

THE LONG-RANGE TRANSPORTATION PLAN

executive summary



L RTP

ACKNOWLEDGEMENTS

Many people contributed to this report, including staff, local government representatives, and citizens. Special thanks to:

*Berkeley County
Charleston County
Dorchester County
City of Charleston
City of Folly Beach
City of Goose Creek
City of Hanahan
City of North Charleston
Town of Isle of Palms
Town of James Island
Town of Kiawah Island
Town of Mt. Pleasant
Town of Moncks Corner
Town of Seabrook Island
Town of Sullivan's Island
Town of Summerville*

The CHATS 2040 L RTP was developed for the Berkeley-Charleston-Dorchester Council of Governments



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*in collaboration with:
Alta Planning + Design
Connetics Transportation Group
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EXECUTIVE SUMMARY

INTRODUCTION

The Long-Range Transportation Plan (LRTP) provides a look forward to the transportation future of the CHATS MPO planning area in 2040. This project summary describes the process that led to the plan's development and the project recommendations stemming from that process.

The Plan focuses on achieving a robust multimodal transportation system and addresses in detail the current and future issues and needs for the CHATS area transportation network. The 2040 LRTP lists roadway, transit, pedestrian and bicycle, and other transportation alternatives projects that reflect the region's shared values from various stakeholders in the region, including local elected officials, planners, engineers, special interest groups, the business community and the general public. The Plan also reflects current and projected area conditions and local/state/federal priorities.

CHATS PLANNING AREA

The Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) serves as the Charleston Area Transportation Study (CHATS) Metropolitan Planning Organization (MPO) and is responsible for creating a comprehensive plan for the CHATS planning area.

The 640,280-acre region includes cities, towns, suburban communities, and rural areas in transition. It takes an hour to drive from the Isle of Palms to Seabrook Island; and another hour to drive from Folly Beach to Moncks Corner and other towns that are near the periphery of the planning area.

THE LRTP PROCESS

The LRTP initially identified issues and concerns gathered from the public through meetings and surveys as well as interpretations of crashes, congestion, and other data by the project team. This information, along with a review of the study area context and relevancy of past planning efforts, forms the crux of the opening sections of the project workbook.

ROLE OF THE REPORT

Once the issues were reviewed, a set of important directions were developed that the LRTP used to help focus the subsequent recommendations. These plan directions are similar to design criteria used in the development of projects, answering questions that help shape what success looks like for different kinds of transportation facilities, travelers, and impacted elements of the natural and human environments.

This report provides the background, identifies and addresses the issues, and sets the Plan's directions - subsequent chapters fully evolve the project recommendations, financing, phasing, and other implementation ideas.

Input from a diverse group of regional stakeholders and the general public helped to shape the vision and associated goals of the CHATS 2040 LRTP. To ensure consistency with and the collective advancement of national goals, the goals developed in the CHATS LRTP 2040 align with the national goal areas established under MAP-21 and the FAST Act, which are also reflected in the State Multimodal Transportation Plan (MTP). The goals of the Plan, and performance measures used to evaluate efficient project implementation identified under each goal, are summarized on pages 6 and 7.

CHATS Planning Area



Credit: Steven Hyatt

Goose Creek

Located in Berkeley County, the City of Goose Creek is the primary location for the Naval Weapons Station Charleston. (St. James Church)



Credit: Yvette Wilson

Summerville

The first town in the U.S. to pass a law against cutting down trees of certain sizes. Their official seal is "Sacra Pinus Esto (The Pine is Sacred)." (Herbert Jessen Boardwalk)



Credit: Ron Cogswell

Mount Pleasant

The third-largest city in the metropolitan area, it is well-known for its walkable and bikable neighborhoods, as well as several quality schools. (Coastal Houses)



Credit: Davey Borden

Moncks Corner

This small town in Berkeley County has a rich and well-preserved heritage including the site of Mepkin Abbey and a historical Train Depot. (Santee Canal Park)



Hanahan

The City of Hanahan, a bedroom community that developed from its proximity to the former Naval Base, continues to experience rapid growth in Berkeley County. (Hanahan Amphitheater)



Credit: Mogollon

James Island

Nestled in South Carolina's lowcountry along the Charleston harbor, the town has transitioned from a rural environment to a thriving residential community. (Live Oak)

Goals and Performance Measures

The CHATS 2040 LRTP seeks to guide improvements to the transportation network that will achieve the seven goals listed below. Projects will be evaluated against the proposed performance measures identified, both before and after development, to determine the effectiveness of each.

GOALS	OBJECTIVES	PERFORMANCE MEASURES
<p>SAFETY -</p> <p>Improve the safety of the transportation system for all users</p>	<p>a. Reduce the number and rate of crashes, fatalities, and serious injuries across all modes of travel</p>	<ul style="list-style-type: none"> ■ Number of crashes ■ Number and rate of fatalities per VMT ■ Number and rate of serious injuries per VMT ■ Number of non-motorized fatalities and serious injuries ■ Number and rate of preventable (transit related) accidents per 100,000 vehicle miles ■ Average miles between road-calls (fixed route transit service)
	<p>b. Provide a safe environment for transportation users through engineering, enforcement, and education activities</p>	<ul style="list-style-type: none"> ■ Provide funding to at least one education, enforcement, or encouragement program to improve safety, bicycling and walking skills, and/or the number of non-motorized travelers
<p>SYSTEM PRESERVATION -</p> <p>Maintain the region's transportation infrastructure and public transportation assets in a state of good repair</p>	<p>a. Allocate resources to maintain or improve the system's pavement conditions</p>	<ul style="list-style-type: none"> ■ Percent of pavements on Interstate system in good condition ■ Percent of pavement on Interstate system in poor condition ■ Percent of pavement on non-Interstate NHS in good condition ■ Percent of pavement on non-Interstate NHS system in poor condition
	<p>b. Allocate resources to maintain or improve bridge conditions</p>	<ul style="list-style-type: none"> ■ Percent of NHS bridges classified as in good condition ■ Percent of NHS bridges classified as in poor condition
	<p>c. Maintain or improve transit assets in a state of good repair</p>	<ul style="list-style-type: none"> ■ Average age of transit fleet
<p>MOBILITY -</p> <p>Improve travel mobility for all users, regardless of mode</p>	<p>a. Reduce congestion in primary commuter corridors</p>	<ul style="list-style-type: none"> ■ Travel Time Index ■ Proportion of primary corridor roadway miles operating at or below LOS "D" ■ Ratio of transit-to-auto travel times in priority transit corridors ■ Vehicular delay along auto and transit priority corridors
	<p>b. Increase transit services, and provide enhanced transit amenities and facilities</p>	<ul style="list-style-type: none"> ■ Passenger trips per vehicle revenue mile ■ Passenger trips per vehicle revenue hour
	<p>c. Support/promote ride-sharing, such as vanpool, carpool, and park-and-ride</p>	<ul style="list-style-type: none"> ■ Number of participants in ride-share programs
	<p>d. Adopt and apply access management policies and controls along congested corridors to improve safety and increase capacity</p>	<ul style="list-style-type: none"> ■ Miles of major roadways/corridors designed to employ access management strategies

GOALS	OBJECTIVES	PERFORMANCE MEASURES
RELIABILITY – Improve reliability of the movement of people and goods across the region	a. Increase travel time reliability for highway and transit corridors	<ul style="list-style-type: none"> ■ Travel delay per peak period ■ Buffer Time Index
	b. Improve the reliability of transit	<ul style="list-style-type: none"> ■ Transit on-time performance
ENVIRONMENT – Provide a transportation system that minimizes or mitigates impacts to the region’s natural, cultural and historic resources	a. Minimize or mitigate project impacts on the natural environment	<ul style="list-style-type: none"> ■ Maintain the percent change in VMT at or below population growth rate
COMMUNITY – Develop transportation projects that provide a range of benefits to the community, especially traditionally disadvantaged populations, support healthy and livable communities and strengthens the economic vitality of the region	a. Support equity of active transportation investment and expand mode choice	<ul style="list-style-type: none"> ■ Commute mode share ■ System miles of new pedestrian, bike, or multi-use trails completed ■ Number of transit trips per vehicle revenue hour ■ Number of transit trips per vehicle revenue mile ■ Number of park-and-ride facilities or spaces available
	b. Improve network connectivity	<ul style="list-style-type: none"> ■ Roadway connectivity index
	c. Adopt and apply Complete Streets policy that specifies steps to identify community context, needs, and recommended design criteria for each transportation projects, potential users, and every mode of travel	<ul style="list-style-type: none"> ■ Proportion of system miles improved in accordance with adopted Complete Streets policy
	d. Improve transit access to jobs/ employment centers	<ul style="list-style-type: none"> ■ Number of population and jobs within ½ mile of transit services
	e. Improve transit access to traditionally disadvantaged populations	<ul style="list-style-type: none"> ■ Number of low income or minority populations within ¼ mile of transit services
	f. Support the efficient movement of goods by addressing freight specific bottlenecks and providing efficient and reliable freight corridors	<ul style="list-style-type: none"> ■ Truck travel time reliability index ■ Delay on freight corridors ■ Miles of primary freight facilities operating at or below LOS “D”
COORDINATION/BEST PRACTICES – Ensure that the transportation planning process contemplates local land use plans, engages partner agencies, and employs best practices where possible	a. Engage typically under-engaged groups such as emergency response and freight movement stakeholders during development of the LRTP and other planning processes	
	b. Plan for and address transportation system impacts when considering new developments	

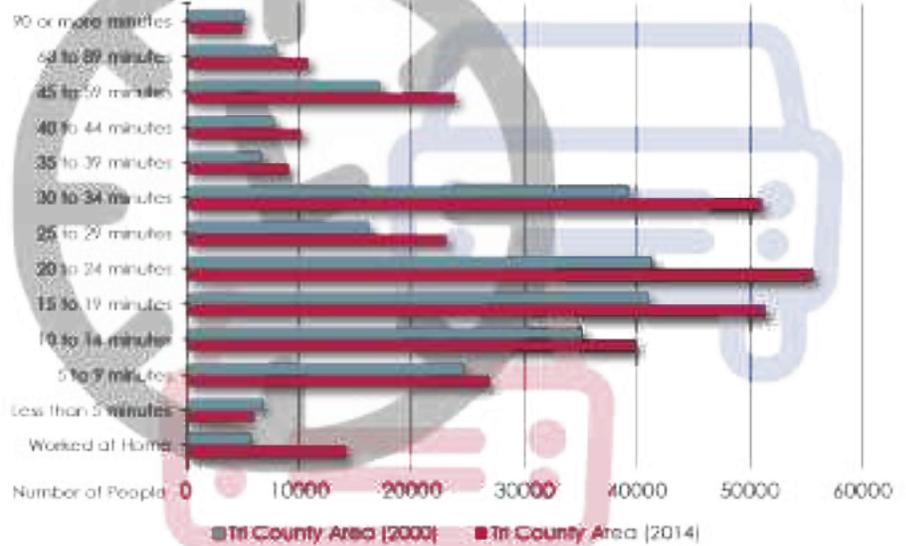
Regional Conditions

How do we move?

Census data revealed that the CHATS area is very car dependent. In 2014 over 80% of commuters in the Tri-county area drove to work alone compared to roughly 77% found across the United States. However, the region's commuting patterns are changing. From 2000 to 2014 there was a drop in the percent of commuters that carpooled to work and a noticeable increase in the proportion of commuters working from home or telecommuting.

During the same period the average commute times in the region have risen slightly. Short trips of less than five minutes was the only trip length where the real number of commuters trended downward.

Travel Time to Work



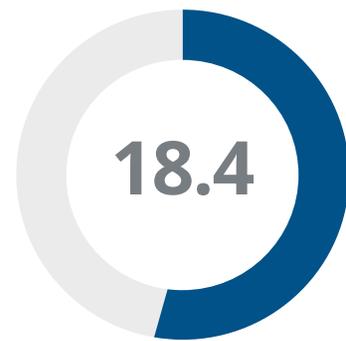
Cost of Congestion

The CHATS metro region is in the “middle-of-the-pack” compared to similarly sized peer regions in excess fuel consumption, travel delay, and congestion cost. However, the region's travel time index, which is a measure of the system's reliability, is worse than many of its peers.

The Cost of Congestion



Annual Excess Fuel Consumed (1,000 gallons)¹



Hours of travel delay (Millions)²



Congestion cost (Millions)³



Travel Time Index⁴

Note:

[1] Maximum annual excess fuel consumed (1,000 gallons) reported within the comparison group of peer regions was 18,895.

[2] Maximum hours of travel delay (Millions) reported within the comparison group of peer regions was 37.1.

[3] Maximum congestion cost (Millions) reported within the comparison group of peer regions was \$898.

[4] Maximum Travel Time Index reported within the comparison group of peer regions was 1.36.

(Source: Texas A&M Transportation Institute (TTI) 2015 Annual Urban Mobility Scorecard)

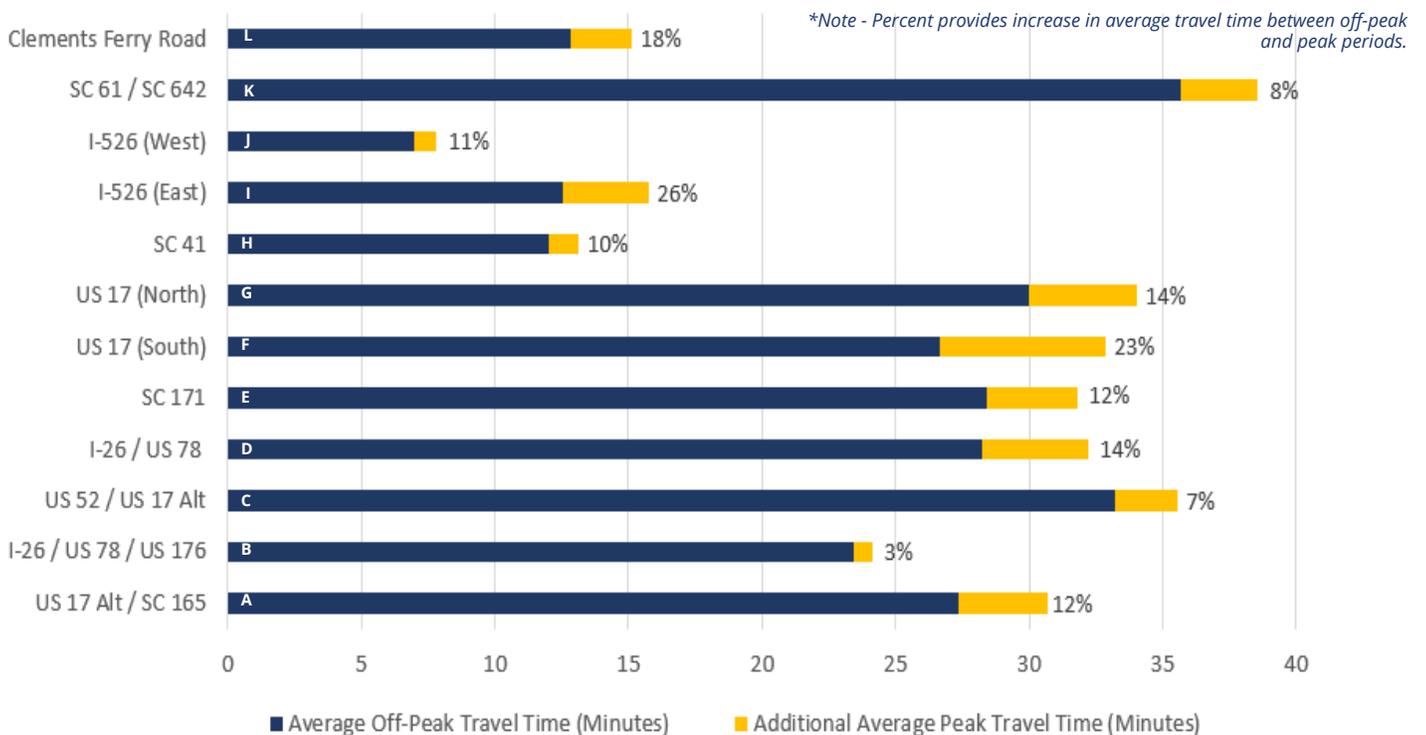
Study Corridors

Arterial roadways serve as the prime network for movement of people and goods in the CHATS planning area, carrying the majority of the transportation system users on any given day. Twelve of the most important highway corridors were selected for analysis, based on travel data, such as traffic counts and congestion times as well as regional stakeholder input. These corridors are crucial for congestion management in the CHATS area, and are explored specifically in the Congestion Management Process (CMP).

When the average peak and off-peak period travel times were compared, some study corridors saw relatively little difference between the two while other corridors, including I-526 (East) and US-17 (South), have close to a 25% increase in typical travel times during peak periods.



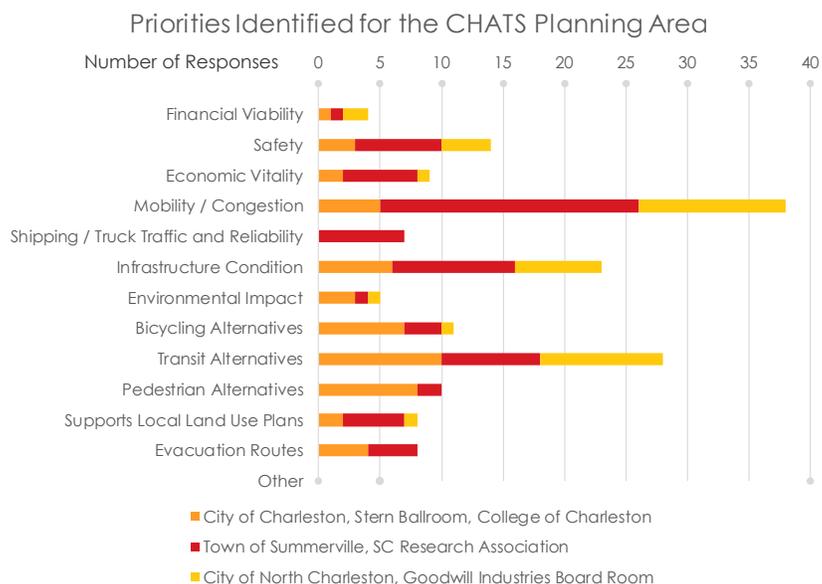
Corridor Average Peak Period Travel Time



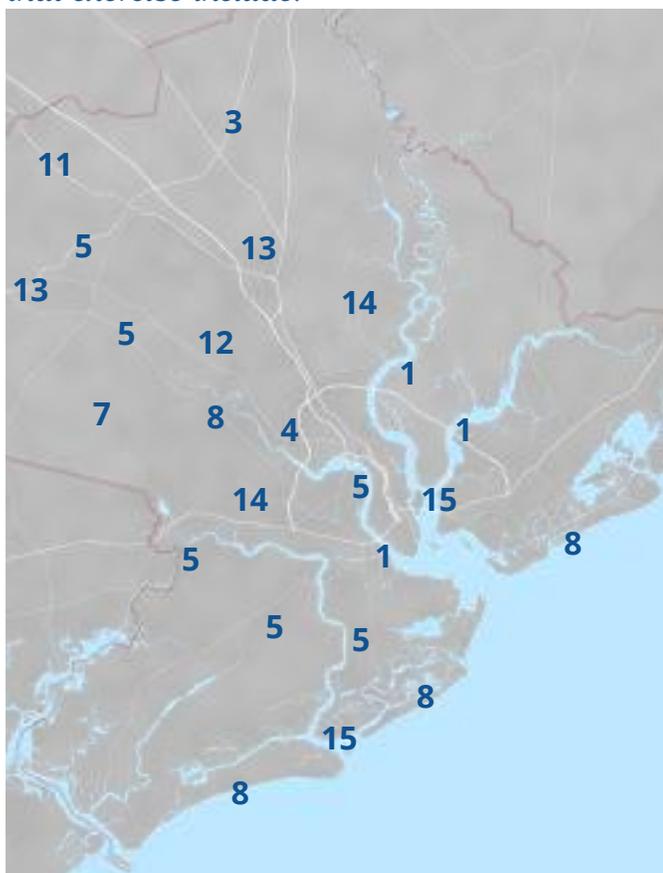
Public Engagement

Extensive public involvement was completed during the LRTP planning process. Multiple strategies were used to ensure maximum public engagement, including symposium-style meetings, traveling road shows, stakeholder interviews, questionnaires to community representatives, and marketing of an online survey.

The feedback gathered was used to understand the future needs for the CHATS planning area and develop the directions that guided the final recommendations in the report. A summary of what was heard and the directions and recommendations for each mode are provided on pages 10-26.



Symposium participants were also asked to identify problem areas and/or share ideas for improving the region's transportation system. Some of the most-often cited comments from that exercise include:



- 1** Congested bridges, including dangerous pedestrian crossings and a need for bicycle lanes on bridges
- 2** Better bus stop facilities, like benches, buffers, trash cans, and lighting needed (Planning area-wide)
- 3** Light rail, HOV, or bus rapid transit (BRT) needed in crowded northwest routes from Summerville & Goose Creek to Charleston
- 4** Incorporate transit into potential I-526 widening design
- 5** Numerous intersections require signal re-timing or improvements to turn lanes, channelization, and other geometric elements
- 6** Need transit technology, more frequent bus service, and to operate for longer periods and on weekends (Planning area-wide)
- 7** Need west-side connector route to provide connectivity in developing area and relieve existing, congested roadways
- 8** BRT and better bus service generally needed to beaches, hospitals, and the airport
- 9** Flooding, smart signal technology, and access management need to be emphasized on roadway system (Planning area-wide)
- 10** Invest in "Smart City" programs to improve technology, information systems, and enhance mobility options (Planning area-wide)
- 11** Increase trail (greenway) connectivity; fill in gaps in trails and sidewalks in core, high-activity areas
- 12** Improve Ashley Phosphate Road and other connector roads between major arterials (e.g., interchanges, widenings, signal coordination)
- 13** Widen Highway 78, 52, 17A and others to accommodate current and future traffic demands
- 14** Need better connectivity across waterways and railroads, even though it is costly to do so
- 15** Implement waterborne public transportation services along major waterways

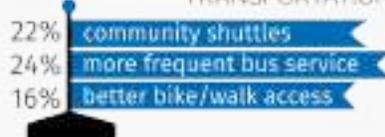
Public input

SURVEY RESULTS

We surveyed 2,100 people in 2017 to provide the following results. About 81% were white and 61% were female, but otherwise represent the age and geographic distributions in our region fairly well.



WHAT TRANSIT IMPROVEMENTS WOULD LIKELY INCREASE YOUR USE OF PUBLIC TRANSPORTATION?



“I would love to see the idea explored of a system that also includes ‘water buses’ like in Venice.”



WHAT'S THE MOST EFFECTIVE WAY TO REDUCE CONGESTION IN OUR REGION?

WHAT DO YOU THINK IS THE MOST EFFECTIVE WAY TO REDUCE CONGESTION IN OUR REGION?



Expand the transit system (16%)



Improve connectivity & expand highway (14%)



Improve operation of existing highway facilities (coordinate traffic signals, etc.) (14%)



Improve connection between land use & transportation planning (10%)



traffic and congestion (68%)

“provide concurrency of transportation system as growth occurs”

“Centrally monitor traffic congestion and properly correct and move accidents/incidents out of the way faster”

PERCENT SAYING THEY ARE UNSATISFIED or VERY UNSATISFIED BY...



“Safe bike lanes on North Rhett and Remount to get to Naval Weapons Station”

Roadway Directions

The Project Team was challenged with coordinating the information gathered from public input, past plans (including the adopted LRTP), and identifying the remaining shortfalls in capacity and performance identified through forecasts of simulated future travel needs. Some, although not all, of the specifics are shown on the right (“Roadways: What We Heard”), with more general directions that were considered in the development of the recommendations discussed in this section.

It’s About Traffic and Congestion, Sort of

While there are many newcomers to the region arriving every day, more participants in outreach efforts have lived in the BCD region for 10, 15, or 20 years. These people have seen enormous change, and particularly lengthening trips and longer periods of traffic congestion. A number of people voiced a concern about the pace, location, design, or other aspects of a successful economy and wanted policies to reflect a need to better manage new development, or at least make it pay for a larger share of the infrastructure that supports it.

Everyone (and Place) has Their Limit

Although there is still room for roadway capacity improvements, the additional infrastructure is increasingly expensive to plan, design, build, and maintain. Technology, transit, and active modes of travel will have to bear an increasing share of the responsibility to move people and goods in a place that values its historic and natural resources. Twenty-four travel lanes across various corridors connect the northwest edges of the CHATS planning area to Charleston. Adding more travel lanes may help segments of the corridor, but that capacity still has to “funnel” down to lower-capacity streets.

Feeding the Beast

Perhaps the most significant barrier to overcome is that of creating stable financing adequate to build and maintain a transportation system with a capacity that meets the demand. The Team heard many times that new improvements are overwhelmed or obsolete by the time they are constructed, implying that higher-capacity designs should have been pursued initially.

Roadways: What We Heard

- **Summerville**
Several commenters highlighted issues on downtown streets and major arterials to the west of town (e.g., Orangeburg Road, Dorchester Road).
- **Charleston/North Charleston**
The areas around Montague Avenue, I-526/I-26 interchange, Savannah Highway, Sam Rittenburg Blvd., and other major highways were focal points for many commenters, particularly specific intersections from a capacity standpoint.
- **Mt. Pleasant/Sullivan’s Island**
There were fewer comments here, and focused on fewer areas, such as intersections with the Isle of Palms Connector and SC-41. There were more biking, walking, and transit destinations on the islands and beaches, but connections to them were noted as being important facilities and services to improve.
- **James Island/Folly Beach/Kiawah**
Maybank Highway, River Road, and Bohicket Road intersections and, to some extent, roadway capacity were noted as areas to improve.
- If there was an **over-arching theme** to many of the comments received at the project symposia and other venues, it is that the capacity of the roadways has been reached and that congestion is rapidly worsening, threatening the economy, freight movements, and emergency response times. Workshop participants noted that managing capacity and elevating complete streets as their top priorities.

Roadway Recommendations

Through a critical evaluation of public commentary and observation, it became evident that transportation issues within the CHATS planning area were divided between the problems within the region and those within each community. Within the communities, issues related to poor bicycle and pedestrian mobility and intersection safety treatments were most prevalent. However, at the regional level, concerns relative to lack of connectivity, poor access management and peak hour congestion were dominant. No one issue was more prevalent than the need to address regional peak hour congestion. In fact, the Texas Transportation Institute estimated in 2014 that commuters in the Charleston region lost 41 hours annually due to congestion, in comparison to the national average of 42 lost hours.

To address the most common concerns brought up by the public - traffic congestion and safety, as well as better connections for biking, walking, transit, and automobiles - several over-arching strategies or themes are proposed. These strategies work much better when they are implemented together: each tends to reinforce the other in a “virtuous circle” of improvements. The common concerns heard throughout the planning process include:

- Increase Capacity
- Multi-modal Integration
- Manage Access
- Policy and Land Use Integration
- Connectivity

The map on page 14 highlights the proposed or visionary roadway improvement project recommendations for the CHATS planning area. These improvements include capacity enhancement projects, which cover improvements to existing or new roadway facilities, corridor study projects, roadway access management and intersection improvement recommendations.

All roadway recommendations were thoroughly vetted through the Study Team and BCDCOG staff. Of these identified projects, certain corridor segments and intersections were selected by staff members from BCDCOG in consultation with local jurisdictions for further study through conceptual designs, shown in the Hot Spots and Corridors section. The projects included are:

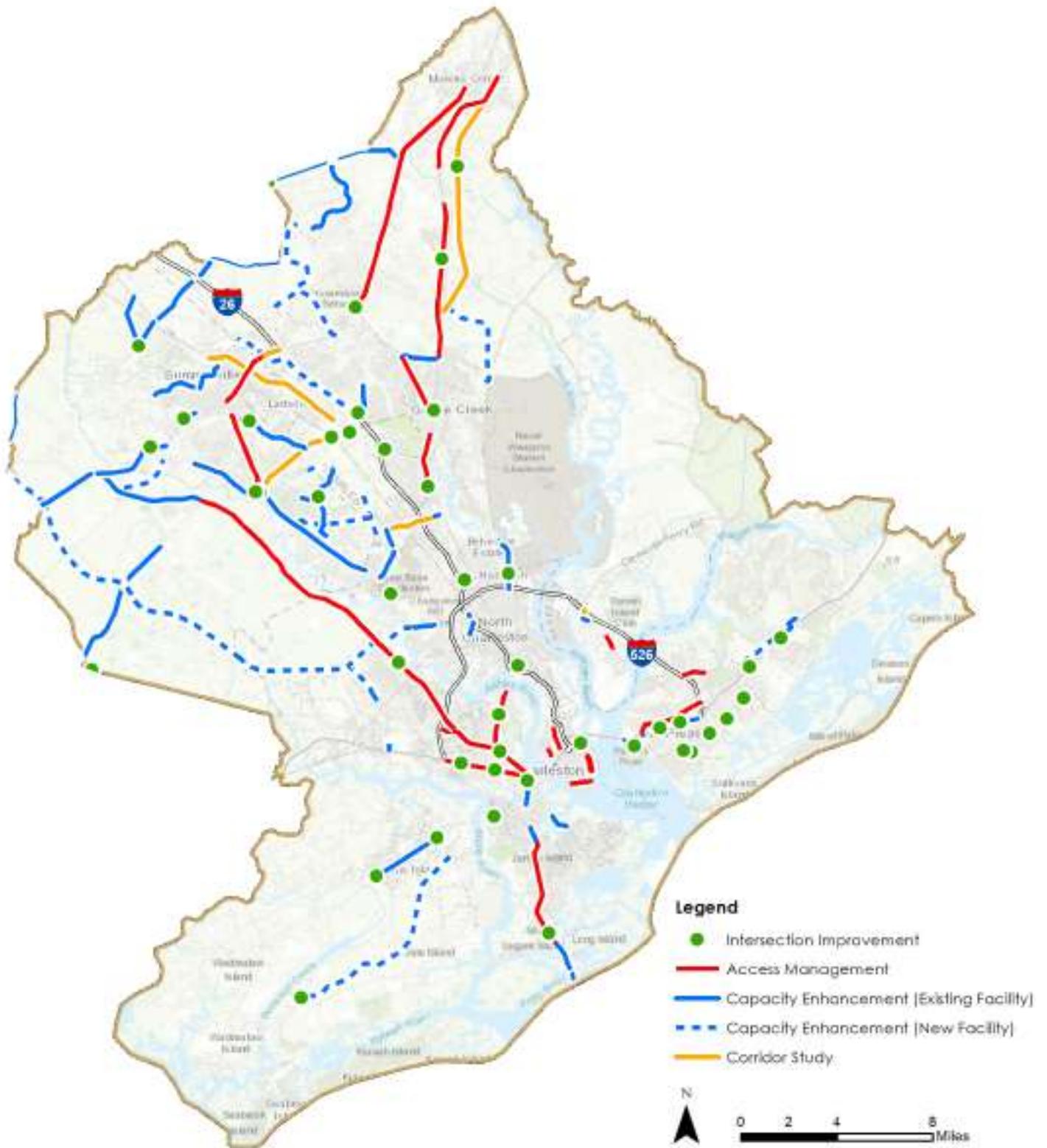
Hot Spots

- US-17 Alternate & Myers Road
- Long Point Road & US-17 North
- Main Road, Bohicket Road & Maybank Highway
- Sol Legare Road, Terns Nest Road & Folly Road
- Ancrum Road, Ladson Road & US-78
- Cosgrove Avenue, Azalea Drive & Interstate 26
- Dorchester Road & Ladson Road
- River Road, Bohicket Road, Betsy Kerrison Parkway & Proposed Sea Island Parkway
- Savannah Highway & Wappoo Road
- Sam Rittenberg Boulevard & Orange Grove Road
- Morrison Drive, Cooper & Lee Street
- Fishburne Street & Hagood Avenue
- Folly Road, Wesley Drive & West Ashley Greenway
- Maybank Highway & Riverland Drive
- St. Andrews Blvd, Old Towne Road & Ashley River Road
- Calhoun Street & East Bay Street

Corridors

- Dorchester Road / SC Highway 642
- Goose Creek Road / US Highway 52
- US Highway 78 / 5th Street
- Rutledge Avenue
- Maybank Highway

Visionary Roadway Improvement Projects



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Pedestrian and Bicycle Directions

The BCDCOG was in the process of completing its regional bicycle and pedestrian plan (*WalkBike BCD*) simultaneously with the development of the CHATS Long-Range Transportation Plan. The two projects were thus able to coordinate heavily; and the recommendations in the LRTP emulate those in the regional bicycle and pedestrian plan. The following are the premier lessons from the active mode planning; see also the more specific comments highlighted at right (“Active Modes: What We Heard”).

We’re Doing this for Our Health

Accessibility to walk and bike facilities helps encourage more of that activity, which in turn is strongly linked to physical and mental health. Walking helps control weight, and therefore a host of related health conditions including cancer rates, diabetes, and hypertension. The disparity of incomes and infrastructure have social equity implications, since some vulnerable populations don’t have access to a private car and therefore depend on walking to destinations or to transit for their livelihoods.

Safety is Paramount

Places that see seasonal and permanent influxes of residents, older populations, and tourists typically see higher incidences of crashes, including those involving pedestrian and bicycle travelers. The CHATS planning area is experiencing several of these trends, the result being that the area has one of the highest incidences of pedestrian and bicyclist crashes in the country.

Infrastructure Needs

Maintenance on long-established sidewalks and the need for new on- and off-road walking and biking paths are evident and were popular topics at public gatherings. Although crossing safety treatments are commonplace throughout the region, in many cases major corridors lack crossing provisions or alternative facilities of any kind.

Active Modes: What We Heard

- **Regional Thinking**
Commenters identified the need for completing regional connectivity links in the bicycle system, including existing greenways.
- **Addressing Safety**
The public was provided a list of safety recommendations to prioritize. Of that list they prioritized additional greenways and trails, decreasing the speed limit on certain roads, and making intersection crossings safer were within the top 5 for BOTH walking and bicycling. These priorities correlate with findings from the public workshops that separated facilities (greenways, multi-use paths) are highly preferred over on-road facilities.
- **Reaching Destinations**
The primary aim of citizens in the CHATS planning area is to safely reach their favorite or most-frequent destinations. These include school, work, medical appointments, parks and trails, downtown, major urban centers, and retail stores.
- **A Smart Investment**
Over 90 percent of online survey respondents agreed that tax dollars should include pedestrian and bicycle amenities and when asked how they would spend \$100 on transportation improvements, they allocated almost \$70 to trails, on-street bike lanes, and sidewalks.
- **Need for Improvement**
A respective 80 and 70 percent of survey respondents disagreed that “biking (or walking) in the CHATS planning area is a safe, practical, and convenient way to get from one place to another.”

Pedestrian and Bicycle Recommendations

The CHATS 2040 LRTP builds on the work done in the regional active transportation master plan, *WalkBike* BCD (2017), which provides the basis for identifying where walking and biking investments should be directed across the tri-county region. The pedestrian and bicycle improvements included in the LRTP are derived from proposed project recommendations contained in *WalkBike* BCD and are identified as either **priority** or **complementary** recommended pedestrian and bicycle projects.

Priority project recommendations are grouped into three “horizon years”- 2020, 2030, and 2040. Such projects are eligible to apply for funding from sources such as the Surface Transportation Block Grant (STBG) for Transportation Alternatives (TA) under the Fixing America’s Surface Transportation (FAST) Act. These projects can also seek funding from Guideshare funds allocated or set aside for Complete Streets concepts which include pedestrian and bicycle improvements, transit projects and intersection improvements. Complementary projects refer to projects that have been identified in *WalkBike* BCD or the People Pedal Plan that coincide with LRTP roadway corridor or intersection improvement recommendations. Where overlap exists between roadway and bicycle and pedestrian recommendations, there are opportunities to reduce redundant design and construction, which ultimately creates efficiencies in getting projects funded and built. The map on page 19 provides the LRTP pedestrian and bicycle recommended projects.

Residents recognize that an improved active transportation environment not only provides mobility choices to relieve congestion and encourages healthy lifestyles, but also spurs economic opportunity, community capital, and an increased quality of life for all residents.

Pedestrian and bicycle recommendations also highlight programs, and facility design recommendations detailed below.

Pedestrian & Bicycle Programs

Bicycle and walking education, encouragement, enforcement, and evaluation programs and policies are fundamental to effective active transportation investment. The following programs and policies of regional significance are more detailed in the *WalkBike* BCD plan:

- Regional Pedestrian & Bicycle Count Programs
- Multi-modal User Maps and Trip Planning
- Regional Ped & Bike Wayfinding Program
- Branding & Tourism Partnerships
- Walk, Bike, and Transit Promotions
- Safety Education and Targeted Enforcement
- Campaign for People Walking & Biking
- Professional Development for Active Transport

- Regional Coordination of Safe Routes to School
- Transportation Demand Management Programs
- Regional Vision Zero Policy
- Regional Active Transportation Council
- Prioritizing Access To Transit
- Annual Regional Active Transportation Forum

Pedestrian & Bicycle Facilities

The proper design of bicycle and pedestrian infrastructure is an essential component of a safe, efficient, active transportation network.

Design for Pedestrians

The CHATS planning area transportation network should accommodate pedestrians with a variety of needs, abilities, and possible impairments. Age is one major factor that affects pedestrians’ physical characteristics, walking speed, and environmental perception and should be taken into consideration when designing pedestrian infrastructure.

Sidewalks: Sidewalks should be provided on both sides of major roadways and on at least one side of collectors and minor arterials or residential streets with three dwelling units per acre or more. Sidewalks are typically constructed out of concrete and are separated from the roadway by a curb and gutter, and preferably a landscaped planting strip area.

Intersections: Pedestrian safety must be a priority at intersections, with well thought-out design utilized to increase visibility, accessibility, separation from traffic, and lighting. A full list of recommended intersection and spot treatments and design guidelines for crossing safety improvements are included in the *WalkBike* BCD plan.

Design for Bicyclists

Similar to motor vehicles, bicyclists and their bicycles exist in a variety of sizes and configurations. These variations occur in the types of vehicle (such as a conventional bicycle, a recumbent bicycle or a tricycle), and behavioral characteristics (such as the comfort level of the bicyclist). The design of a bikeway should consider reasonably expected bicycle types, skill levels, and traffic levels on and around the facility and utilize appropriate dimensions.

Bicycle Parking: In order to encourage bicycling, plentiful, convenient and attractive bicycle parking should be provided. This may be short-term parking of two hours or less, or long-term parking for employees, students, residents, and commuters. While specific bicycle parking locations are not identified in this planning effort, ample bicycle parking should be provided at popular bicycling destinations such as parks, schools, retail areas and other gathering places. Communities can ensure this by including bicycle parking as part of their requirements for new development.

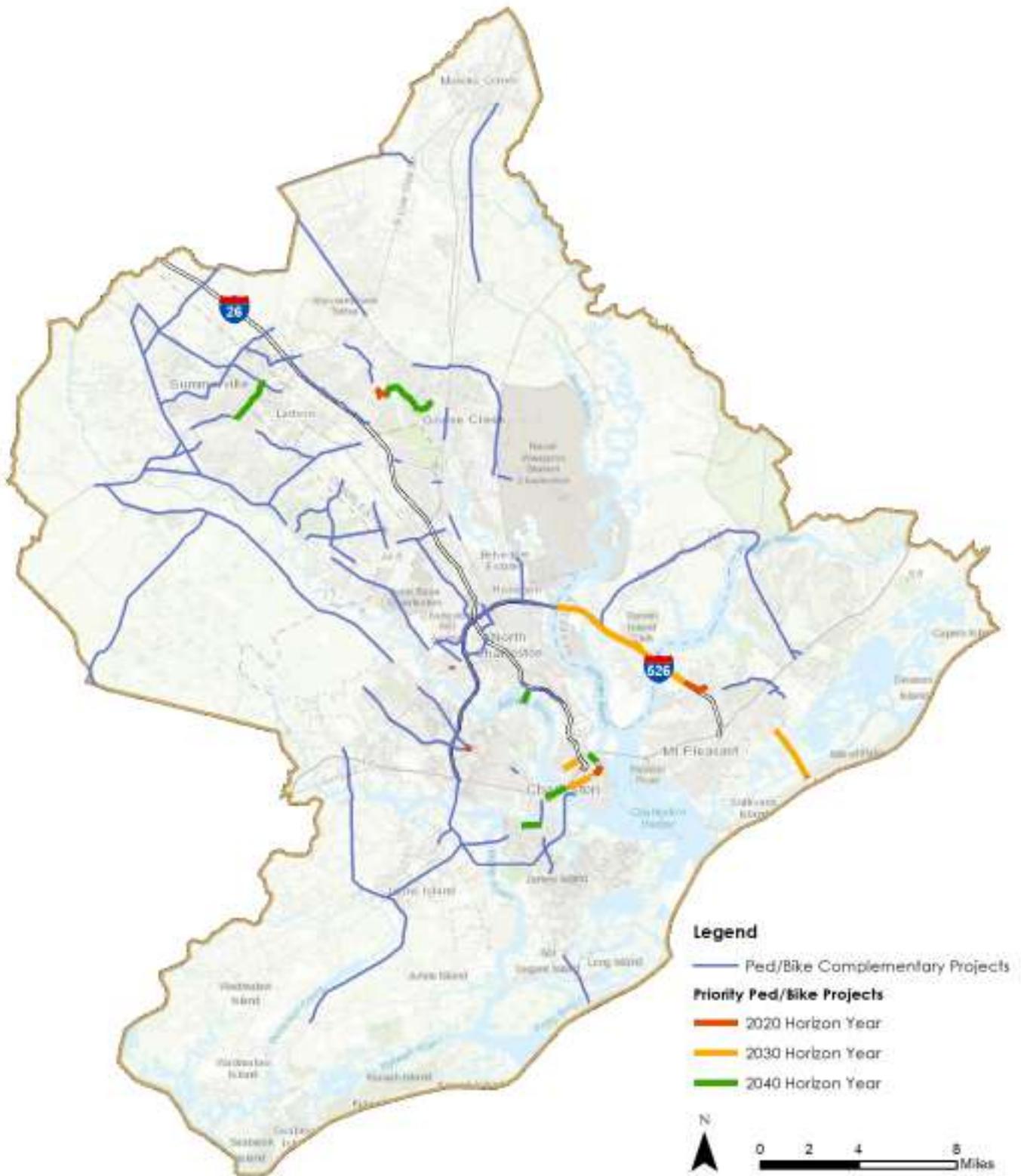
Intersections: Intersections can either be facilitators of or barriers to bicycle transportation. If bicyclists have to cross an uncomfortable intersection to get to a destination, they will be less apt to choose to bicycle there. Well thought-out design must be utilized to promote safety through increased visibility, accessibility, separation from traffic, and lighting. A full list of recommended intersection and spot treatments and design guidelines for crossing safety improvements are included in the *WalkBike* BCD plan.

WalkBike BCD

Plan Recommendations "By The Numbers"



Priority and Complementary Pedestrian and Bicycle Project Recommendations



Freight Directions

On August 8, 2017 a focus group was conducted with representatives of freight transport and emergency response providers. Based on this meeting, congestion/crash assessments, and a review of freight planning processes of eight peer MPOs, several directions for the CHATS Long-Range Transportation Plan shall be pursued by the BCDCOG and its public / private partners (see also text box at right, “What We Heard”).

Moving Freight is Hard Now, and Getting Harder

Freight providers noted that land development approvals are over-burdening an already-congested roadway network, citing Clements Ferry Road, Ashley Phosphate Road, and I-26 as examples. This congestion is hampering freight movement, and costing consumers and companies money both in terms of shipping delays and attracting/retaining truck drivers.

It Will Take a Strong State/Local Partnership to Make Freight Better

The fast growth of new residents and businesses and already-constrained roadway network make improvements obsolete before they are completed. Additional resources are necessary to resolve current congestion problems, and new policies relating growth to roadway capacity to avoid even more serious issues in the future.

Managing Demand Better

Expanding the Port’s operating hours and days (e.g., Saturday) would help shippers avoid some of the worst peak traffic conditions. Allowing some travel on shoulders under certain conditions could offer some current or potential future relief, as should the new intermodal terminal, app-driven scheduling services for moving individual boxes, and HOV/HOT lane technology.

Freight: What We Heard

From Freight Focus Group

- Current congestion levels are costing people and companies a lot of money.
- It’s becoming harder to find drivers willing to deal with congestion in the region.
- Some solutions, including expanding the Port’s operating hours into the evening and major capacity expansions of congested roadways, are going to be very costly to implement.

From Freight Peer Review

- Develop a comprehensive Regional Freight Plan or detailed Freight Element in the LRTP.
- Technology is central to future success.
- Align high-priority freight projects with LRTP.
- Freight = Economic Competitiveness.
- Include freight-related land uses in discussion.
- Emphasize bottleneck locations.
- Port MPOs have Freight Advisory Committees.
- An open, accessible freight plan is rare, but advantageous.
- Spend resources collecting good data.

Freight Recommendations

Develop a Comprehensive Freight Plan or Expanded LRTP Freight Element

It is recommended that the CHATS MPO develop a dedicated freight plan - a plan that considers the latest guidance and innovation. A comprehensive freight plan is beyond the scope of the LRTP for most MPOs, but there are examples of MPOs conducting their own freight plans with state agencies or other partners.

Implement Technology to Achieve Success

The freight focus group identified the use of more technologies such as Graybox, an Uber-like application that pairs truck drivers with shippers, as a mean to increase efficiencies in freight movement. Freight partners should also explore the use of a signal system improvement program that offers prioritization and improved timeliness to emergency responders, transit operators, and, ultimately, freight shippers. The first two entities share much with freight transport operators, and signal preemption and routing have successfully been implemented in other cities and regions (e.g., Memphis, TN).

Align High-Priority Freight Projects with LRTP

This plan considered freight routes in its prioritization of projects; the weight of that factor should be evaluated each time the long-range transportation plan is updated, and the specific routes that freight uses - partitioned into major, minor, and connector facilities - should be clearly identified in the freight plan discussed previously as a freight priority network.

Communicate that Freight = Economic Competitiveness

Success often means involving partners in the planning process. This recommendation is more of a mindset shift and requires a willingness and level of resources on the part of the CHATS MPO staff to attend meetings, share data, and be proactive in taking a leadership role in freight planning.

Invest in Collecting and Sharing Good Data

Development of an open data portal is a crucial step towards planning for freight, communicating its importance to government officials and staff, and providing transparency to stakeholders and the general public. The Delaware Valley Regional Planning Commission open portal for freight data, including waterways, airports, railroads, and freight distribution centers, serves as a good model and starting point in developing an open freight database.

Include Freight-Related Land Uses in Local and Regional Planning Discussions

Freight is not always compatible with other land uses: residential, institutional, and noise or vibration-sensitive uses do not work well with frequent freight movements or other manufacturing and distribution operations. Some communities have identified and established freight “villages” that have supporting infrastructure (e.g., specialized roadway construction standards) that help optimize transportation improvements rather than spreading them more thinly throughout the region. This concentration also creates opportunities for better logistics in supply chain management as well as public transportation services to get workers to their jobs. Conducting a careful review of the many zoning codes around the CHATS planning area to suggest targeted improvements in those communities that have or are likely to support freight operations can help avoid future conflicts.

Emphasize Bottleneck Locations

Unlike the average car driver, truck drivers faced with recurrent congested locations have limited alternative route options given the operating characteristics of a large truck. The MPO should consider developing and advancing solutions for these specific locations, some of which have been identified in this planning process but could be expanded upon in a freight advisory committee process. The MPO and its partners need to establish a dedicated resource towards addressing these problem areas, and strongly communicate the process and successes that come from it.

Transit Directions

Public transportation is an important component of the region's multimodal transportation system. As the region continues to grow and evolve, it is essential that investments in transit be made to provide mobility alternatives for all residents and visitors. Closely coordinated transit and land use planning initiatives will help manage the region's anticipated growth in a sustainable and equitable manner. Several key themes emerging from public input includes:

Address Land Use and Development

Without strong leadership in land development location, density, and design practices, transit will be impractical in many corridors. These practices will need to extend to parking management and pricing strategies in downtown "core" areas to encourage use of alternative modes of travel, and linking existing and emerging nodes of higher-density development with transit.

Major Corridors are Ready for Premium Transit Service

The major west-bound corridors, US-78, US-52, and Dorchester Road, offer potential for a premium transit service such as bus rapid transit. Detailed planning and preliminary designs, as well as likely right-of-way purchases, need to proceed quickly before development makes some options infeasible. This premium service should also strongly consider waterborne transportation services. A Regional Transit Framework Plan (2018) addressing these issues was developed concurrently with the LRTP and is an integral part of this Plan.

Winning Hearts and Minds

People repeatedly spoke of the need to overcome transit stigmas, and improve the image of public transportation to show that transit can be for everyone.

One Size Doesn't Fit All

Park & Rides, BRT, ferry service, expanded fixed route, and improvements to the existing services are important to provide mobility options when it comes to transit, especially in an area where the natural and built environment across multiple jurisdictions creates impediments to effective transit service.

Transit: What We Heard

- Bus Rapid Transit (BRT) or other fixed guideway rapid transit service for the I-26 Corridor; US-17 Corridor is also a strong candidate for high-quality transit service.
- More/Better service for the beaches.
- Existing services often carry a poor image with choice riders, and are not competitive with auto travel currently in outlying communities.
- Waterborne services, including access to port areas and medical facilities.
- Increased development of park-and-ride lots and services, which aligns to the recent Park and Ride Study conducted by the BCDCOG.
- Need to eliminate stigma associated with transit services.
- Better information for, and marketing of, the current system and services is important.

Transit Recommendations

Transit recommendations were developed based on an analysis of existing transit conditions, a review of previous and ongoing transit planning initiatives, and stakeholder input. Local agencies and the community have identified a goal to replace the fixed route fleet with zero emission, battery electric transit buses. Based on this analysis, general strategies were developed regarding improvements to existing service, implementation of new modes and corridor expansion projects, and transit supportive policies, as discussed below.

Service Improvements

- **Improve transit access to major employment centers:** The Charleston region is home to many major employers in the defense, health care, manufacturing, and tourism sectors. Connecting workers to employment centers is critical to sustaining economic growth into the future. Improved transit access to employment is a key need that can be addressed through enhanced local and express service, including the development of new park-and-ride lots throughout the region.
- **Enhance local service to provide improved frequency and travel times:** Travel time competitiveness is a key component that influences one's decision to use public transportation versus other modes, especially in the case of "choice" riders who have access to a personal automobile. For choice and transit dependent riders alike, however, transit trip times that are competitive with other modes enhance customer satisfaction and ultimately serve as a catalyst to attracting ridership to the system. Improvements in local service frequency should be prioritized along with technology enhancements to the roadway network to reduce delay such as signal timing modifications and transit signal priority on key routes.
- **Build upon success of DASH circulator service to expand activity center circulators into new markets:** CARTA's DASH service has proven to be a successful model for providing mobility in Charleston's urban core. As neighborhoods in the Upper Peninsula, Neck Area, and West Ashley continue to develop and add density, similar service models should be explored as viable transportation alternatives. Other activity centers such as major retail and employment centers, colleges and universities, and tourist destinations such as the beaches could benefit from activity center circulators or trolley service that tie into the core network.
- **Continue investment in fleet modernization and state-of-good-repair needs:** CARTA is actively working towards modernizing its aging local and express bus fleet. As the CARTA and TCL systems expand in the future, emphasis should be placed on maintaining an asset management and fleet replacement program in accordance with FTA regulations and industry standards to ensure system safety and reliability. It is recommended that the Fixed Route Vehicles are replaced with zero emissions battery electric buses or other clean fuel alternatives.
- **Enhance bus stop amenities and pedestrian access to transit network:** A relatively small percentage of bus stops throughout the region are equipped with shelters and many are lacking in adequate pedestrian access facilities. Such amenities enhance safety, system usability, and customer satisfaction, and should be prioritized to the extent possible, especially at high-volume stops.
- Additional recommended, future actions include making the LowGotober event annual; identifying additional, permanent sources of financial support for the LowCountry Go programs; continuing to build upon and enhance the www.ridegolow.com app resource; and consider partnering with private peer-to-peer rideshare companies to integrate public and private sector ridesharing efforts.

New Modes & Technologies / Corridor Expansion Projects

- **Implement the Lowcountry Rapid Transit BRT and explore new corridors for rapid transit implementation:** The region's first rapid transit corridor, the Lowcountry Rapid Transit BRT (recommended by i-26ALT), is an important first step in developing a network of high capacity public transportation lines in the Charleston region. The project is moving forward into project development. BCDCOG has also studied the viability of additional corridors and identified a future high capacity transit network through its *Regional Transit Framework Plan (2018)*.
- **Explore commuter ferry as a transportation alternative:** The Charleston region's waterways present an opportunity to add commuter ferry as an alternative transportation mode within the overall transportation network. An initiative is currently underway to study the viability of commuter ferry between various points throughout the region, including downtown Charleston, North Charleston, West Ashley, Mount Pleasant, James Island, and Daniel Island. The outcome of this effort should inform the identification and programming of new commuter ferry routes, as well as the supporting local service improvements necessary to ensure its success.

Policy Strategies

- **Public outreach and marketing:** As evidenced in data and comments received through public and stakeholder input, the commuting habits of residents in the region is overwhelmingly auto-centric, with many transit riders relying on the service out of need rather than choice. A general lack of awareness of available transit services, coupled with a lack of incentives to explore alternative forms of travel, perpetuates this trend. CARTA, TCL and other regional stakeholders should explore opportunities to expand marketing and public outreach efforts to promote the various benefits of public transportation, especially to niche markets such as commuters, universities, and visitors. Further engagement with local elected officials and major employers to explore opportunities to develop programs that incentivize transit use,

such as subsidized transit passes, is another key strategy to encourage ridership among choice riders.

- **Continue to strengthen coordination between CARTA and TCL:** The 2013 Transit Consolidation Feasibility Analysis identified opportunities for closer coordination between the CARTA and TCL services. While full consolidation is potentially a viable long-term outcome, the study recommended an incremental approach with increased levels of coordination phased in over time. In the near-term, CARTA and TCL should seek to identify further opportunities for service coordination to enhance mobility throughout the region.
- **Coordinate land use and transportation policy at the regional and local levels:** As the region moves forward towards implementing its first BRT corridor, it is imperative that supportive land use policies are in place at the local level to fully capitalize on this transportation investment. Effective Transit Oriented Development (TOD) land use policies that encourage higher density, mixed use development around planned BRT stations and intermodal hubs will serve as a catalyst for attracting and retaining ridership. To achieve this goal, local zoning regulations should be reviewed and updated as necessary to incorporate TOD design principles around station-area nodes to the extent possible within the local planning context. While emphasizing TOD is a key objective along rapid transit corridors, an opportunity also exists to further incorporate transit-supportive amenities such as set-asides for bus stops or shelters, park-and-ride lots, and pedestrian access facilities into site plan review processes in jurisdictions throughout the entire service area. At the regional level, land use and transit planning initiatives should be closely coordinated to ensure that appropriate levels of transit investment serve future development patterns.

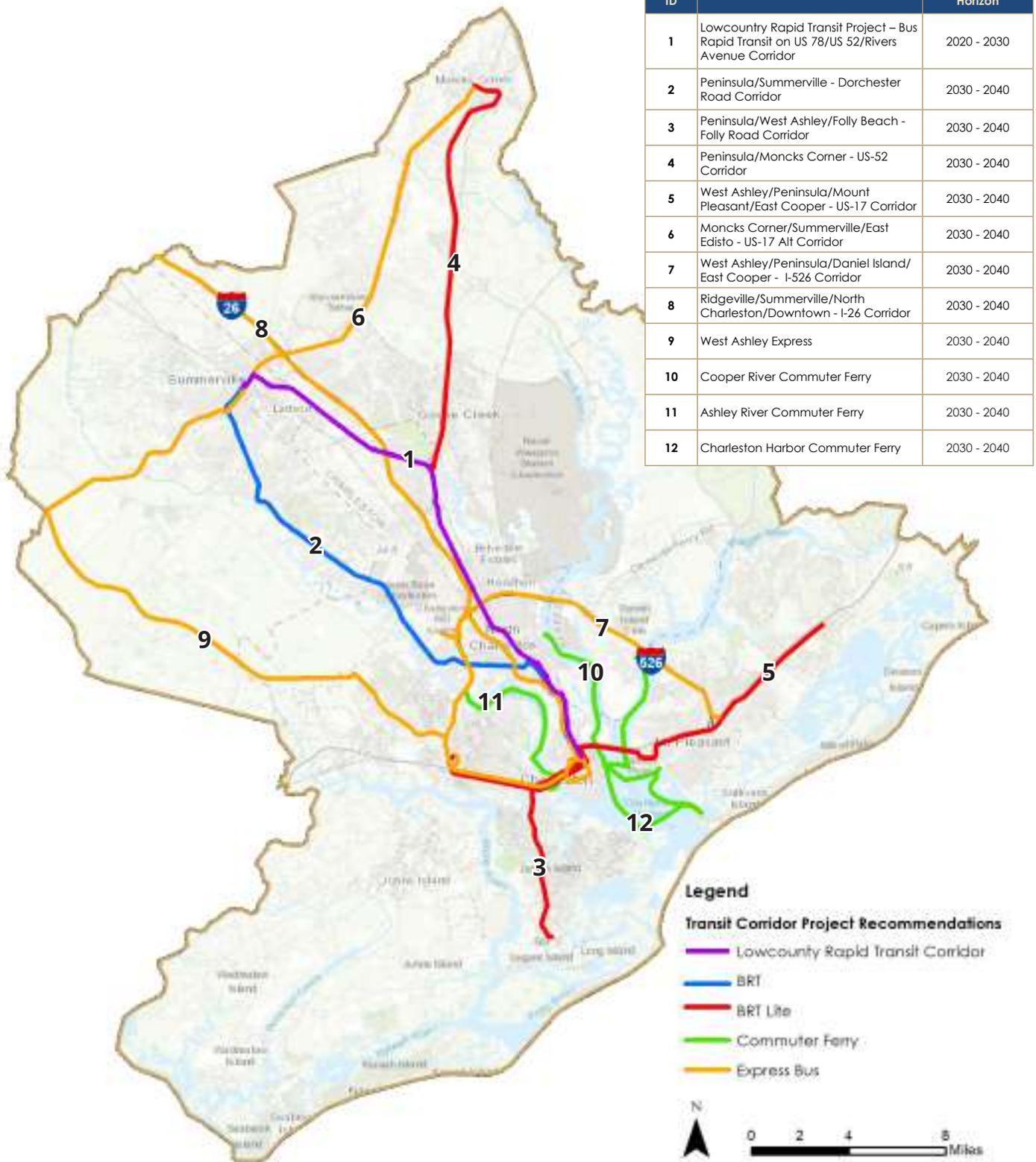
Recommended Transit Vision Projects

Based on the needs and strategies evaluated, twelve long-range transit vision projects for the region were identified and are presented in the map on page 26. These recommended capital investment projects fall into four categories:

- **High Capacity Rapid Transit:** High capacity rapid transit projects entail fixed-guideway modes, such as BRT, operating in exclusive or semi-exclusive lanes with enhanced stations and extensive use of transit signal priority treatments. High capacity projects are envisioned to provide frequent, all-day service, seven days per week.
- **Medium Capacity Rapid Transit:** Medium capacity rapid transit projects predominantly operate in shared lanes with general traffic, with “BRT-lite” treatments including limited transit signal priority, queue jump lanes at selected intersections, and enhanced station stops. Medium capacity projects are envisioned to provide frequent, all-day service, seven days per week.
- **Commuter Express Bus:** Commuter express bus projects typically operate in general purpose or HOV/managed travel lanes on limited access highway facilities and provide service between park-and-ride lots and major employment and activity centers. Express service is typically geared towards the weekday peak period commuter market; however midday trips may be provided as demand warrants.
- **Commuter Ferry:** Commuter ferry projects serve dock locations throughout the region using pedestrian-only vessels. Commuter ferry projects serve both the commuter and visitor markets and will include park-and-ride facilities at select dock locations.

Of the transit vision projects identified, the Lowcountry Rapid Transit BRT project has identified funding and is preparing to request entry into FTA’s Capital Investment Grant program’s project development and environmental review phase, and thus is included in the fiscally-constrained plan. A more detailed evaluation of the remaining vision project corridors has been addressed in the BCDCOG’s *Regional Transit Framework Plan (2018)*. The result of this effort is incorporated as part of the CHATS 2040 LRTP update.

Recommended Transit Vision Corridor Projects



Implementation and Funding

Implementation

In addition to projects already planned with funding and in various stages of development, the CHATS 2040 LRTP evaluated 139 visionary roadway improvement projects grouped into four major project categories: Capacity Enhancement projects, which includes existing and new roadway facilities (63), Corridor Studies (7), Access Management projects (25) and Intersection Improvement projects (44).

Projects were identified and evaluated through an extensive and collaborative process that brought together priorities of regional decision-makers with the preferences of the general public. Projects were evaluated and prioritized across 12 project criteria, based on State Act 114, in accordance with SCDOT policy. Each criterion designated by the CHATS Study Team and Policy Committee were assigned a “weight” based on its relative importance. The weighting was approved by the SCDOT Commission. The project criteria and associated “weighting” (percent priority) are as follows:

- Congestion Relief (20%)
- Supports Transit (10%)
- Improves Freight Mobility (10%)
- Improves Existing Infrastructure (10%)
- Addresses Safety (8%)
- Evacuation Route (4%)
- Financial Viability (10%)
- Environmental Impact Mitigation (8%)
- Supports Bicycling (3%)
- Supports Walking (3%)
- Supports Land Use (7%)
- Supports Economic Development (7%)

Funding

The CHATS MPO currently obtains the majority of its programmed funding through federal and state guideshare funding. Guideshare funds are distributed from SCDOT to the ten MPOs and Councils of Governments throughout the state. Allocation of guideshare funds to the various planning regions are formulae based, and are proportional to the current and projected regional population and vehicle miles traveled within each area. As a result, guideshare funding levels are not expected to increase substantially over the life of this Plan.

In today’s financial environment it has become apparent that traditional transportation funding sources, like State DOT revenues, alone will not sufficiently fund all transportation needs for a region. That said, the BCD region has strived to offset the need for transportation improvements by supplementing state and federal resources through the use of Transportation Sales Tax and Impact Fees. CHATS and other local decision-makers within the region must consider alternative funding sources if there is a local desire to expand its investment in transportation. Alternative funding measures being considered locally as well as applied around the state and nation are reviewed in the Plan.

The Implementation and Funding section further highlights the recommended roadway improvement projects selected for Guideshare funding for the Plan period. The total amount dedicated to projects for the period 2021-2040 is \$275 million, of which \$132.5 million is applied between 2021-2030, and \$142.5 million is applied between 2031-2040. The fiscally constrained projects are presented in the tables and map provided on pages 29-31. The financial plan also reflects the CHATS commitment to develop a multimodal transportation system by providing Guideshare funds set-aside for Complete Streets improvement projects and transit related expenditures.

Updates of transportation and comprehensive plans are on different schedules, but are usually required every five to ten years. In between these major update cycles, agencies can continue building on the recommendations contained in the plan, not only in terms of funding, design, and construction, but working with their many partners to improve local practices that can make an even larger shift towards a healthy, vibrant, and active transportation system and community.

The BCDCOG and partnering organizations within the CHATS planning area already have many policies describing communication practices, design standards, and other items discussed in this section. However, during the course of the planning process, some places where enhancements to policies can be made, were inevitably discussed. The purpose of the policy and practices section is to ensure that projects are implemented with best practices in mind and offers guidance to issues that may arise during project development. The following are not intended to critique current practices, or supersede them, but instead to suggest enhanced practices that would support the physical recommendations contained in this plan.

A few guiding principles should be followed to identify and describe the policy topics:

- Acknowledge what is being done now;
- Create specific and actionable steps that, even if they are not followed to the letter, are achievable, get people thinking, and get them excited about their work and their community; and
- Develop the policy topics consistently, with issues, importance, and strategies for each topic, as well as examples of best practices that can provide insight from other places.

Lastly, linkages between some of the topics, such as communication, performance, and equitable engagement, occur frequently. Pursuing and achieving multiple action items on some topics as a “package” will enhance the return on investment.

More detailed policy recommendations for stormwater best management practices (BMPs), complete street design and policy implementation, and access management BMPs and policy strategies are included in Appendix B of the LRTP.

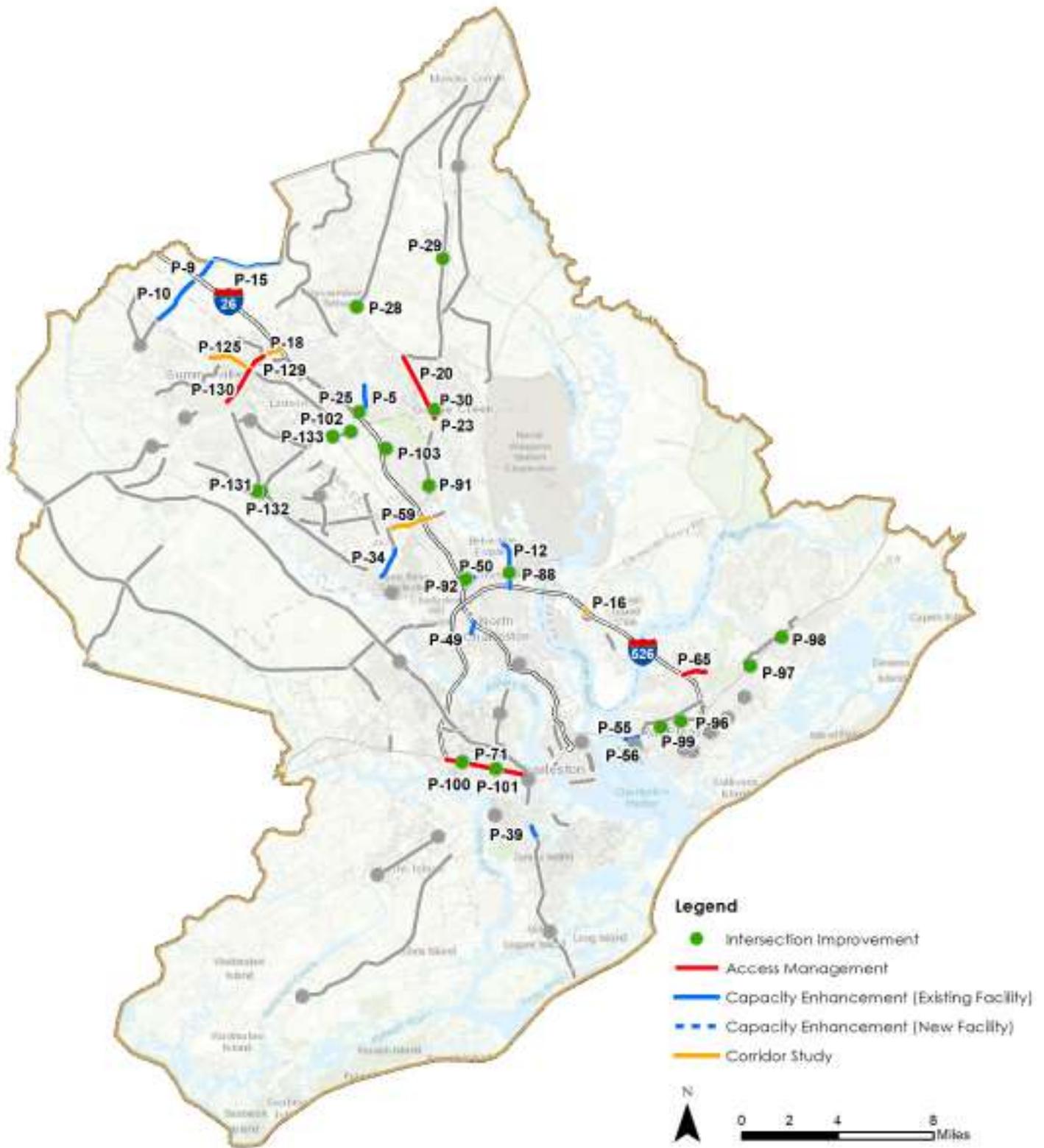
Fiscally-Constrained Roadway Improvement Projects for Period 2021-2030

ID	Location	Project Category	Project Limits	Length (Miles)	Cost (1000s)	Rank
P-49	Montague Ave	Capacity Enhancement	International Blvd to I-26 Interchange	0.50	\$10,000	1
P-91	Rivers Ave & Greenridge Rd	Intersection Improvement	-	-	\$1,500	2
P-12	North Rhett Ave	Capacity Enhancement	I-526 Interchange to Yeamans Hall Rd	1.93	\$42,185	3
P-18	US-17A / North Main St	Corridor Study	I-26 Interchange to Berlin Myers Pkwy	0.77	\$8,705	4
P-97	US-17 & Long Point Rd	Intersection Improvement	-	-	\$3,000	5
P-96	US-17 & Anna Knapp Blvd.	Intersection Improvement	-	-	\$1,500	6
P-130	US-17A / South Main St	Access Management	Carolina St to US-78	1.67	\$2,512	7
P-131	Dorchester Rd & Ladson Rd	Intersection Improvement	-	-	\$2,000	8
P-9	Jedburg Rd	Capacity Enhancement	Wildgame Rd to Dropoff Dr	0.91	\$7,863	9
P-10	Jedburg Rd	Capacity Enhancement	Old Dairy Rd to US-78	2.34	\$20,544	
P-28	US-17A & US-176	Intersection Improvement	-	-	\$5,000	10
P-16	Clements Ferry Rd	Corridor Study	I-526 Interchange to St. Thomas Island Dr	0.39	\$2,786	11
P-50	Remount Rd	Capacity Enhancement	Yeamans Hall Rd to Rivers Ave	0.35	\$8,427	12
P-30	US-52 & Liberty Hall Rd	Intersection Improvement	-	-	\$2,000	13
P-5	College Park Rd	Capacity Enhancement	Crowfield Blvd to I-26 Interchange	1.34	\$14,532	14
ESTIMATED COST					\$132,554	

Fiscally-Constrained Roadway Improvement Projects for Period 2031-2040

ID	Location	Project Category	Project Limits	Length (Miles)	Cost (1000s)	Rank
P-102	US-78 & Ladson Rd / Ancrum Rd	Intersection Improvement	-	-	\$4,000	15
P-65	Long Point Rd	Access Management	I-526 to Whipple Rd	0.97	\$1,453	16
P-133	Ladson Rd & Lincolnville Rd	Intersection Improvement	-	-	\$2,000	17
P-23	US-52	Access Management	Button Hall Ave to Red Bank Rd	0.55	\$823	18
P-100	US-17 & Wappoo Rd	Intersection Improvement	-	-	\$1,500	19
P-39	Folly Rd	Capacity Enhancement	SC-30 Off-Ramp to Highland Ave	0.64	\$10,000	20
P-99	US-17 & Shelmore Blvd	Intersection Improvement	-	-	\$1,500	21
P-20	US-176	Access Management	Old Mt. Holly Rd to N. Goose Creek Blvd	2.86	\$4,291	22
P-59	Ashley Phosphate Rd	Corridor Study	Cross County Rd to Rivers Ave	2.01	\$14,139	23
P-101	US-17 & West Oak Forest Dr US-17 & Farmfield Ave	Intersection Improvement	-	-	\$1,500	24
P-132	Dorchester Rd & Old Trolley Rd	Intersection Improvement	-	-	\$5,000	25
P-29	US-52 & Cypress Gardens Rd	Intersection Improvement	-	-	\$1,000	26
P-34	Cross County Rd	Capacity Enhancement	Dorchester Rd to Hill Park Dr	1.47	\$12,097	27
P-98	US-17 & Porcher's Bluff Rd	Intersection Improvement	-	-	\$4,000	28
P-92	Rivers Ave & Remount Rd	Intersection Improvement	-	-	\$5,000	29
P-88	Remount Rd & Rhett Ave	Intersection Improvement	-	-	\$4,000	30
P-56	US-17 / Ravenel Bridge Southbound Approach	Capacity Enhancement	Magrath Darby Blvd to Wingo Way On-Ramp	0.27	\$3,034	31
P-55	US-17 / Ravenel Bridge Northbound Off-Ramp	Capacity Enhancement	US-17/Coleman Split to Sessions Way	0.55	\$3,775	32
P-129	US-17A / North Main St	Access Management	5th St to Berlin Myers Pkwy	0.81	\$1,212	33
P-71	Savannah Highway	Access Management	Wesley Dr to I-526	3.49	\$5,239	34
P-103	US-78 / University Blvd & Medical Plaza Dr	Intersection Improvement	-	-	\$5,000	35
P-15	Wildgame Rd	Capacity Enhancement	Jedburg Rd to Sheep Island Rd	2.78	\$21,922	36
P-125	US-78 / 5th St	Corridor Study	W. Richardson Ave to Berlin Myers Pkwy	2.18	\$25,964	37
P-25	College Park Rd & Treeland Dr	Intersection Improvement	-	-	\$4,000	38
ESTIMATED COST					\$142,448	

Fiscally-Constrained Roadway Improvement Projects for Period 2021-2040



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