Chapter 3

Multimodal Needs

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multimodal needs

Introduction

A comprehensive transportation strategy requires a variety of transportation means and methods. It must focus on a diversity of ways in which people can move around the region and it must respond to the changing funding circumstances to bring about a new type of efficiency for the system. The strategy must also be responsive to and work in concert with the growth of the region and leverage the location, form, and intensity of future development. When transportation and land use are planned in a collaborative way there are greater opportunities to promote the efficient movement of people and goods in a variety of ways. Chapter 3 offers some insight to the ways in which the region can respond to the changing travel needs and seeks to document the values, needs and priorities of the region. The successful inclusion of a diversified approach contributes to the livability of the region and effectiveness of the transportation system.

"When transportation and land use are planned in a collaborative way, there are greater opportunities to promote the efficient movement of people and goods in a variety of ways."

Background

This chapter includes a multitude of items that serve as input values in the creation of the 2040 RMP including:

Growth Assessment – this section describes the identification of a preferred growth scenario that was used as the foundation for predicting where growth will occur and how it will likely be accommodated.

Methods – this section describes the variety of means that can be used to respond to increased travel demand with an emphasis on multiple travel modes, the use of technology and supporting policies.

Complete Streets – this section reaffirms the philosophy of the Complete Streets movement, its role in design decisions and application in the CRTPA region.

Opportunities Plan – is an unconstrained expression of a variety of transportation projects throughout the CRTPA area.

Needs Plan – is an expression of performance related needs identified through the travel modeling process.

Growth Assessment

During the development of the 2035 RMP, a scenario planning process was used to identify a preferred method of accommodating future regional growth. For *Connections 2040 RMP,* the process was further refined and updated as needed. The 2040 process explored the following possible scenarios:

1. "Business as Usual"
This scenario assessed what the region would look like if future development continues with current development patterns and policies.

2. Quality Growth
This scenario incorporated typical quality growth principles and the Goals and Objectives developed for the RMP. The scenario included development patterns which focused on more compact, dense development in areas identified through the public involvement process and in coordination with local plann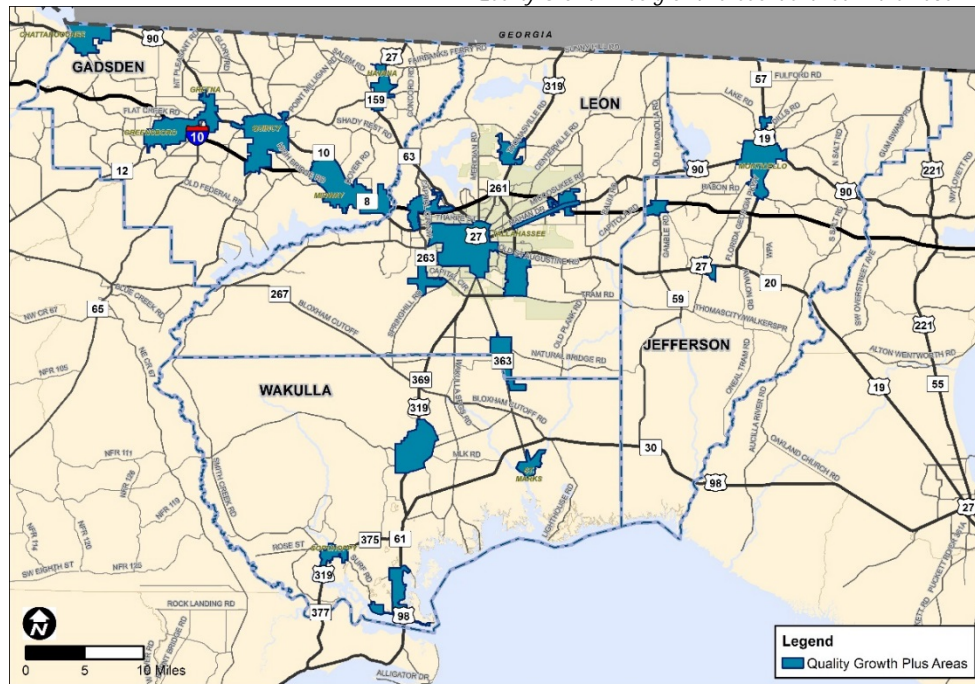ing staff. This scenario also included a more extensive consideration of community resources, including environmental, cultural and historic assets.

3. Quality Growth Plus
This third scenario was identified by CRTPA Board at the October 2009 retreat. This scenario incorporated more intensive and exceptional growth management strategies than Scenario 2, for example higher densities in compact areas and more extensive emphasis on the preservation of community resources.

The transportation performance of each scenario was evaluated using Geographic Information System software and the regional travel model. Information gathered during this process was shared with the public, project committees, and the CRTPA Board. The result of this process was the section of the Quality Growth Plus Scenario (see map). This scenario serves as the building block for designing a transportation that best serves the priorities and values of the region.

Quality Growth Plus growth areas identified in the 2035 RMP

Methods

Active Transportation

The Active Transportation focus of the *Connections 2040 RMP* 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 CRTPA 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 6.

Walking and biking are key elements to a healthy community's transportation system. For instance, every trip begins and ends as a walking trip; yet walking often remains a lower priority mode during the planning process. Slowing traffic and incorporating pedestrian and bicycling infrastructure into future roadway design plans enhances walkability and bikeability. The availability of active transportation facilities and amenities plays an important role in encouraging the use of alternative modes of travel to the automobile.

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.

Table 3.1 – Trip Purpose and Types of Users	
Trip Purpose	**Utilitarian**
	• Non-discretionary travel where user is traveling to a specific location (e.g. work, school, home)
	• Those without access to or ability to drive vehicles
	• Includes elderly, children, persons with disabilities
	• Varying skill level
	Recreational
	• Discretionary travel where user is using alternative modes to travel for fun
	• Those who prefer a healthy, active lifestyle regardless of access to personal vehicles
	• Includes persons of all ages and abilities
	• Varying skill level
Types of Users	**Advanced Cyclists**
	• Typically the most experienced on road
	• Can safely ride on typical arterials 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 bicycle miles
	Basic Adult Cyclists
	• Less experience on road
	• Less secure in ability to ride in traffic without special accommodations
	• Casual/new adult/teenage riders
	• Typically prefer shared use paths that reduce exposure to fast-moving, heavy traffic
	• 80% of adult cyclists
	Child Cyclists
	• Little to no experience on the road
	• Limited field of vision while riding
	• Generally keep to neighborhood streets/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.

Table 3.2 – Active Transportation Facility Types

Striped Bike Lane
Target User – Basic and Intermediate
Estimated Cost - $2000/mile (striping only)

- Exclusive-use area next to the outermost travel lane
- Typical width – 4′ to 5′ (preferred)

Wide Outside Lane
Target User – Intermediate and Advanced

- 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)

Shared Lane Markings (Sharrows)
Target User – Intermediate and Advanced
Estimated Cost - $12,500/mile ($175 each)

- 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
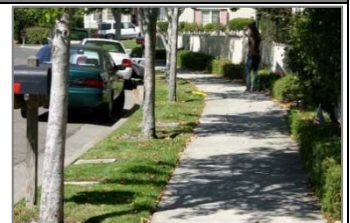- Typical spacing – 100-250 feet along corridor

Table 3.2 cont. – Active Transportation Facility Types

Sidewalk
Target User – Pedestrians
Estimated Cost - $150,000/mile

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

Paved Shoulder
Target User – Advanced
Estimated Cost - $500,000/mile (assumes 4′)

- 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)

Shared-Use Path
Target User – All cyclists; Pedestrians
Estimated Cost - $220,000/mile

- 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)

Transit

Transit recommendations for the *Connections 2040 RMP* 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.

Choice and Captive Riders

Transit serves two types of riders: captive and choice.

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, those who are transportation-disadvantaged 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.

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. The design of communities can contribute to the effectiveness and efficiency of transit service. Compact-walkable places are transit supportive places. They create environments and places where the convenience and experience for all riders is increased (and have a greater likelihood of attracting new riders). Generally, the development types that result in the greatest amount of 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 premium transit facilities. Development around the transit includes higher densities and mixture of uses. The design of such places maximizes access to transit and supports walking and biking between destinations.

Transit-Ready Development

Targeted locations in communities where transit service is desired but not yet present can benefit from the creation of transit-ready developments and supporting infrastructure. Compact, walkable places with a mixture of uses can be encouraged through design guidelines and codes with the intent of creating a vibrant environment where multiple travel modes co-exist. Ultimately, increased demand resulting from place-making principles being applied in the public and private realms create a setting where the provision of future transit service is successful.

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 study area are viable long-term facilities. FSU, FAMU, regional hospitals, public service facilities, and regional shopping destinations are places with build-in demand. The scale of these destinations generates sufficient travel demand that can be accommodated by public transportation. These types of locations represent places where access to public transportation continues to be an important priority.

For more information regarding existing and planned transit service in the region, please see the StarMetro Transit Development Plan.

Systems Management

Transportation systems management (TSM) and intelligent transportation systems (ITS) are additional tools designed to manage traffic congestion and improve safety. Often referred as systems management, these features have been deployed across the country and locally in the CRTPA area.

FDOT has recognized this need to move toward mobility, defined networks, and development of an integrated operations and management program that focuses on providing multimodal mobility and safety outcomes for Florida's traveling public.

With increase concerns for safety and funding there was an acknowledgment that a strategy that maximized the efficiency and effectiveness of the existing system was required. The result was the creation of the Transportation Systems Management & Operations **(**TSM&O) Program. TSM&O is defined as:

"An integrated program to optimize the performance of existing multimodal infrastructure through implementation of systems, services, and projects to preserve capacity and improve the security, safety and reliability of Florida's transportation system." *-FDOT TSM&O Strategic Plan, 2013*

Within the CRTPA region there are a variety of measures in place. Dynamic Message Signs (DMS) have been installed along the I-10 corridor offering communicating real-time incident alerts, congestion delays, and other appropriate messages associated public safety. The Tallahassee Advanced Transportation Management System (TATMS) is a centralized system; it controls and monitors approximately 240 signalized intersections in Tallahassee and Leon County. Over 50 surveillance cameras have been installed for traffic monitoring, incident management (detection and verification), and signal timing evaluation. Other components include emergency preemption systems, and (depending on funding availability) fixed and portable DMSs and traveler advisory radio, as well as emergency vehicle

preemption. Some of 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
- Use an open architecture for linking to FDOT and other regional facilities
- Use Ethernet technology to be flexible and accommodate the City's future growth
- Minimize maintenance costs

Freight

Successful planning efforts for freight movement incorporate roadway recommendations that increase capacity along select routes. Roadway network improvements should help facilitate freight movement however, additional strategies should also 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 CRTPA 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 emergency response personnel and freight providers.
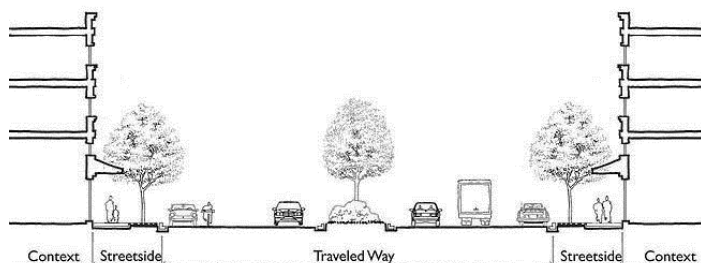
Complete Streets

"Complete streets" are community-oriented streets that safely and conveniently accommodate multiple modes of travel. A common goal for complete streets is to improve safety and promote an environment where active transportation can thrive. Additional goals may include improved economic vitality, enhanced place-making, and increased accessibility for populations and neighborhoods. 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 opportunity to walk, bicycle, and ride transit safely, efficiently, and comfortably.

The *Connections 2040 RMP* communicates the desired balance between functional classification and complete streets through a Street Design Priority Matrix and Context Sensitive Solutions.

Top: Image of Gaines Street, Complete Streets project in Tallahassee

Below: Diagram communicating general street elements that should be considered during Complete Street design.

Street Design Priority Matrix

The planning process for the *Connections 2040 RMP* 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). Inspired by FDOT's Complete Streets Policy, it provided a useful reference tool during the creation of the recommendations presented later in this chapter. Following adoption of the long range transportation plan, staff can use the matrix during modifications to the plan or when interacting with the public, businesses, and development communities.

Top: Image of Complete Streets intersection design example
Below: Street design priority matrix for corridors in constrained settings.

	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**

Opportunities and Needs Plan

The path to creating a Cost Feasible RMP includes a process that allows for unconstrained visioning, technical analysis and financial assessment. Two key milestones include the creation of the Opportunities Plan and the Needs Plan. The Opportunities Plan fulfills the appetite to establish an unconstrained vision of desired projects while the Needs Plan responds to documented mobility needs.
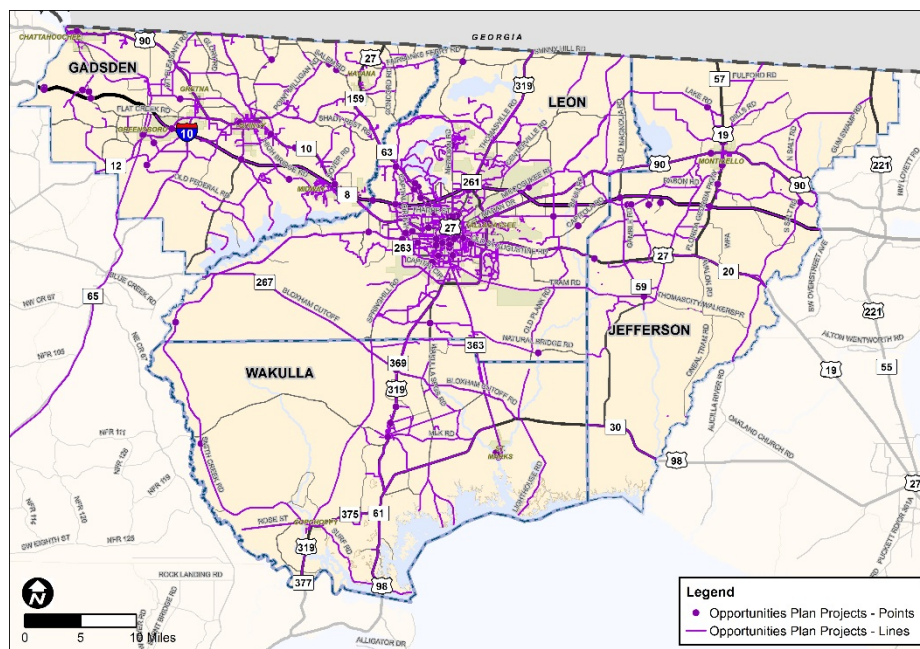
Opportunities Plan Development

The Opportunities Plan is an expression of local visioning. It is not required to be cost feasible and doesn't need to be tied to any specific mobility objectives. Often these are projects that are generated at the local level that are associated with a diversity of community initiatives. Some of these initiatives may have ties to transportation mobility while still others may be related to beautification, economic development, or supportive of other locally developed plans or studies.

The *Connections 2040 RMP* provided an elongated forum where local communities, plan participants, and general public could contribute to the creation of the Opportunities Plan. In addition, technical work sessions with local representatives and public workshops were held to increase awareness and accessibility to the plan development process. The resulting list of projects advanced to consideration as candidate projects from which the Needs Plan and Cost Feasible Plan were developed.

This process identified over 1,800 projects. An inventory of Opportunities Plan projects can be found in the Technical Appendix. In addition, a summary of recommendations organized by county can be found in *Chapter 6*. A breakdown of projects by County is as follows:

- Gadsden
- Jefferson
- Wakulla
- Leon

Composite mapping of Opportunities Plan Projects
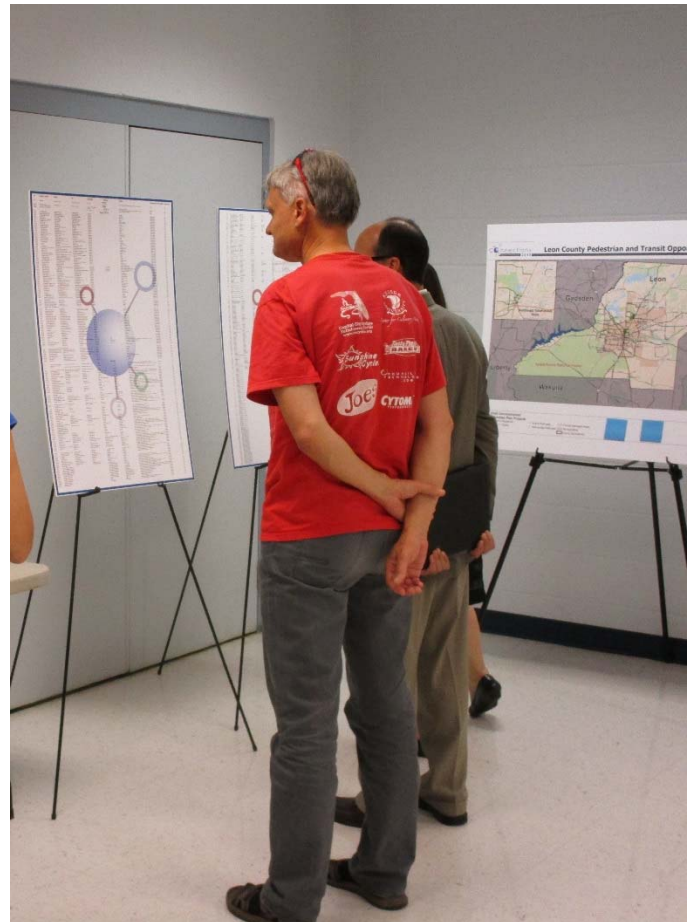
Needs Plan Development

Following the identification of projects in the Opportunities Plan, the recommended network was evaluated based on its response to the mobility needs of the region. The first step in developing the final roadway needs list was to review the projects for connectivity to the regional transportation system. Many of the projects identified were strictly local in nature and, unless connected to a regional facility, were not included in the RMP Needs Plan list.

During this process an emphasis was placed on the flexibility of the *Connections 2040 RMP* to respond to the changing needs of the region. This process took the form of a diagnostic assessment of the 2035 RMP and its subsequent implementation that focused on increasing the agility and functionality of the plan. The primary finding from this process focused around the identification of local bicycle and pedestrian projects. Non-regionally significant bicycle and pedestrian projects are primarily the focus of member jurisdictions rather than the CRTPA. When these projects are anticipated to be lower cost initiatives they can be considered for funding through the state Transportation Alternatives Program. As such, there is not a need to prioritize these projects at the regional level. These projects have been identified in the Opportunities Plan, but as a result of this approach do not progress to the Needs Plan. This is not a commentary on the level of importance of these projects to a particular area. Rather, the exclusion of these projects from the Needs Plan allows them to be pursued and implemented opportunistically instead of being subjected to the regional approval process.

Recommendations for future striped bicycle lanes were approached in the same fashion. Additional study of these facilities is needed to determine the most appropriate level of bicycle projects and implementation of those projects.

Once the final list of roadway, bicycle, pedestrian, and transit projects were, each of the projects were mapped in GIS. Projects identified are shown in the following figures. The Needs Plan projects were then moved through a prioritization process and then considered versus available revenues to create the Cost Feasible Plan. More information on this process can be found in Chapters 4 and 5.
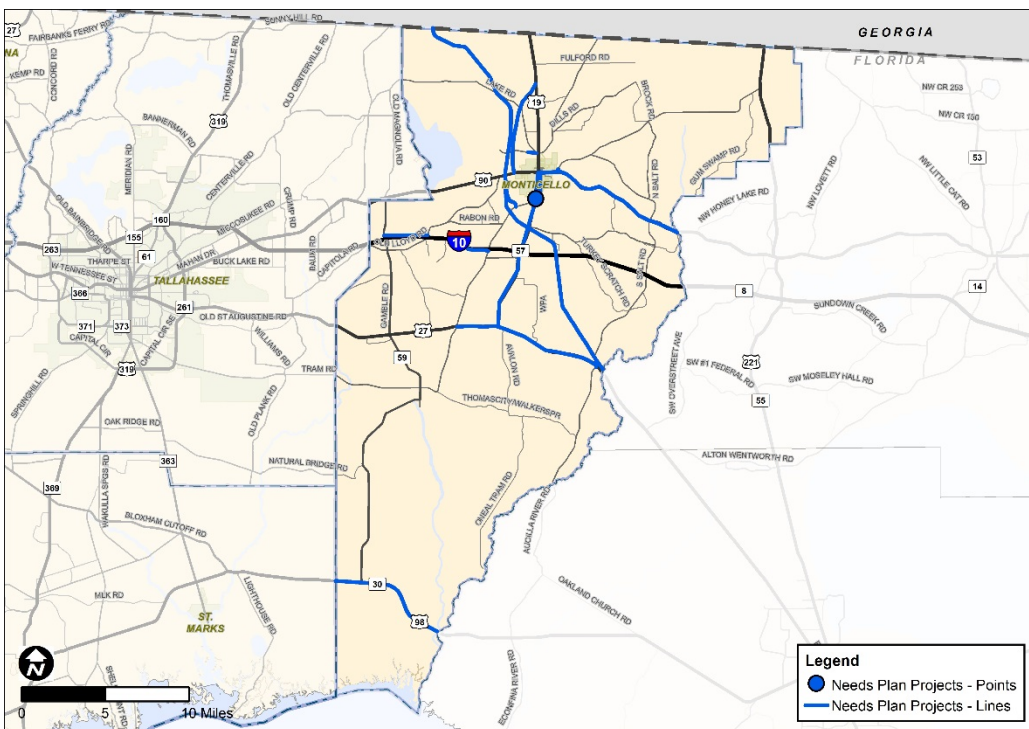
A summary of recommendations organized by county can be found in *Chapter 6 – Recommendations*.

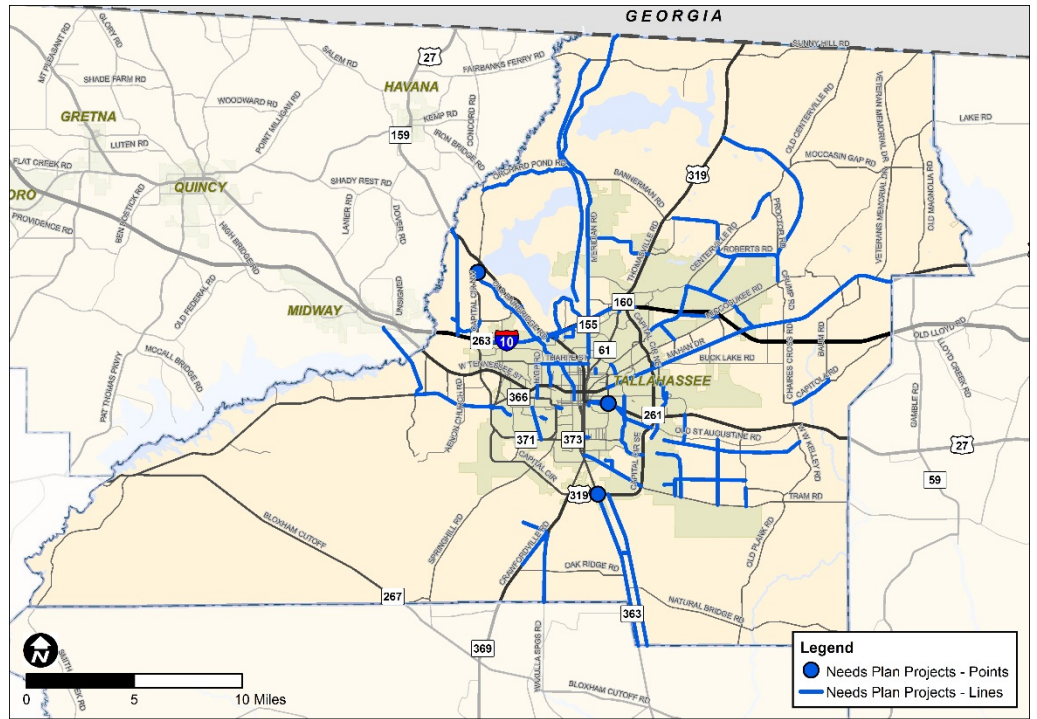*Connections 2040 RMP Public Workshop*

Gadsden County
Needs Plan Projects

Jefferson County
Needs Plan Projects

Leon County
Needs Plan Projects

Wakulla County
Needs Plan Projects