with Jacksonville Commons and the schools.
Safety *(crashes)*	A multimodal intersection design at the confluence of Henderson Drive and Western Boulevard will be critical to limit potential conflicts between motorists and other modes.
Connectivity *(among modes)*	Improvement to Henderson Drive, particularly its extension to the Jacksonville Parkway, will provide critical connections to the Jacksonville Commons area.

Related Project Sheets

- Henderson Dr Extension
- Henderson Dr
- Jacksonville Parkway
- Western Blvd

Relevant Plans and Studies

- N/A

The extension of Henderson Drive east of Western Boulevard to the proposed Jacksonville Parkway requires consideration of multimodal intersection design.

Old 30 Road / Waters Road – US 17 to NC 24

Old 30 Road and Waters Road are currently two-lane facilities that roughly parallel Piney Green Road in the northeastern portion of the MPO area. Waters Road terminates at Halltown Road in the west, while Old 30 Road intersects with Rocky Run Road before leaving the MPO area. Recommended improvements to these facilities include a combination of improvements to the existing cross-sections and construction of new location connections. Ultimately, this improved corridor will connect from Ramsey Road to Riggs Road. The Old 30 Road/Waters Road connection will complete the proposed northern loop for the region, helping to divert traffic from congested areas and creating an opportunity for growth in the northeastern portion of the study area.

2045 Long Range Transportation Plan Recommendations

Roadway

- Widen portions of Waters Rd and Old 30 Rd with partial new construction to complete a continuous four lane facility

Bicycle

- Paved shoulder

Pedestrian

- Paved shoulder

Transit

- None

Mobility *(vehicular)*	This facility will connect with improvements to Ramsey Road to complete a northern loop in the MPO area. The connection will provide an alternative route to the NC 24 corridor and an additional crossing of Little Northeast Creek.
Accessibility *(land use context)*	While the Old 30 Road/Waters Road connection is recommended primarily to alleviate congestion, the improvement also will enhance general accessibility in the area.
Safety *(crashes)*	Providing an alternative route to Piney Green Road should more evenly distribute traffic and improve safety. Special consideration is needed at key intersection along the Old 30 Road/Waters Road corridor.
Connectivity *(among modes)*	Recommended bicycle and pedestrian facilities for the corridor are based on its relatively rural context.

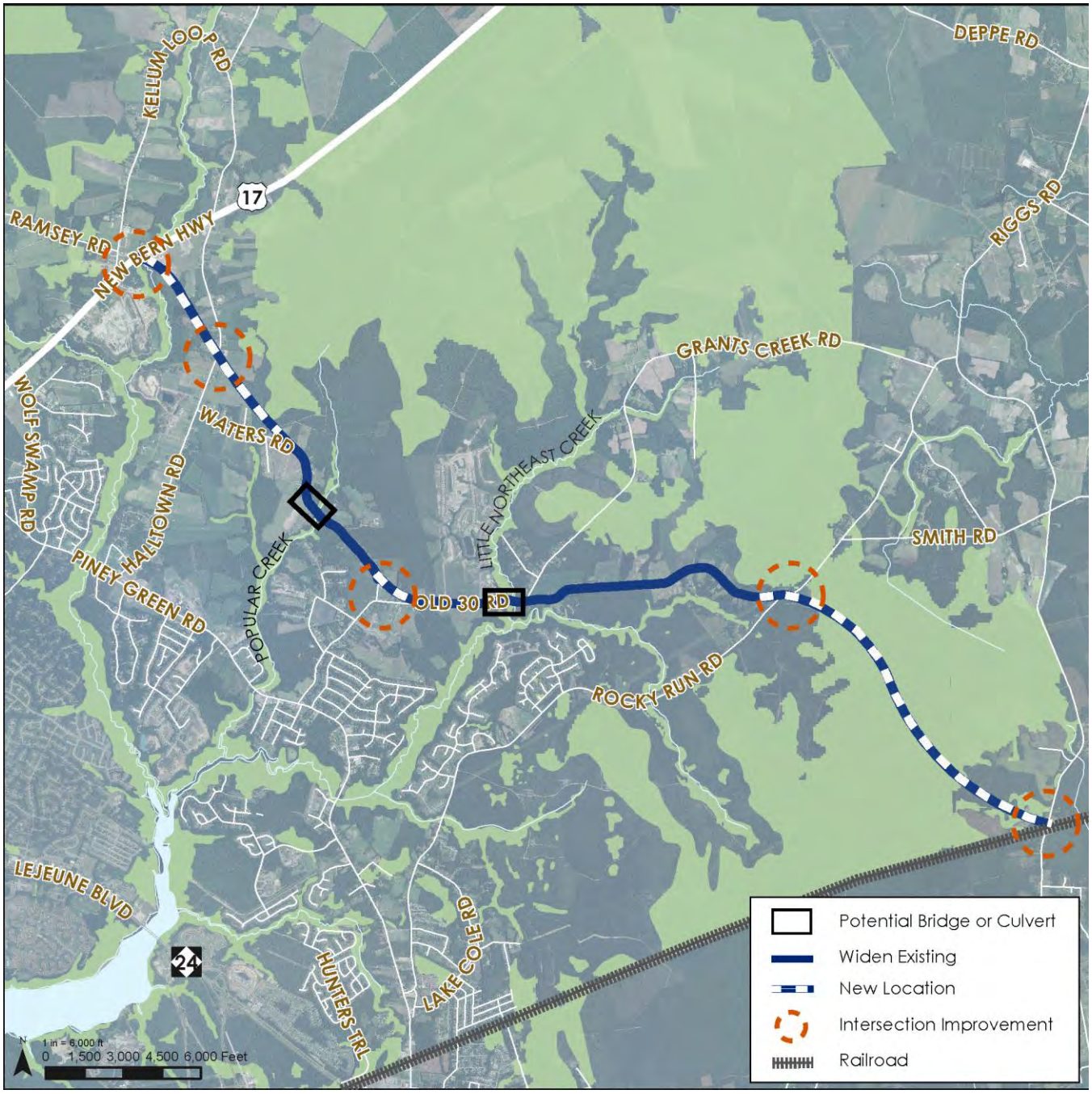
Related Project Sheets

- NC 24 at NC 172

Relevant Plans and Studies

- N/A

The construction of an alternative route in the northern portion of the MPO area includes improvements to Waters Road and Old 30 Road supplemented by the construction of facilities on new alignments. The exhibit below shows where improvements and new construction are necessary. It also emphasizes likely bridges or culverts and highlights key intersections.



US 17 Business (Marine Boulevard) – Johnson Boulevard to Gum Branch Road

US 17 Business (Marine Boulevard) travels through the heart of Jacksonville, serving numerous commercial areas and residential neighborhoods. The existing traffic volumes of approximately 30,000 vehicles per day are forecasted to grow to more than 41,000 by 2045. The future corridor will supplement the existing shared use path with a new trailhead associated with the construction of the proposed multimodal center. Safety concerns have been identified along the roadway, including a high existing crash rate. Improvements are already planned at the intersection of US 17 (Business) with Gum Branch Road/Bell Fork Road. As a result, a series of improvements focused on multimodal connectivity, safety, and predictability are recommended for this facility.

2045 Long Range Transportation Plan Recommendations

Roadway

- Construction of a median and improvements to the roadway and bridge over the New River
- Improvement at the intersection of US 17 Business and Gum Branch Road/Bell Fork Road (U-5728)

Bicycle

- Trailhead serving the existing shared use path

Pedestrian

- New sidewalk on east side to supplement existing sidewalk on the west side

Transit

- Construct multimodal center
- Potential service modifications following completion of the multimodal center

Mobility *(vehicular)*	Improvements to the US 17 Business corridor will enhance mobility by improving the capacity of the roadway through operational improvements, including a median.
Accessibility *(land use context)*	The US 17 Business corridor is built out with a combination of commercial business and residential neighborhoods, through roadway recommendations should enhance accessibility by improving traffic operations.
Safety *(crashes)*	The construction of a median and intersection improvements along the corridor are intended to limit conflict points and improve safety for all users.
Connectivity *(among modes)*	Once completed, the recommended improvements to the US 17 Business corridor will create a multimodal corridor anchored by the existing shared use path and the proposed multimodal center near the Bell Fork Road intersection.

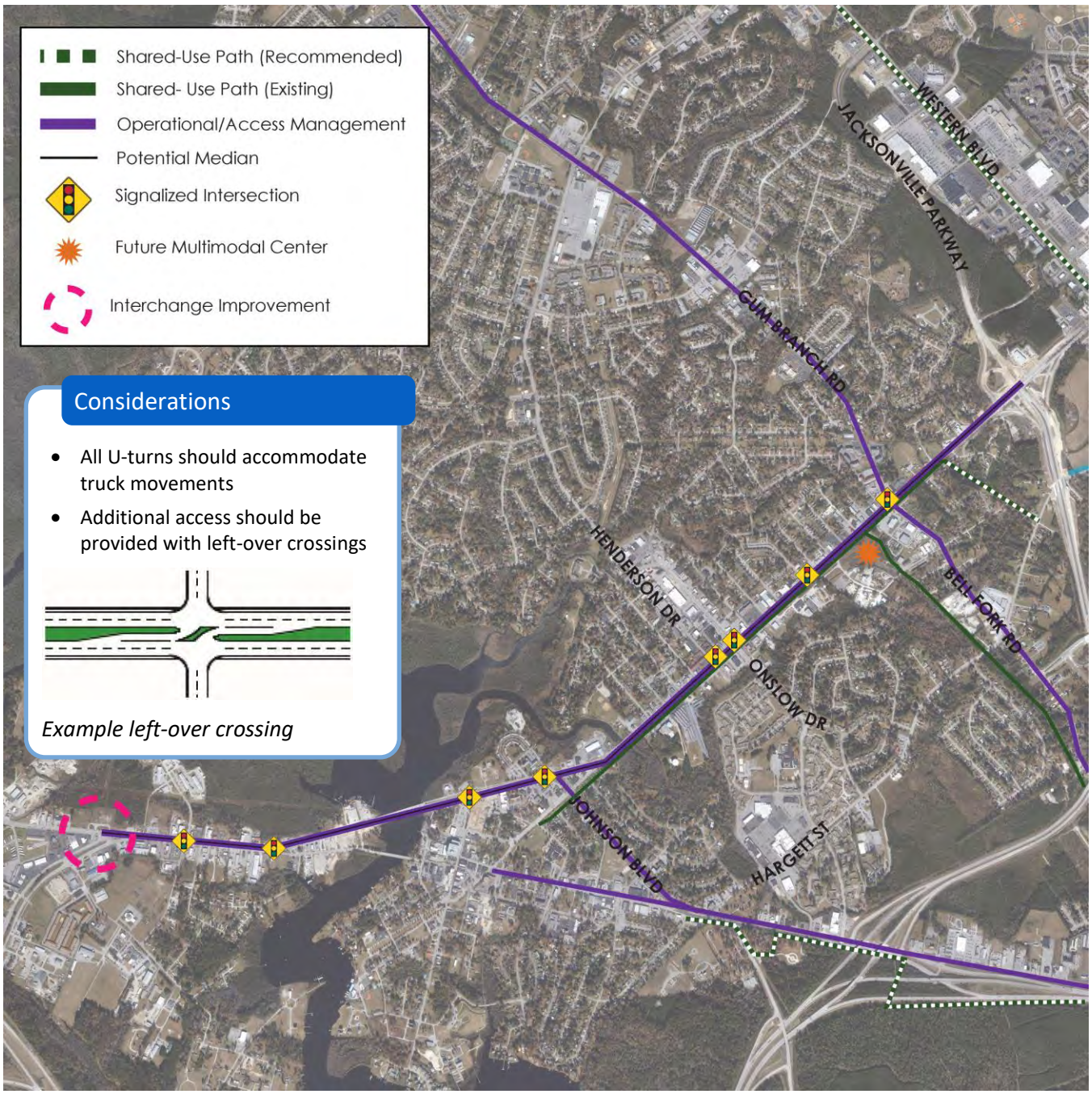
Related Project Sheets

- US 17 Business (Marine Blvd) / Gum Branch Rd / Bell Fork Rd
- Gum Branch Rd / Bell Fork Rd
- US 17 Business (Marine Blvd)

Relevant Plans and Studies

- Downtown Circulation Study

The exhibit below shows the multimodal features along the corridor as well as potential access considerations if a median is constructed.



US 17 (Marine Boulevard) – Gum Branch Road to Ramsey Road

US 17 (Marine Boulevard) is one of the heaviest traveled corridors in the Jacksonville region. With existing traffic volumes in excess of 30,000 vehicles per day in some locations, this corridor carries intra- and inter-regional traffic. Many of Jacksonville's commercial, civic, and educational destinations are accessed by this facility, such as the Coastal Carolina Community College, Onslow Memorial Hospital, Jacksonville Commons, and large retail sites along Western Boulevard. Heavy traffic volumes and large turning movements into commercial areas as well as intersecting roadways have created confusion among drivers and an intimidating setting for bicyclists and pedestrians. A combination of access management, connectivity, and intersection improvements will create a more cohesive corridor and encourage more intentional future growth.

2045 Long Range Transportation Plan Recommendations

Roadway

- Operational/Access Management from Western Blvd to Ramsey Rd
- Intersection improvements at Western Blvd, Piney Green Rd, Ramsey Rd (Kellum Loop Rd)

Bicycle

- Extension of the existing shared use path from Western Blvd to Piney Green Rd

Pedestrian

- New sidewalk from Gum Branch Rd to US 17 Bypass

Transit

- New route on Gum Branch Rd
- Potential service modifications following completion of the multimodal center

Mobility *(vehicular)*	US 17 is a strategic transportation corridor and one of the busiest highways in the Jacksonville region. These improvements will improve mobility for through traffic and local trips.
Accessibility *(land use context)*	Smaller connections such as the construction of Trade Street and Commerce Drive Extension will enhance accessibility to existing commercial areas and reduce congestion by providing alternative routes
Safety *(crashes)*	Safety conditions are expected to improve along US 17, particularly where interchanges will be constructed.
Connectivity *(among modes)*	Construction of a shared use path along Western Boulevard and anticipated transit improvements are likely to have the biggest impact on connectivity among travel modes.

Related Project Sheets

- US 17 (Marine Blvd) / SR 1406 (Piney Green Rd)
- US 17 (Marine Blvd) / NC 53 (Western Blvd)
- US 17 Business (Marine Blvd) / Gum Branch Rd / Bell Fork Rd
- NC 53 (Western Blvd)
- SR 2714 (Jacksonville Pkwy)
- Gum Branch Rd / Bell Fork Rd
- Commerce Dr Extension

Relevant Plans and Studies

- Western Boulevard Corridor Study

The exhibit below illustrates the various improvements recommended along and in the vicinity of US 17 northeast of Western Boulevard. These improvements aim to create a comprehensive and interconnected network that relieves pressure on US 17. Major infrastructure improvements (e.g. interchanges at Western Boulevard and Piney Green Road) are supplemented with strategic connections to the parallel network.

East Coast Greenway

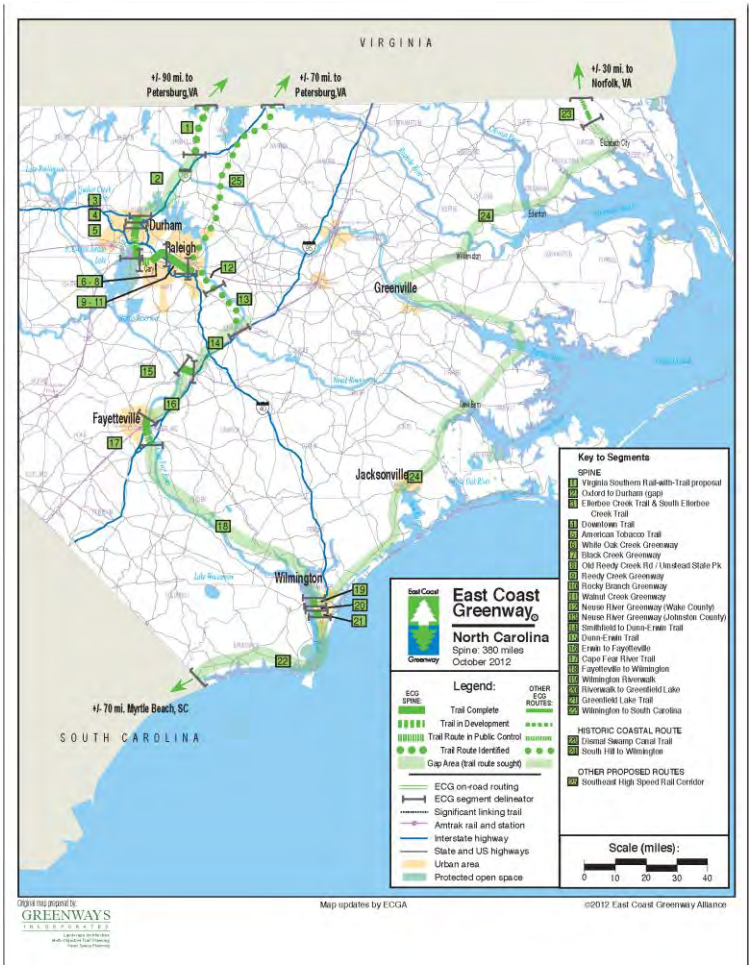
The East Coast Greenway is a long-distance, continuous, traffic-free route that aims to connect existing and planned shared-use paths from Maine to Florida. The East Coast Greenway, planned to lie largely within the public right-of-way, is still in development and aims to follow existing roadways where greenways have not yet been developed. Currently, the main East Coast Greenway route in North Carolina connects the Raleigh-Durham area with Fayetteville before running along the Cape Fear River to Wilmington and points south. An alternative Historic Coastal route connects the North Carolina coast, linking Greenville and Jacksonville before connecting to the main route near Wilmington. To promote better connections between state bike routes and the East Coast Greenway, NCDOT plans to re-route NC Bike Route 3 to closely follow the East Coast greenway into downtown Jacksonville while providing additional wayfinding between the two trails at locations where they cross.

East Coast Greenway in North Carolina

North Carolina's spine route for the East Coast Greenway measures approximately 370 miles. The route enters the state from the north in Granville County. The Triangle section of the spine route is 93% complete at 72 miles, relying on extensive segments of the American Tobacco Trail and the Neuse River Greenway.

Approximately 25% of the route is currently on trails with another 6% in development.

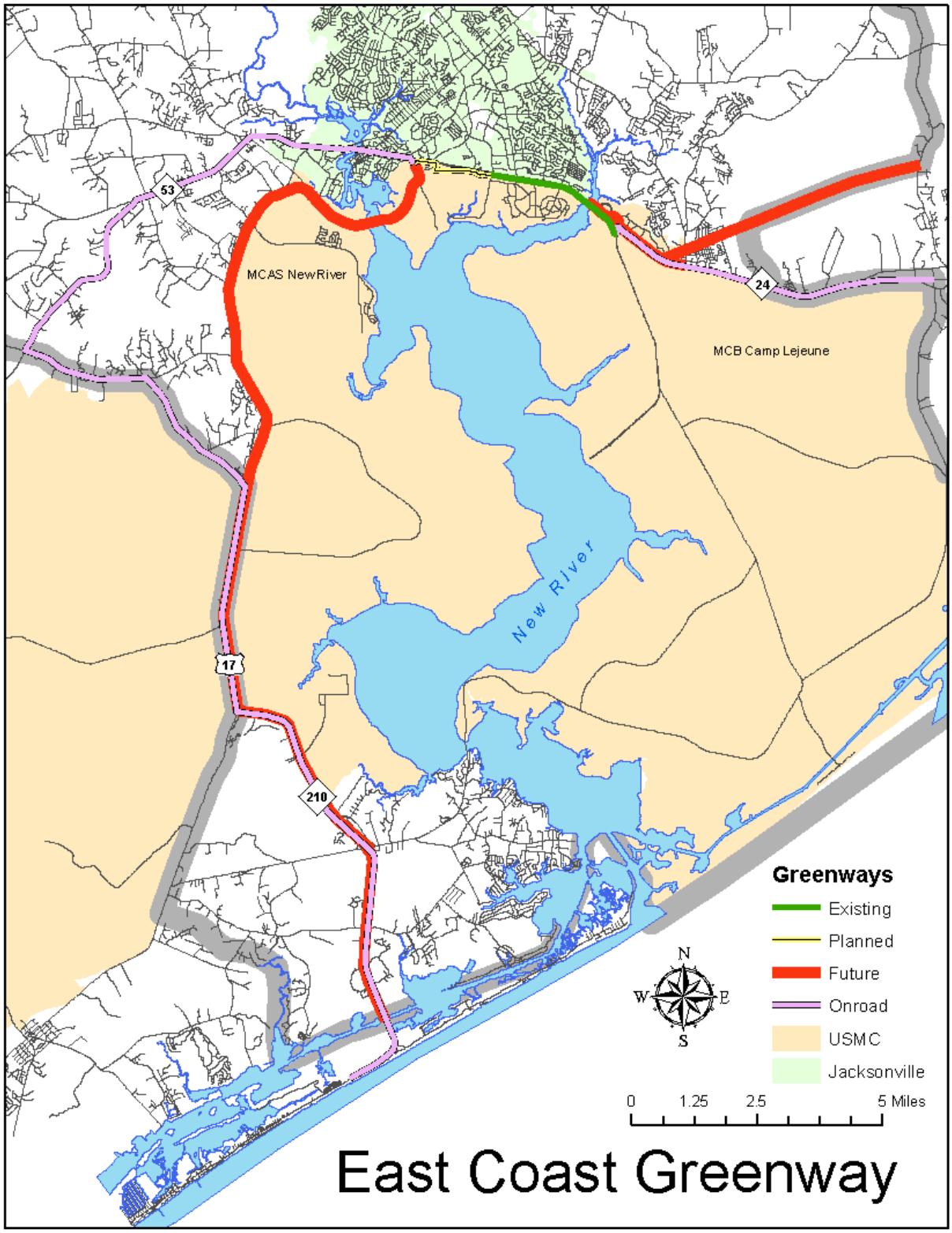
The Historic Coastal Route enters North Carolina in Camden County via the Dismal Swamp Canal Trail and travels through Elizabeth City, Edenton, Greenville, and New Bern before reaching Jacksonville. The map on the following page shows the route through the MPO area.



Until the off road trail network is completed, planners for the East Coast Greenway in North Carolina are trying to improve the on-road route using bike lanes, sharrows, and other amenities while collaborating with state agencies and organizations to move the trail forward as quickly as possible.

For More Information

www.greenway.org


53
MCAS NewRiver
24
MCB Camp Lejeune
New River
17
210
Greenways
Existing
Planned
Future
Onroad
USMC
Jacksonville
N
W
E
S
0
1.25
2.5
5 Miles
East Coast Greenway

Introduction

Project sheets have been created for the fiscally constrained roadway projects within the Jacksonville Urban Area MPO region to support the development of the 2045 Metropolitan Transportation Plan (MTP). Fiscally constrained projects include projects from the planning process and some were selected for submission to SPOT. Selected projects are included in the FY 2020-2029 TIP. Project sheets provide the locations, descriptions, and other pertinent information for each roadway project. Some TIP projects include more than one unique location or project type and are displayed on multiple project sheets. These project sheets are designed to be used by local governments and JUMPO to solicit funding and implementation of specific projects.

The probable costs shown on the project sheets include current year costs for the TIP projects and inflated year of expenditure costs for the SPOT and MTP projects. Five-year cost bands were identified for the projects that aren't fully funded within the TIP but are expected to be funded by the MTP's 2045 horizon year.

The sources of the data used to populate the operational characteristics were derived primarily from the 2016, 2040 and 2045 Jacksonville Regional Travel Demand Model, while the existing crash rates are based on NCDOT crash data spanning January 2018 to December 2109. Future crash rates were calculated using NCDOT's crash reduction factors updated in December 2014. Future operational characteristics represent operations along the roadway or at the intersection in 2045 with the improvements in place. The Regional Travel Demand Model is intended to be a tool for regional analysis. Travel Demand Model data at the corridor or intersection level should only be used for planning-level purposes. Other data sources include NCDOT Prioritization 5.0 project summaries, the TIP, ArcGIS data, and information provided by JUMPO. Operational data is not available for projects U-5787, H140368, and H141024 because the project roadways are classified as collectors and thus, are not included in the Travel Demand Model. Roadway capacities for these projects were derived from Florida DOT's LOS tables.

The location maps on the project sheets highlight intersection projects in green circles, interchange projects in red diamonds, operations projects in blue lines, widening projects in green, and new location projects in dashed orange.The project sheets also include icons indicating which JUMPO 2045 LRTP Guiding Statements are relevant to each project. The Guiding Statements were developed to provide direction for the plan and ultimately, the recommendations included in the plan. The Guiding Statements are:

Congestion Reduction

Multimodal Integration

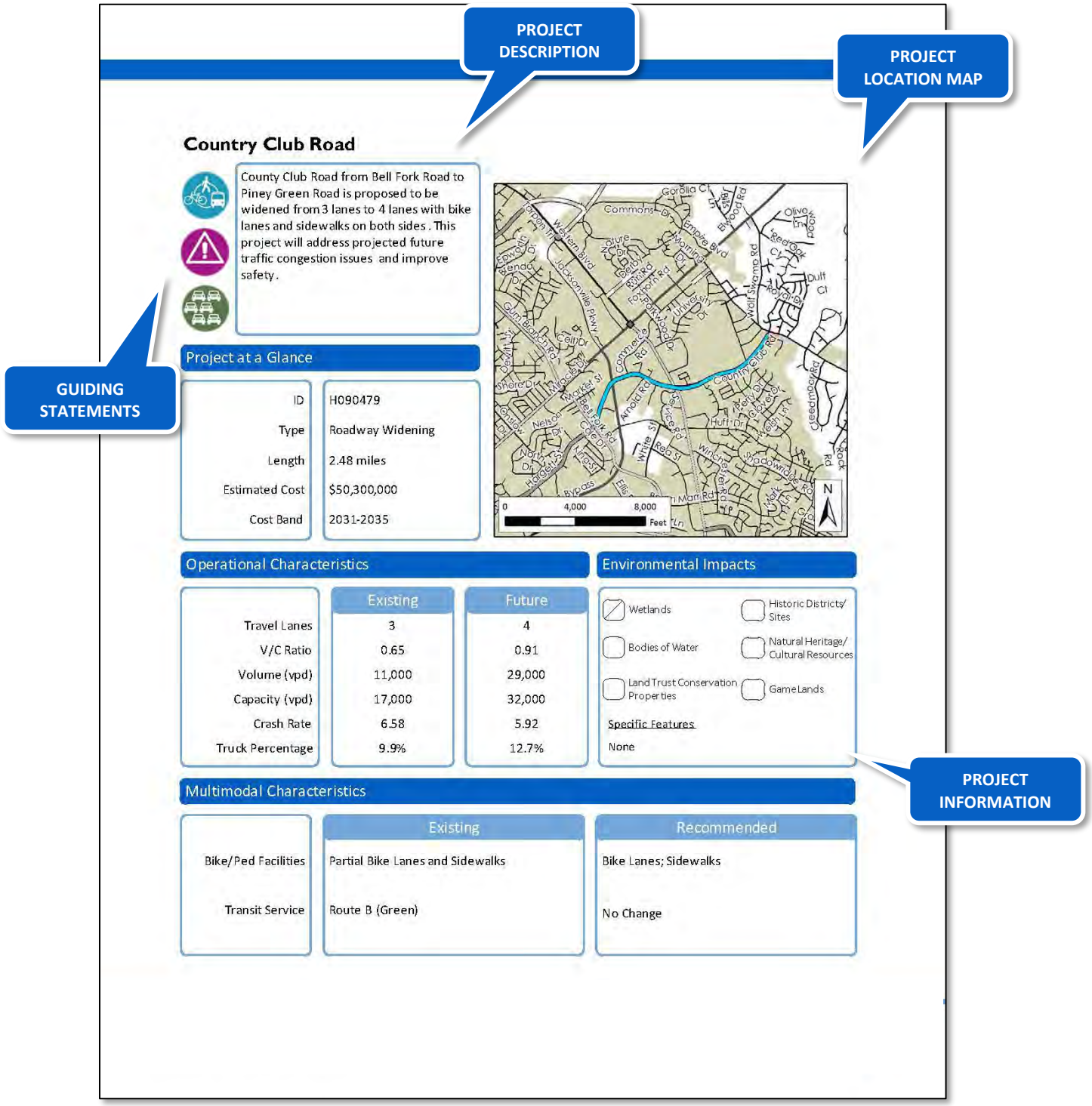
Economic Vitality

Safety & Security

Environmental Sustainability

System Preservation

An example project sheet is shown below with callout text describing each of the project sheet elements.



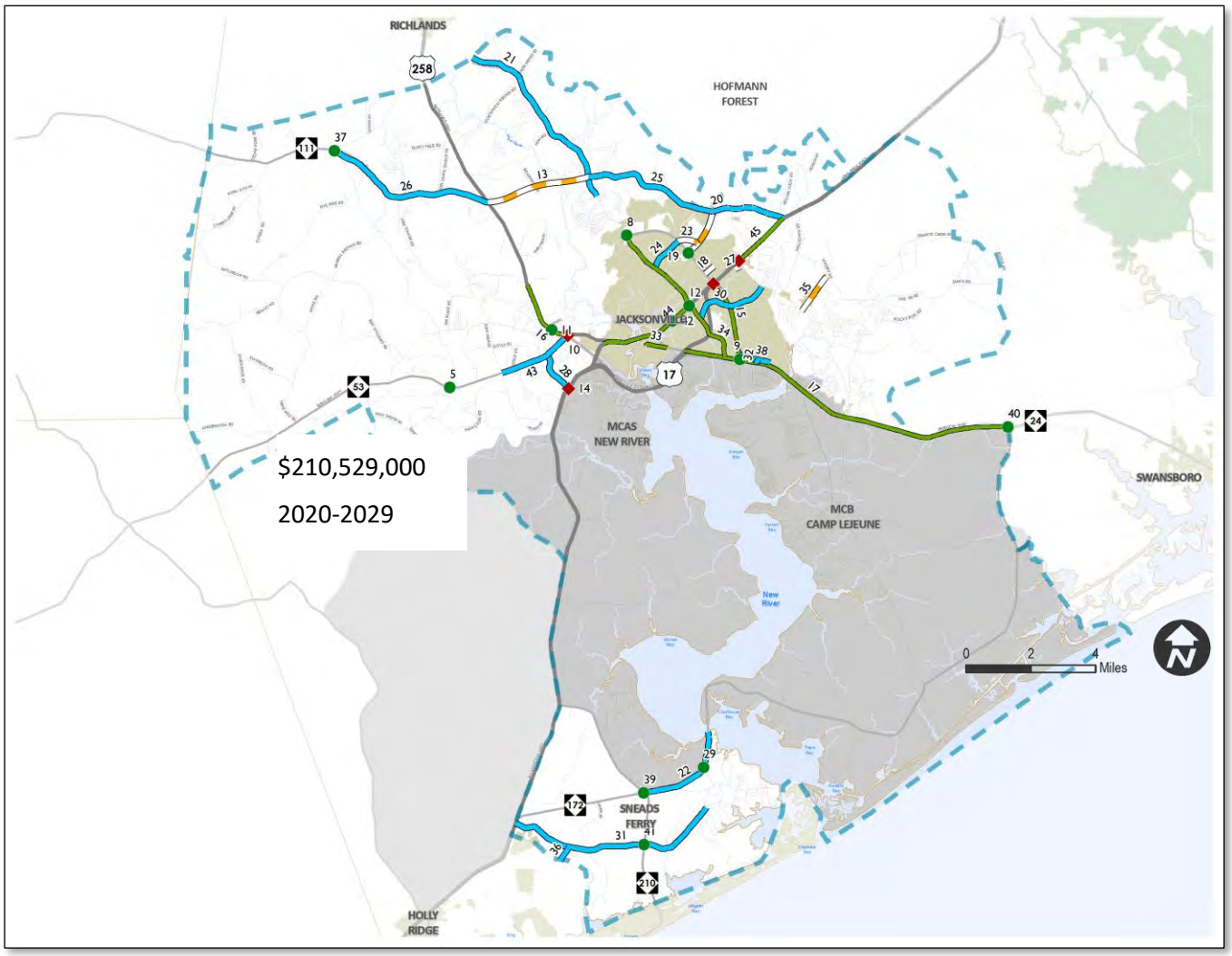
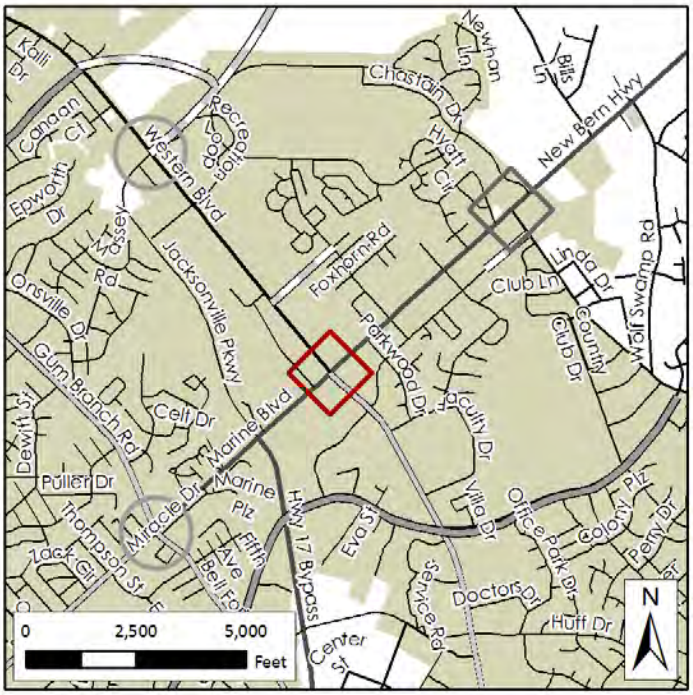


Figure 1. Project Sheet Page Key Map

US 17 (Marine Boulevard) at NC 53 (Western Boulevard)

The intersections of US 17 at Piney Green Road and NC 53 (Western Boulevard) are proposed to be improved. This project is listed as TIP project U-4007E and will reduce traffic congestion and improve roadway safety.



Project at a Glance

ID	U-4007E
Type	Intersection
Length	N/A
Estimated Cost	$210,529,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.73	1.04
Volume (vpd)	69,000	98,000
Capacity (vpd)	94,000	94,000
Crash Rate	0.60	0.35
Truck Percentage	4.8%	7.7%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

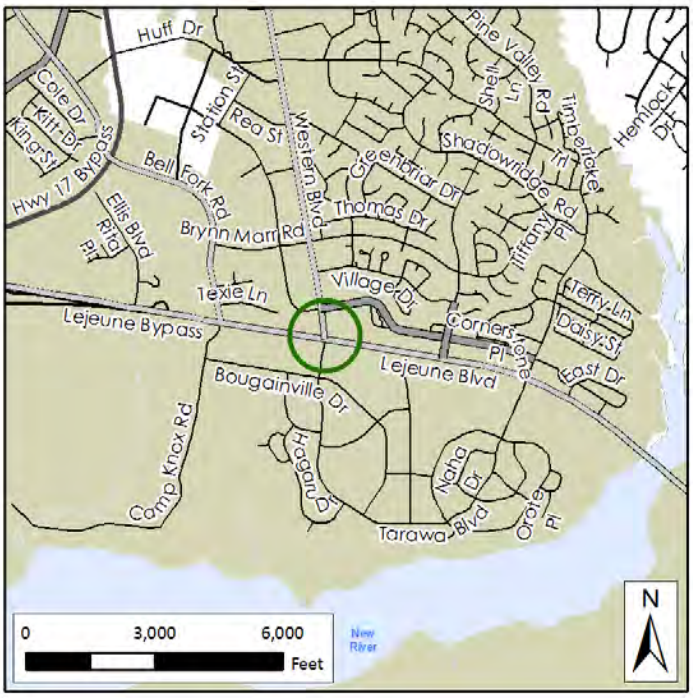
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Partial Sidewalk	Sidewalks; Shared Use Path, and Wide Outside Lanes
Transit Service	Green Route	No Change

NC 24 (Lejeune Boulevard) at NC 53 (Western Boulevard)

The intersection of NC 24 at NC 53 (Western Boulevard) is proposed to be improved. This project is listed as TIP project U-5508, and will address environmental constraints through drainage improvements as well as reducing traffic congestion.



Project at a Glance

ID	U-5508
Type	Intersection
Length	N/A
Estimated Cost	$3,012,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	6	6
V/C Ratio	0.59	0.49
Volume (vpd)	55,000	46,000
Capacity (vpd)	94,000	94,000
Crash Rate	0.14	N/A
Truck Percentage	6.2%	9.7%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Partial Sidewalk; Shared Use Path	Sidewalk; Shared Use Path; Wide Outside Lane
Transit Service	Green and Scarlet Routes	No Change

NC 24 at US 258 / NC 53

The intersection of NC 24 at US 258 / NC 53 is proposed to be upgraded to an interchange. This project is listed as TIP project U-5716 and will reduce traffic congestion and improve roadway safety.

Project at a Glance

ID	U-5716
Type	Interchange
Length	N/A
Estimated Cost	$49,150,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.56	0.83
Volume (vpd)	44,000	65,000
Capacity (vpd)	79,000	79,000
Crash Rate	0.13	0.07
Truck Percentage	4.0%	7.7%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

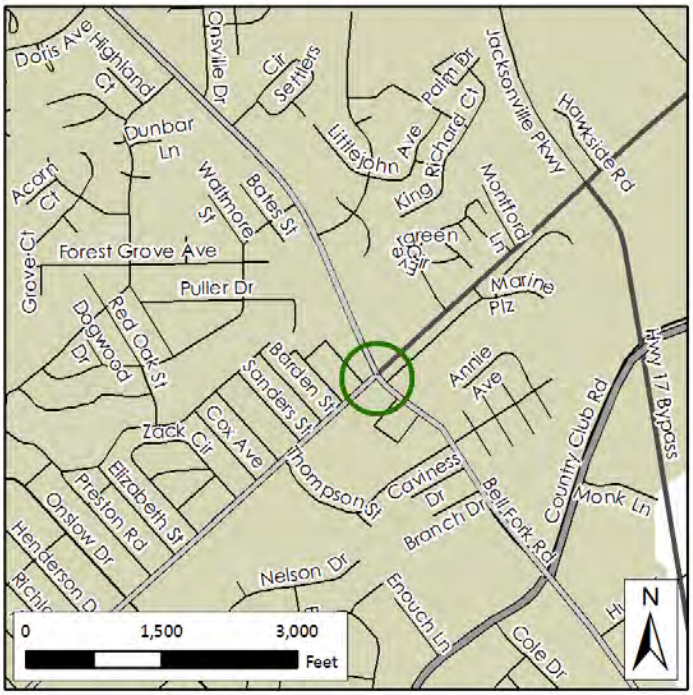
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	None
Transit Service	None	None

US 17 Business (Marine Boulevard) at Gum Branch Road / Bell Fork Road

The intersection of US 17 Business at Gum Branch Road / Bell Fork Road is proposed to be improved. This project is listed as TIP project U-5728 and will reduce traffic congestion and improve roadway safety.



Project at a Glance

ID	U-5728
Type	Intersection
Length	N/A
Estimated Cost	$7,201,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.46	0.77
Volume (vpd)	36,000	61,000
Capacity (vpd)	79,000	79,000
Crash Rate	0.28	0.25
Truck Percentage	5.8%	8.9%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

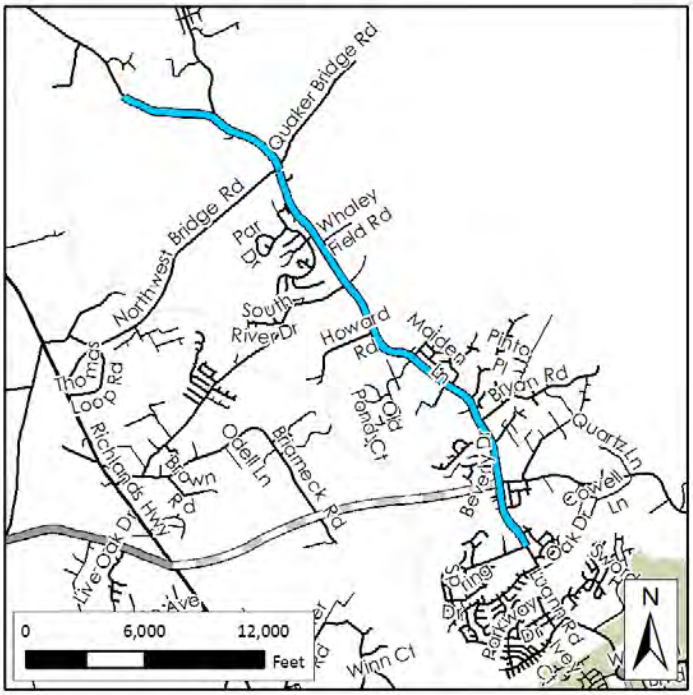
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Partial Sidewalk; Shared Use Path	Sidewalk; Bicycle Lane; Wide Outside Lane
Transit Service	None	No Change

SR 1308 (Gum Branch Road)

Gum Branch Road from Summersill Road to UAB is proposed to be widened from 2 lanes to 4 lanes. This project is listed as TIP project U-5793 and will reduce traffic congestion. TIP project U-4906 is a fiscal year 2015 project along the same extent as U-5793 that will include shoulder improvements and some intersection safety modifications.



Project at a Glance

ID	U-5793
Type	Roadway Widening
Length	6.21 miles
Estimated Cost	$62,510,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	2	4
V/C Ratio	0.68	0.73
Volume (vpd)	15,000	30,000
Capacity (vpd)	22,000	41,000
Crash Rate	2.09	1.88
Truck Percentage	2.6%	4.7%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

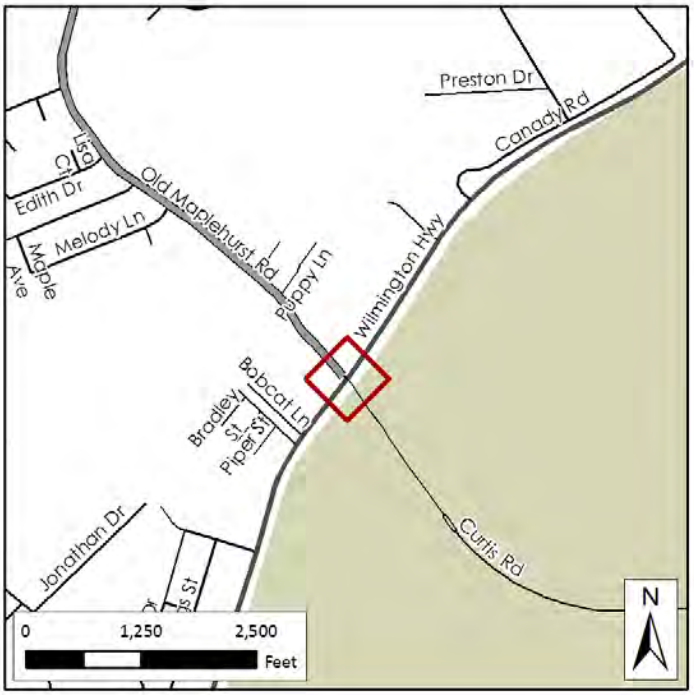
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Wide Outside Lanes
Transit Service	None	None

US 17 (Wilmington Highway) at Old Maplehurst Road

The intersection of US 17 at MCAS New River / Old Maplehurst Road is proposed to be upgraded to an interchange. This project is listed as TIP project U-5735 and will help alleviate future traffic congestion and improve roadway safety.



Project at a Glance

ID	U-5735
Type	Interchange
Length	N/A
Estimated Cost	$27,720,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.59	1.15
Volume (vpd)	40,000	78,000
Capacity (vpd)	68,000	68,000
Crash Rate	0.34	0.20
Truck Percentage	4.9%	8.5%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	None
Transit Service	None	No Change

NC 53 (Western Boulevard)

Access management improvements are proposed for NC 53 (Western Boulevard) from US 17 to NC 24. This project is listed as TIP project U-5736 and will improve roadway safety and travel predictability.

Project at a Glance

ID	U-5736
Type	Roadway Operations
Length	2.56 miles
Estimated Cost	$30,560,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	6	6
V/C Ratio	0.46	0.60
Volume (vpd)	30,000	39,000
Capacity (vpd)	65,000	65,000
Crash Rate	9.90	7.43
Truck Percentage	7.6%	10.5%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

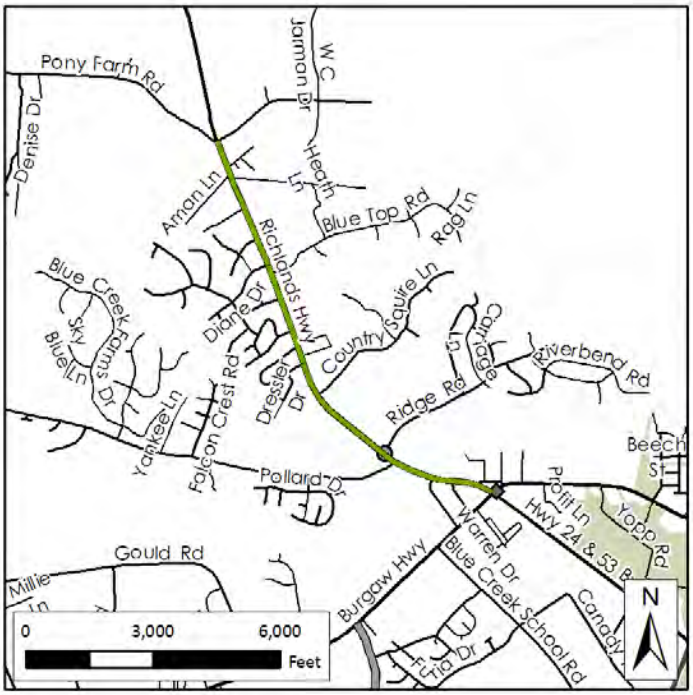
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Partial Sidewalks	Greenway (Sidepath) East Side; Sidewalk West Side; Pedestrian Signals; Pedestrian Lighting
Transit Service	None	None

US 258 (Richlands Highway)

A superstreet configuration is proposed for US 258 from Pony Farm Road to NC 53. This project is listed as TIP project U-5739 and will improve traffic flow and roadway safety.



Project at a Glance

ID	U-5739
Type	Roadway Operations
Length	2.16 miles
Estimated Cost	$14,614,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.56	0.80
Volume (vpd)	28,000	40,000
Capacity (vpd)	50,000	50,000
Crash Rate	3.27	1.77
Truck Percentage	3.3%	6.1%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

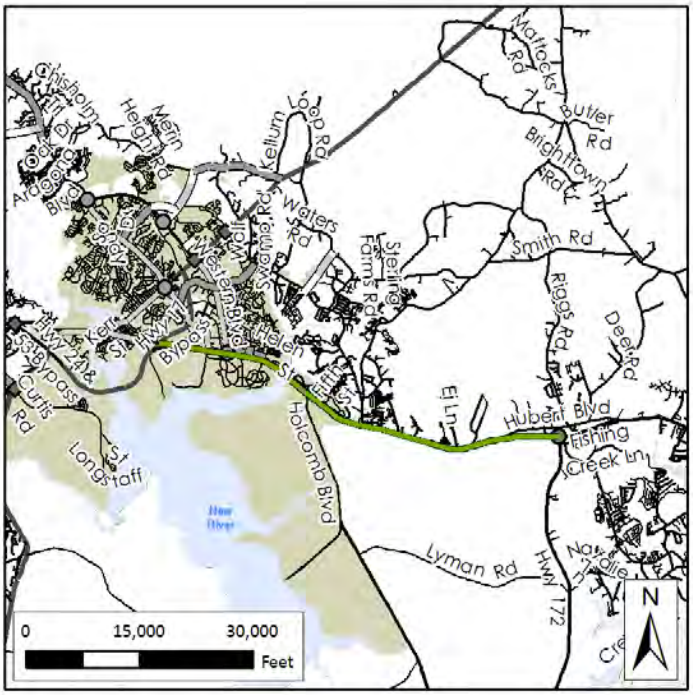
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	None
Transit Service	None	None

NC 24 (Lejeune Boulevard)

Access management improvements are proposed for NC 24 from NC 24 Business to the eastern JUMPO boundary. This project is listed as TIP project U-5741 and will improve roadway safety and travel predictability.



Project at a Glance

ID	U-5741
Type	Roadway Operations
Length	10.72 miles
Estimated Cost	$63,200,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.66	0.90
Volume (vpd)	19,000	26,000
Capacity (vpd)	29,000	26,000
Crash Rate	3.97	2.97
Truck Percentage	4.8%	8.2%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

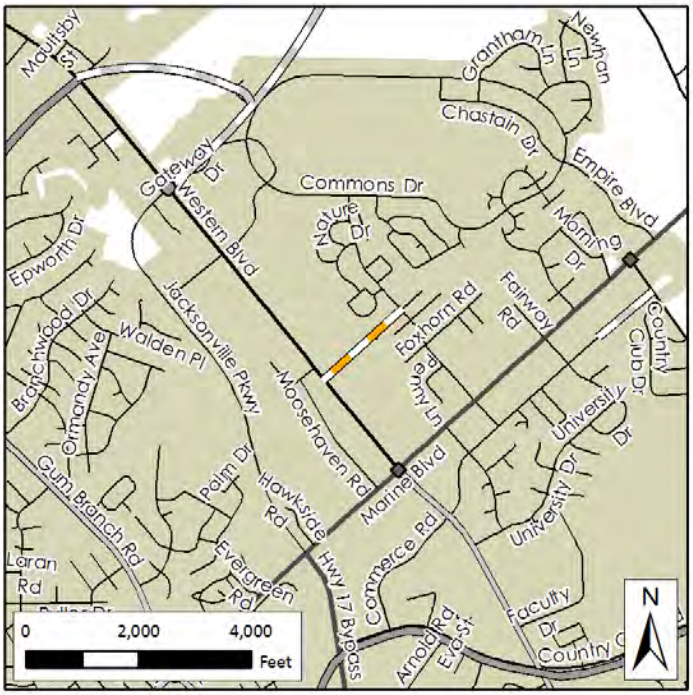
Lejune Memorial Gardens

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Partial Shared-Use Path	Shared-Use Path; Sidewalks
Transit Service	Route B (Green); Scarlet Route	No Change

SR 2715 (Trade Street)

A new roadway, Trade Street, is proposed to be constructed from NC 53 (Western Boulevard) to McDaniel Street. This project is listed as TIP project U-5787 and will reduce traffic congestion on surrounding roadways and improve network connectivity.



Project at a Glance

ID	U-5787
Type	Roadway New Location
Length	0.36 miles
Estimated Cost	$4,100,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	N/A	2
V/C Ratio	N/A	N/A
Volume (vpd)	N/A	N/A
Capacity (vpd)	N/A	15,000
Crash Rate	N/A	N/A
Truck Percentage	N/A	N/A

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

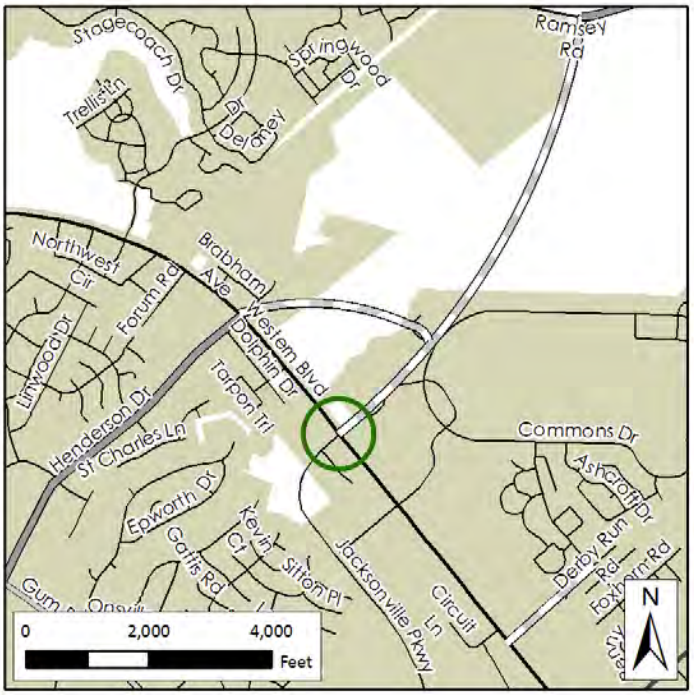
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	None
Transit Service	None	None

NC 53 (Western Boulevard) at Jacksonville Parkway

The intersection of NC 53 (Western Boulevard) at Jacksonville Parkway is proposed to be improved. This project is listed as TIP project U-5789 and will alleviate projected future traffic congestion and improve roadway safety.



Project at a Glance

ID	U-5789
Type	Intersection
Length	N/A
Estimated Cost	$6,000,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.74	0.78
Volume (vpd)	50,000	53,000
Capacity (vpd)	68,000	68,000
Crash Rate	0.01	0.01
Truck Percentage	4.6%	7.2%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

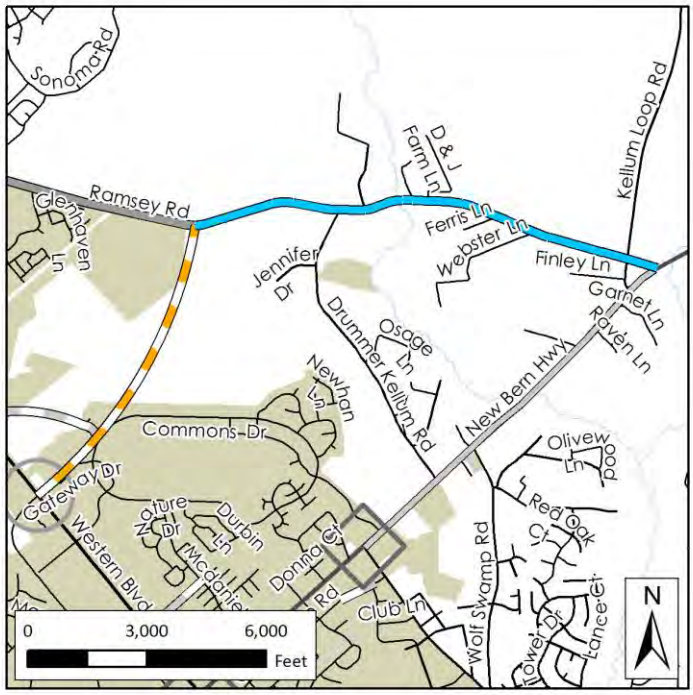
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Partial Sidewalk	Sidewalks; Shared Use Path; Bicycle Lane; Wide Outside Lane
Transit Service	Purple Route	No Change

SR 2714 (Jacksonville Parkway)

An extension of Jacksonville Parkway is proposed, consisting of a new location facility from NC 53 (Western Boulevard) to Ramsey Road and widening Ramsey Road from 2 lanes to 4 lanes from the new location to US 17. The project is listed as TIP project U-5791 and is intended to reduce traffic congestion and improve connectivity.



Project at a Glance

ID	U-5791
Type	New Location / Widening
Length	1.52 / 2.28 miles
Estimated Cost	$49,400,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	N/A / 2	2 / 4
V/C Ratio	N/A / 0.19	0.25 / 0.39
Volume (vpd)	N/A / 3,000	4,000 / 11,000
Capacity (vpd)	N/A / 16,000	16,000 / 28,000
Crash Rate	N/A / 8.07	N/A / 7.27
Truck Percentage	N/A / 1.6%	4.6% / 3.1%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

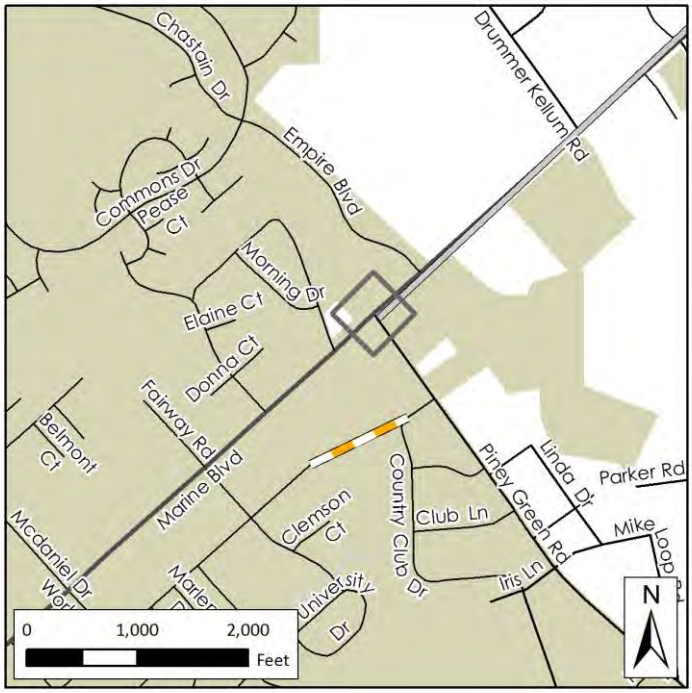
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Bike Lanes
Transit Service	None	None

Commerce Drive Extension

A new roadway, Commerce Drive Extension, is proposed to be constructed from its current northern terminus to Country Club Drive. This project will reduce traffic congestion and improve network connectivity. The proposed roadway is classified as a collector and is not included in the Regional Travel Demand Model.



Project at a Glance

ID	U-5878
Type	Roadway New Location
Length	0.24 miles
Estimated Cost	$5,600,000
Cost Band	2020-2029

Operational Characteristics

	Existing	Future
Travel Lanes	N/A	2
V/C Ratio	N/A	N/A
Volume (vpd)	N/A	N/A
Capacity (vpd)	N/A	15,000
Crash Rate	N/A	N/A
Truck Percentage	N/A	N/A

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Bike Lanes; Sidewalks
Transit Service	None	None

NC 111 (Catherine Lake Road)

NC 111 is proposed to be extended from US 258 to Gum Branch Road at Ramsey Road. This project is listed as TIP project U-5733 and will reduce traffic congestion and provide better access on surrounding roadways.

Project at a Glance

ID	U-5733
Type	Roadway New Location
Length	3.23 miles
Estimated Cost	$30,204,000
Cost Band	2030-2035

Operational Characteristics

	Existing	Future
Travel Lanes	N/A	2
V/C Ratio	N/A	0.68
Volume (vpd)	N/A	15,000
Capacity (vpd)	N/A	22,000
Crash Rate	N/A	N/A
Truck Percentage	N/A	5.7%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

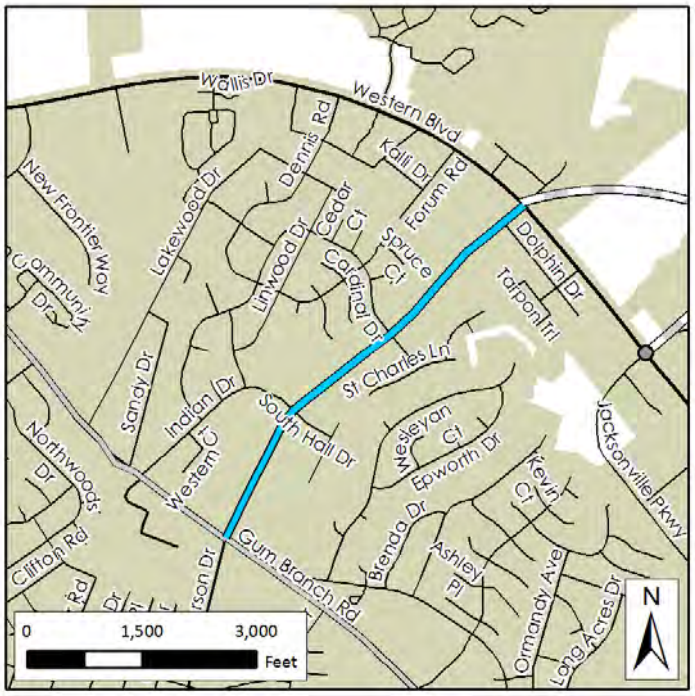
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	None
Transit Service	None	None

Henderson Drive

Henderson Drive from Gum Branch Road to Western Boulevard is proposed to be widened from 3 lanes to 4 lanes with bike lanes and sidewalks on both sides. This project will improve corridor safety and enhance multimodal mobility.



Project at a Glance

ID	U-5903
Type	Roadway Widening
Length	1.12 miles
Estimated Cost	$17,200,000
Cost Band	2030-2035

Operational Characteristics

	Existing	Future
Travel Lanes	3	4
V/C Ratio	0.55	0.42
Volume (vpd)	11,000	15,000
Capacity (vpd)	20,000	36,000
Crash Rate	11.00	9.90
Truck Percentage	5.1%	4.0%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

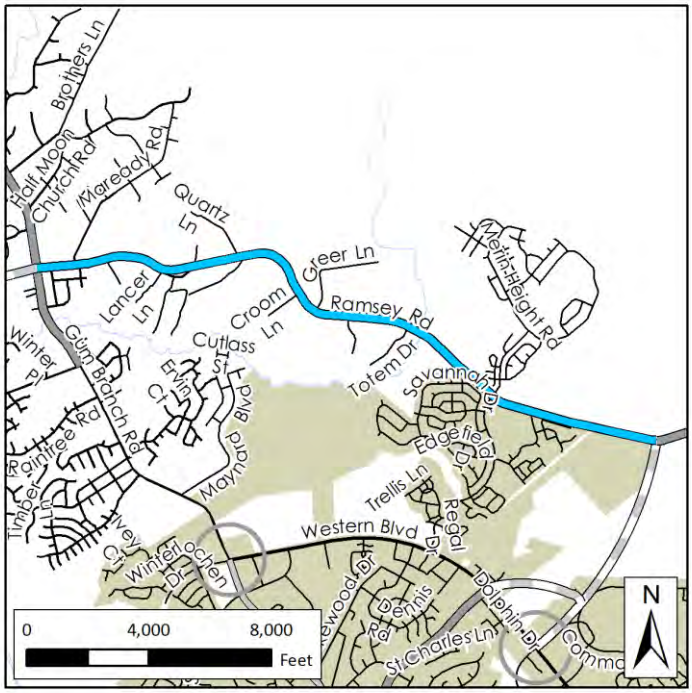
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Sidewalk on East Side	Bike Lanes; Sidewalk on West Side
Transit Service	Route A (Purple)	No Change

Ramsey Road

Ramsey Road from Gum Branch Road to Jacksonville Parkway Extension is proposed to be widened from 2 lanes to 4 lanes with a median and wide outside lanes. This project will reduce traffic congestion and improve safety.



Project at a Glance

ID	H111207
Type	Roadway Widening
Length	4.27 miles
Estimated Cost	$109,500,000
Cost Band	2030-2035

Operational Characteristics

	Existing	Future
Travel Lanes	2	4
V/C Ratio	0.27	0.30
Volume (vpd)	4,000	13,000
Capacity (vpd)	15,000	43,000
Crash Rate	1.89	1.70
Truck Percentage	1.8%	5.2%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

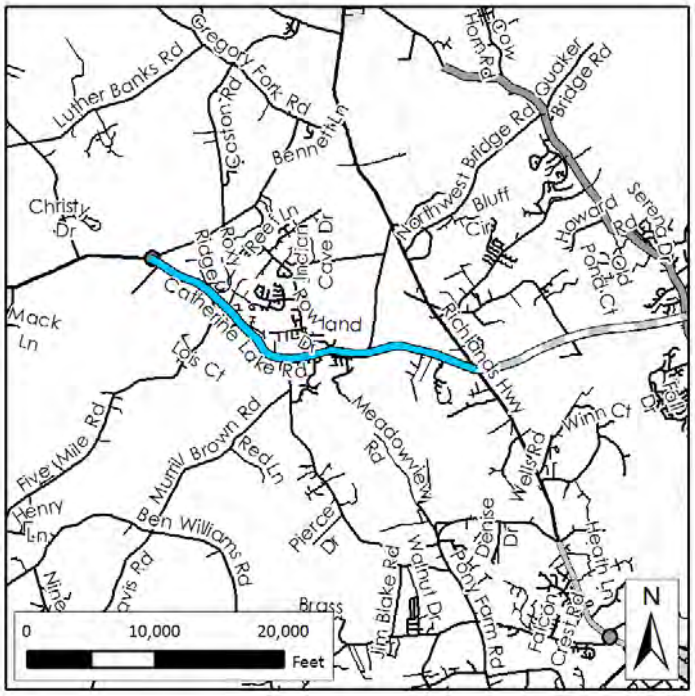
Half Moon Creek

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Bike Lanes or Paved Shoulders
Transit Service	None	None

NC 111

NC 111 from US 258 to Airport Road is proposed to be widened from 2 lanes to 3 lanes. This project will improve roadway safety and reduce traffic congestion by removing left turning traffic from the travel lanes.



Project at a Glance

ID	H140357
Type	Roadway Widening
Length	5.44 miles
Estimated Cost	$32,900,000
Cost Band	2030-2035

Operational Characteristics

	Existing	Future
Travel Lanes	2	3
V/C Ratio	0.36	0.64
Volume (vpd)	8,000	14,000
Capacity (vpd)	22,000	22,000
Crash Rate	4.89	4.40
Truck Percentage	2.1%	4.5%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

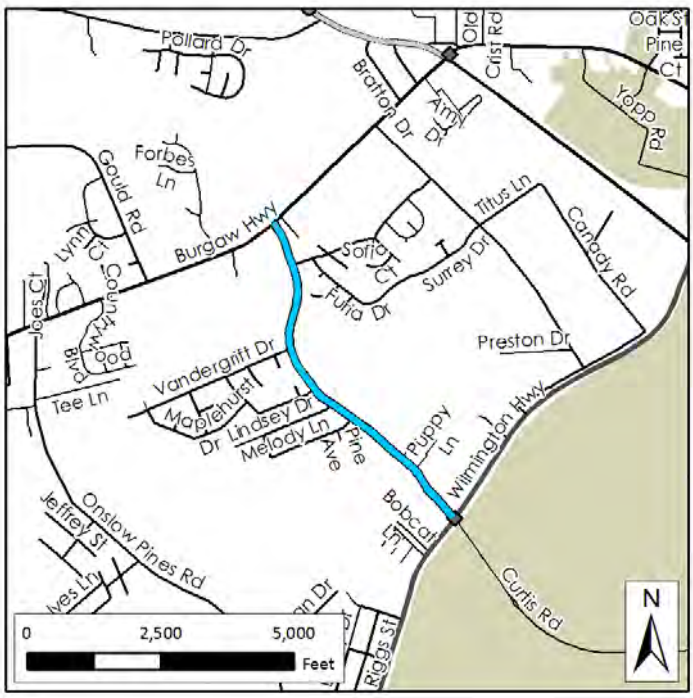
Catherine Lake Historic District

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Paved Shoulders
Transit Service	None	None

Old Maplehurst Road

Old Maplehurst Road from US 17 to NC 53 is proposed to be widened from 2 lanes to 4 lanes. This project will alleviate future projected traffic congestion and improve corridor safety.



Project at a Glance

ID	H140427
Type	Roadway Widening
Length	1.31 miles
Estimated Cost	$8,800,000
Cost Band	2030-2035

Operational Characteristics

	Existing	Future
Travel Lanes	2	4
V/C Ratio	0.44	0.48
Volume (vpd)	7,000	15,000
Capacity (vpd)	16,000	31,000
Crash Rate	6.86	6.17
Truck Percentage	3.1%	5.9%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Wide Outside Lanes; Sidewalks
Transit Service	None	None

NC 172 at Sneads Ferry Road

The intersection of Sneads Ferry Road at NC 172 is proposed to be realigned. This project, included in the Sneads Ferry Community Plan, will improve safety.

Project at a Glance

ID	S-1
Type	Intersection
Length	N/A
Estimated Cost	$1,500,000
Cost Band	2030-2035

Operational Characteristics

	Existing	Future
Travel Lanes	2	2
V/C Ratio	0.38	1.02
Volume (vpd)	11,000	29,500
Capacity (vpd)	29,000	29,000
Crash Rate	0.23	0.14
Truck Percentage	2.5%	5.0%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

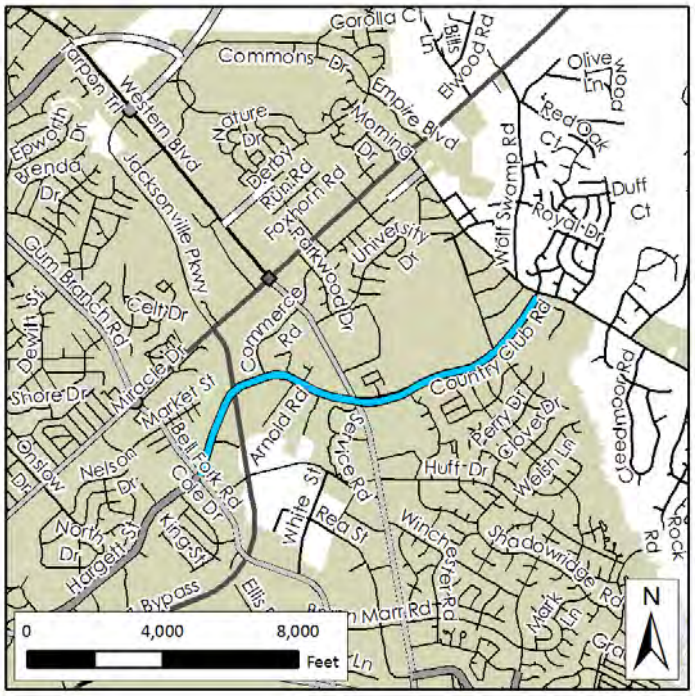
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Sidewalk; Paved Shoulders
Transit Service	None	None

Country Club Road

County Club Road from Bell Fork Road to Piney Green Road is proposed to be widened from 3 lanes to 4 lanes with bike lanes and sidewalks on both sides. This project will address projected future traffic congestion issues and improve safety.



Project at a Glance

ID	H090479
Type	Roadway Widening
Length	2.48 miles
Estimated Cost	$50,300,000
Cost Band	2040-2045

Operational Characteristics

	Existing	Future
Travel Lanes	3	4
V/C Ratio	0.65	0.91
Volume (vpd)	11,000	29,000
Capacity (vpd)	17,000	32,000
Crash Rate	6.58	5.92
Truck Percentage	9.9%	12.7%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Partial Bike Lanes and Sidewalks	Bike Lanes; Sidewalks
Transit Service	Route B (Green)	No Change

Old Folkstone Road

Old Folkstone Road from US 17 to Ennett Lane is proposed to be widened from 2 lanes to 3 lanes with sidewalks. This project, included in the Sneads Ferry Community Plan, will improve traffic flow and help improve corridor safety.

Project at a Glance

ID	H090788
Type	Roadway Widening
Length	6.74 miles
Estimated Cost	$37,000,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	2	3
V/C Ratio	0.21	0.57
Volume (vpd)	3,000	8,000
Capacity (vpd)	14,000	14,000
Crash Rate	5.26	3.90
Truck Percentage	1.3%	1.6%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Wide Outside Lanes; Sidewalks
Transit Service	None	None

Pine Valley Road

Pine Valley Road from NC 24 to Liberty Drive is proposed to be widened from 2 lanes to 4 lanes. This project will improve safety along the corridor and will accommodate a forecasted increase in truck traffic.

Project at a Glance

ID	H090885
Type	Roadway Widening
Length	0.26 miles
Estimated Cost	$6,000,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	2	4
V/C Ratio	0.44	0.31
Volume (vpd)	7,000	10,000
Capacity (vpd)	16,000	32,000
Crash Rate	7.22	6.50
Truck Percentage	3.5%	10.1%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Sidewalk on East Side	Sidewalk on Both Sides
Transit Service	Route B (Green)	No Change

New Bridge Street

New Bridge Street from Hargett Street to Court Street is proposed to be streetscaped. This project will improve multimodal mobility and beautify the roadway.

Project at a Glance

ID	H090912
Type	Roadway Operations
Length	0.69 miles
Estimated Cost	$11,500,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	4	2
V/C Ratio	0.15	0.45
Volume (vpd)	3,000	5,000
Capacity (vpd)	20,000	11,000
Crash Rate	1.06	0.75
Truck Percentage	5.9%	11.6%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

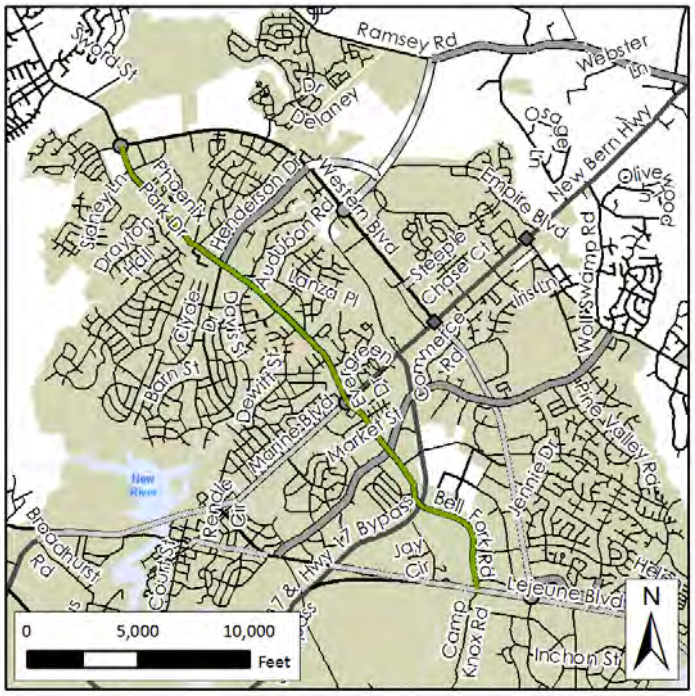
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Sidewalks	Sidewalks; Crosswalks; Pedestrian Signals
Transit Service	Route A (Purple)	No Change

Gum Branch Road / Bell Fork Road

Access management and the construction of a median is proposed for Gum Branch Road / Bell Fork Road from Western Boulevard to NC 24. This project will improve traffic flow and predictability and improve safety.



Project at a Glance

ID	H090913
Type	Roadway Operations
Length	5.07 miles
Estimated Cost	$60,800,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.36	0.67
Volume (vpd)	13,000	24,000
Capacity (vpd)	36,000	36,000
Crash Rate	5.92	4.44
Truck Percentage	4.7%	8.6%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

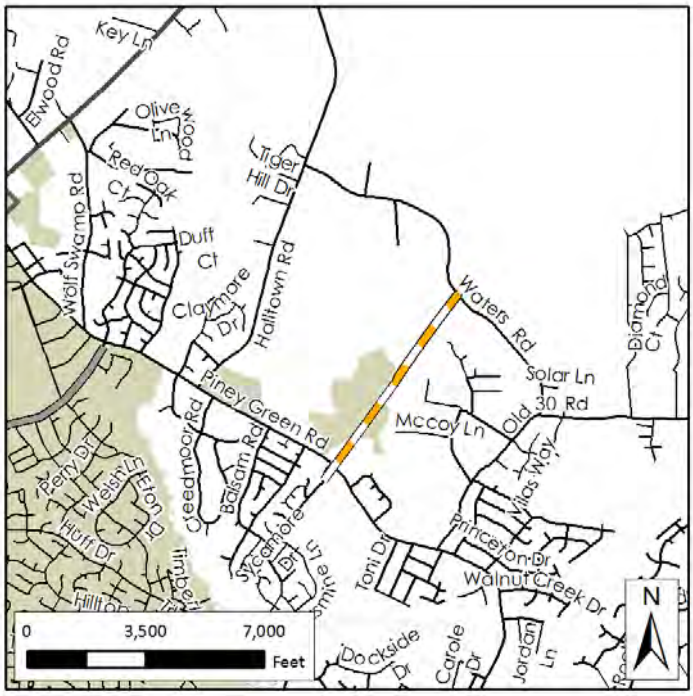
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Wide Outside Lane West Side; Bike Lane East Side; Sidewalks
Transit Service	None	None

Hemlock Drive Extension

A new roadway, Hemlock Drive Extension, is proposed to be constructed from Piney Green Road to Waters Street. This project will reduce traffic congestion on surrounding roadways and enhance network connectivity.



Project at a Glance

ID	H111203
Type	Roadway New Location
Length	1.28 miles
Estimated Cost	$42,700,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	N/A	4
V/C Ratio	N/A	0.24
Volume (vpd)	N/A	7,000
Capacity (vpd)	N/A	29,000
Crash Rate	N/A	N/A
Truck Percentage	N/A	0.0%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

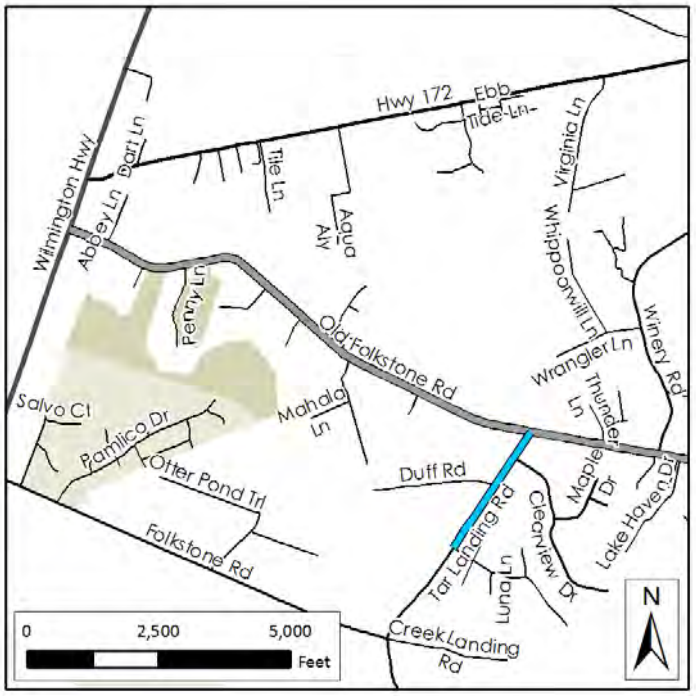
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	None
Transit Service	None	None

Tar Landing Road

Tar Landing Road from Old Folkstone Road to Holly Ridge Road is proposed to be widened from 2 10-foot lanes to 2 12-foot lanes with paved shoulders. This project will improve roadway safety and bring the road up to current design standards.



Project at a Glance

ID	H140111
Type	Roadway Widening
Length	0.50 miles
Estimated Cost	$2,700,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	2	2
V/C Ratio	0.07	0.29
Volume (vpd)	1,000	4,000
Capacity (vpd)	14,000	14,000
Crash Rate	1.79	1.32
Truck Percentage	1.8%	2.0%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

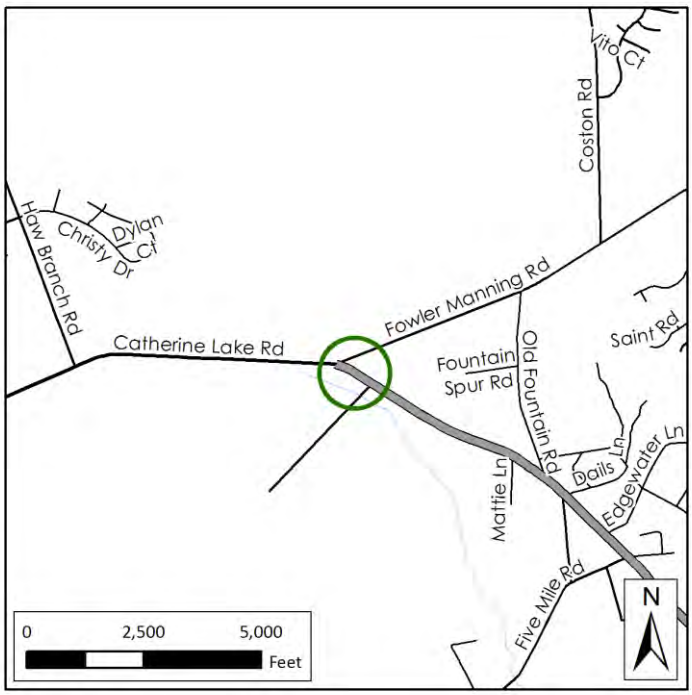
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Paved Shoulders
Transit Service	None	None

NC 111 at Fowler Manning Drive

The intersection of NC 111 at Fowler Manning Road is proposed to be realigned with Airport Road. This project will improve roadway safety by reducing the approach angle of Fowler Manning Road.



Project at a Glance

ID	H140414
Type	Intersection
Length	N/A
Estimated Cost	$1,500,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	2	2
V/C Ratio	0.26	0.39
Volume (vpd)	6,000	9,000
Capacity (vpd)	23,000	23,000
Crash Rate	0.40	0.24
Truck Percentage	1.4%	2.8%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Paved Shoulders
Transit Service	None	None

Liberty Road

Liberty Road from Western Boulevard to Corbin Street is proposed to be widened from 2 lanes to 4 lanes with a median. This project will reduce traffic congestion, improve roadway safety, and enhance multimodal mobility. Liberty Road is classified as a collector and is not included in the Regional Travel Demand Model.

Project at a Glance

ID	H141024
Type	Roadway Widening
Length	1.02 miles
Estimated Cost	$16,600,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	2	4
V/C Ratio	N/A	N/A
Volume (vpd)	N/A	N/A
Capacity (vpd)	15,000	32,000
Crash Rate	N/A	N/A
Truck Percentage	N/A	N/A

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

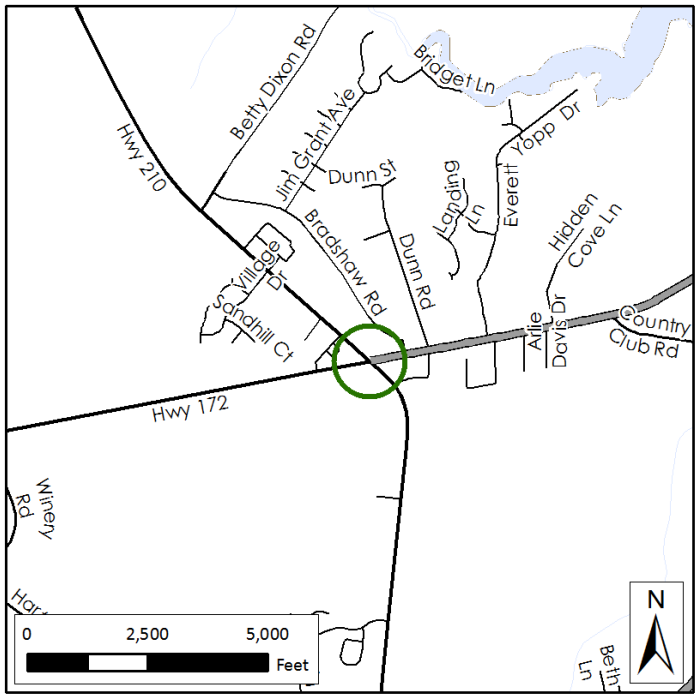
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Bike Lanes
Transit Service	Route B (Green)	No Change

NC 172 at NC 210

The intersection of NC 172 at NC 210 is proposed to be improved with additional turn lanes and multimodal features. This project, included in the Sneads Ferry Community Plan, is primarily intended to alleviate future congestion.



Project at a Glance

ID	S-2
Type	Intersection
Length	N/A
Estimated Cost	$1,800,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	2	2
V/C Ratio	0.47	0.98
Volume (vpd)	21,000	44,000
Capacity (vpd)	45,000	45,000
Crash Rate	1.03	0.93
Truck Percentage	6.8%	9.1%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

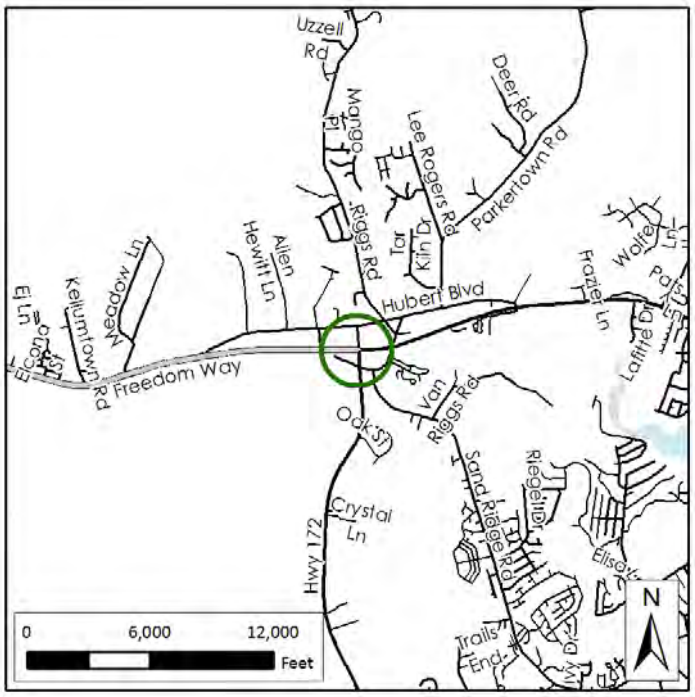
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Sidewalk; Shared Use Path; Wide Outside Lanes; Paved Shoulder
Transit Service	None	None

NC 24 at NC 172

The intersection of NC 24 at NC 172 is proposed to be improved with a signal upgrade, additional turn lanes, crosswalks, and bike facilities. This project will reduce traffic congestion, improve safety, and improve multimodal mobility.



Project at a Glance

ID	S-3
Type	Intersection
Length	N/A
Estimated Cost	$1,800,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.39	0.72
Volume (vpd)	32,000	59,000
Capacity (vpd)	82,000	82,000
Crash Rate	0.14	0.13
Truck Percentage	3.5%	5.2%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Sidewalk; Shared Use Path; Paved Shoulders
Transit Service	None	None

NC 210 at Old Folkstone Road

The intersection of NC 210 at Old Folkstone Road is proposed to be improved by adding turn lanes, medians, and pedestrian and bicycle facilities. This project, included in the Sneads Ferry Community Plan, will reduce traffic congestion and provide bicycle and pedestrian facilities.

Project at a Glance

ID	S-4
Type	Intersection
Length	N/A
Estimated Cost	$1,800,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.27	0.59
Volume (vpd)	10,000	22,000
Capacity (vpd)	37,000	37,000
Crash Rate	1.31	1.18
Truck Percentage	5.3%	7.1%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

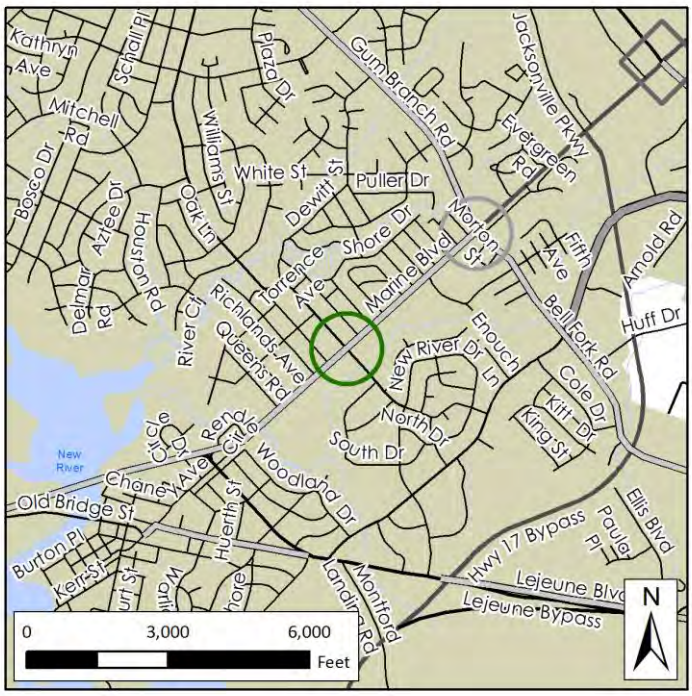
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Sidewalk; Shared Use Path; Wide Outside Lanes; Paved Shoulders
Transit Service	None	None

US 17 at Onslow Drive / Henderson Drive

The intersections of US 17 at Onslow Drive and Henderson Drive are proposed to be improved by upgrading signal operations. This project will reduce traffic congestion and improve safety.



Project at a Glance

ID	U-5950
Type	Intersection
Length	N/A
Estimated Cost	$1,800,000
Cost Band	2036-2040

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.57	0.83
Volume (vpd)	40,000	58,000
Capacity (vpd)	70,000	70,000
Crash Rate	0.27	0.25
Truck Percentage	5.1%	8.6%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

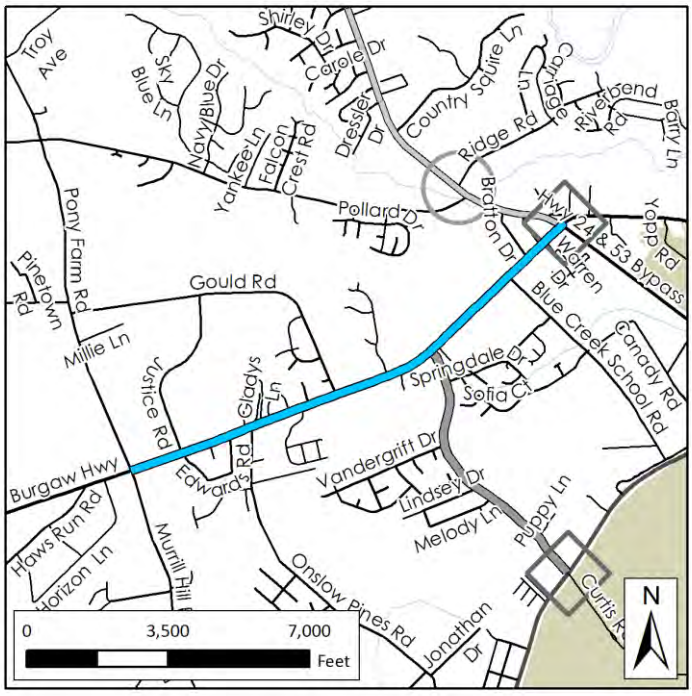
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Partial Sidewalk; Shared Use Path	Sidewalk; Bike Lane; Wide Outside Lane
Transit Service	Purple Route	No Change

NC 53

NC 53 from NC 24 to Murrill Hill Road is proposed to be widened from 2 lanes to 4 lanes with a median. This project will reduce traffic congestion and improve safety.



Project at a Glance

ID	H090884
Type	Roadway Widening
Length	2.43 miles
Estimated Cost	$153,800,000
Cost Band	2040-2045

Operational Characteristics

	Existing	Future
Travel Lanes	2	4
V/C Ratio	0.64	0.67
Volume (vpd)	14,000	29,000
Capacity (vpd)	22,000	43,000
Crash Rate	3.19	2.88
Truck Percentage	1.4%	3.2%

Environmental Impacts

- ☐ Wetlands
- ☐ Historic Districts/ Sites
- ☐ Bodies of Water
- ☐ Natural Heritage/ Cultural Resources
- ☐ Land Trust Conservation Properties
- ☐ Game Lands

Specific Features:

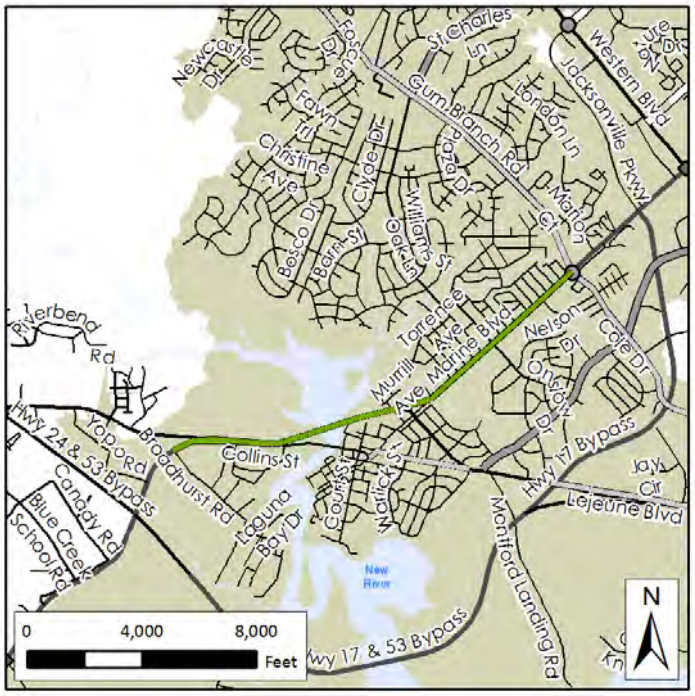
None

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Bike Lanes
Transit Service	None	None

US 17 Business (Marine Boulevard)

The construction of a median and improvements to the roadway are proposed for US 17 Business (Marine Boulevard) from Gum Branch Road to Broadhurst Road. This project will improve traffic flow and improve roadway safety.



Project at a Glance

ID	H111200
Type	Roadway Operations
Length	3.16 miles
Estimated Cost	$104,500,000
Cost Band	2040-2045

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.63	0.85
Volume (vpd)	30,000	41,000
Capacity (vpd)	48,000	48,000
Crash Rate	4.45	3.34
Truck Percentage	6.5%	9.1%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

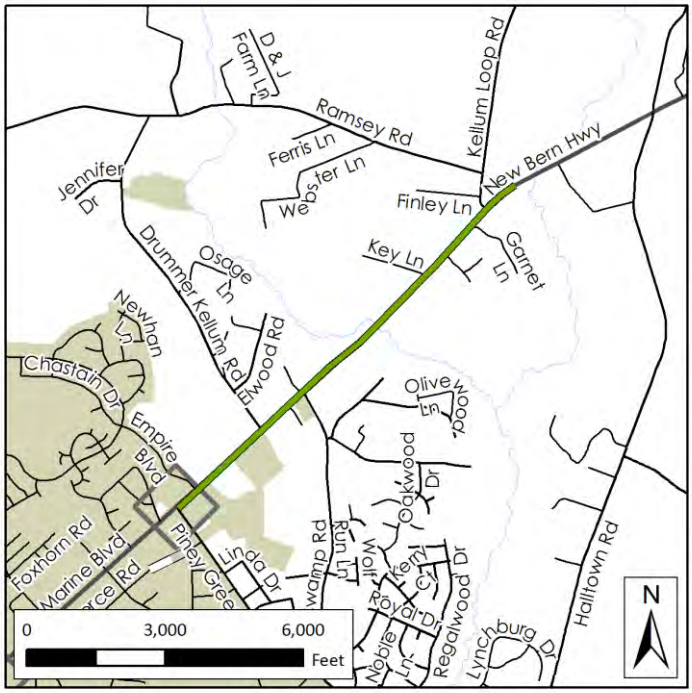
New River

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	Partial Sidewalks; Greenway	Bike Lanes; Sidewalks
Transit Service	None	No Change

US 17

Access management is proposed for US 17 from Piney Green Road to Ramsey Road. This project will improve traffic flow and predictability and improve safety.



Project at a Glance

ID	C-4
Type	Roadway Operations
Length	1.92 miles
Estimated Cost	$37,900,000
Cost Band	2040-2045

Operational Characteristics

	Existing	Future
Travel Lanes	4	4
V/C Ratio	0.38	0.52
Volume (vpd)	8,000	11,000
Capacity (vpd)	21,000	21,000
Crash Rate	0.14	0.11
Truck Percentage	1.8%	2.9%

Environmental Impacts

- Wetlands
- Historic Districts/ Sites
- Bodies of Water
- Natural Heritage/ Cultural Resources
- Land Trust Conservation Properties
- Game Lands

Specific Features:

Wolf Swamp

Multimodal Characteristics

	Existing	Recommended
Bike/Ped Facilities	None	Sidewalk and/or Trail
Transit Service	None	None