

# THE LONG-RANGE TRANSPORTATION PLAN



**LRTP**

January 2019

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## ACKNOWLEDGEMENTS

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*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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Alta Planning + Design  
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# INTRODUCTION & HISTORY

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*"I'm going back to dignity and grace. I'm going back to Charleston, where I belong." Rhett Butler*

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# THE LONG-RANGE TRANSPORTATION PLAN

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

## 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. 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, 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 will fully evolve the project recommendations, financing, phasing, and other implementation ideas.



**Isle of Palms**

Both tourists and residents of the bedroom town are attracted to the charm and natural beauty of this barrier island.



*Chucka Nc.*

**Seabrook Island**

A private, welcoming gated community on a barrier island that celebrates and protects a rich and vibrant natural ecosystem.



*Ren Buford.*

**Folly Beach**

Also known to locals as "the Edge of America," this beach town has become one of the more popular surf spots along the East Coast.



**Map 1-1: Charleston Area Transportation Study (CHATS) Planning Area**



# history & context

Within 100 years of the founding of "Charles Town", the port city had become the fourth largest in the nation and had an economy that was the largest and wealthiest of any city south of Philadelphia. The CHATS region continues to rely on the advantages provided by the harbor while also being recognized as a premier destination for travel and tourism.



**1680**

Charles Town was the first American city to use the Grand Model, ensuring the settlement was an "exact regular town" with "broad and straight" streets.

**1865**

Until surrender, the city was repeatedly under attack causing severe damage to the City's infrastructure.

King Charles granted the land to his eight friends, The Lord Proprietors, in 1663 and the community, "Charles Town", was established 7 years later.

The name is changed to Charleston following the Revolutionary War.

A major earthquake causes more destruction in the wake of Civil War. More than 2,000 buildings were damaged, and over 100 destroyed.

**1670**

**1783**

**1886**



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*"Come quickly, have found heaven."*

Artist Alfred Hutton to his wife upon visiting Charleston

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**1996**

Charleston Naval Shipyard closes. A portion of the facility is used to support Joint Base Charleston.

**2005**

The Arthur J. Ravenel Bridge is completed, improving terminal access at the ports.

Charleston Naval Shipyard begins operations as a dry dock. By the 1990s it is ranked as the largest employer of civilians in South Carolina.

The Noiset Community Master Plan is developed for a sustainable mixed-use community on the former property of the Charleston Naval Shipyard.

Federal funding approved to dredge Charleston Harbor, improving the port's ability to accommodate the largest container ships.

**1901**

**2005**

**2017**

## History of the Charleston Planning Area

Charleston was the leading city in the colonial south due to its successful harbor servicing a wealth of agricultural exports (rice and cotton), and the many wealthy merchants and landowners who resided in the City. When the City's economy began to decline, due to lower cotton prices and increasing competition from other ports, business leaders and merchants turned to the railroad in 1830, though the rail would not be allowed to reach the docks until 1881.

The City lost its regional dominance after the destruction of the Civil War, but remained an important Atlantic port. Both statewide and local initiatives lead to vast improvements in the street system. In 1931, a zoning ordinance designated 23 blocks of the downtown area as "Old and Historic Charleston," making it one of the earliest models for historic districts in the country.

Charleston's stagnating economy was boosted by the establishment of a major naval base and conversion of the Charleston Municipal Airport to the now Joint Base Charleston, a Navy and an Air Force Base.

Prior to its announced closure in 1993, the Charleston Naval Base was ranked as one of the largest employers in South Carolina, with a regional economic impact of \$1.4 billion. Following the closure of the Naval Base, community parks were built on the old base grounds, including the popular Riverfront Park in North Charleston, while many of the buildings were marketed to private industrial interests.

North Charleston has incorporated areas in Charleston and Dorchester counties. The city serves as one of South Carolina's major industrial centers, including Boeing which began operations in 2011, and is the state's leader in retail sales. North Charleston continues to expand its inventory of 4-star hotel accommodations in response to a booming tourism market.

Multiple areas in this region attract a wide variety of constant guests. Tourists began flocking to the area in the 1970s due to interest in historic landmarks and neighborhoods, beautifully planned commercial areas, a number of gorgeous beaches, golf courses, and naturally stunning landscapes.



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)



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)



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)



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 is a bedroom community that developed in a rural region and continues to experience rapid growth in Charleston County. (Hanahan Amphitheater)



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)



## The Port City

The iconic Arthur Ravenel Jr. cable-stayed bridge was finished in 2005. Since its completion, it is the third-longest in the Western Hemisphere. The bridge crosses the Cooper River, connecting Charleston to Mount Pleasant. It replaced two truss bridges that were unable to accommodate the height of modern shipping vessels, challenging access to port terminals.

The port's facilities are located within three municipalities, Charleston, North Charleston, and Mount Pleasant. A 2015 economic development study reported the Port of Charleston generates \$53 billion in annual economic activity and supports over 185,000 jobs statewide. In 2017, federal funding was approved to dredge the harbor, an effort to accommodate the larger post-Panamax container ships.

## The Holy City



Mother Emanuel AME Church



The Huguenot Church



Circular Congregation Church



Cathedral of St. John the Baptist

Due to a philosophy of religious tolerance, the area attracted a diverse range of faiths, becoming known as "The Holy City." These beautiful churches are one aspect of the rich architectural heritage that defines Charleston.



# public engagement

Multiple strategies were implemented to ensure maximum public engagement, including symposium-style meetings, traveling road shows, stakeholder interviews, questionnaires from community representatives, and marketing of an online survey. The following pages are highlights from the **Engage and Direct Report** that can be found on the project website.

## IMPROVE TRANSPORTATION IN THE CHARLESTON REGION

Join us for one or more meetings to discuss transportation issues that matter to you. Information gathered at the meetings will be used to create guiding principles and objectives for the Plan.

### WHAT

**Project Symposium**  
The BCDCOG is in the process of completing a Long-Range Transportation Plan for the Charleston Region. Join us for a fun and informative session to share your thoughts on how to improve transportation.

### WHEN/ WHERE

July 19, 2017 6:00pm-8:00pm  
Stein Ballroom, College of Charleston  
71 George Street

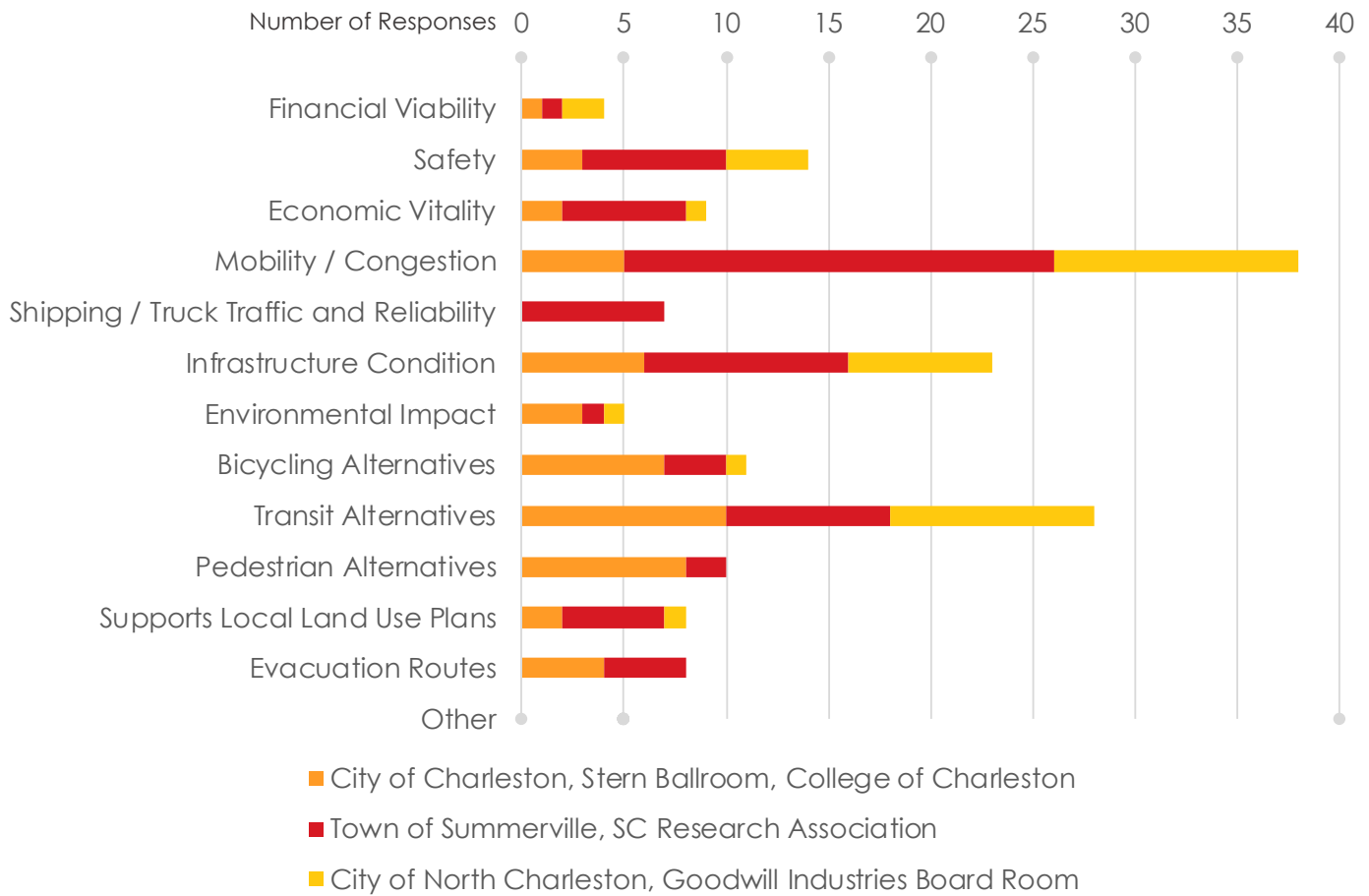
July 21, 2017 8:00am-10:00am  
SC Research Association  
315 Sigma / Dr. Summerville

July 21, 2017 12:00pm-2:00pm  
Goodwill Industries Board Room  
2150 Eagle Dr. / North Charleston  
(behind the store at 6603 Rives Ave)

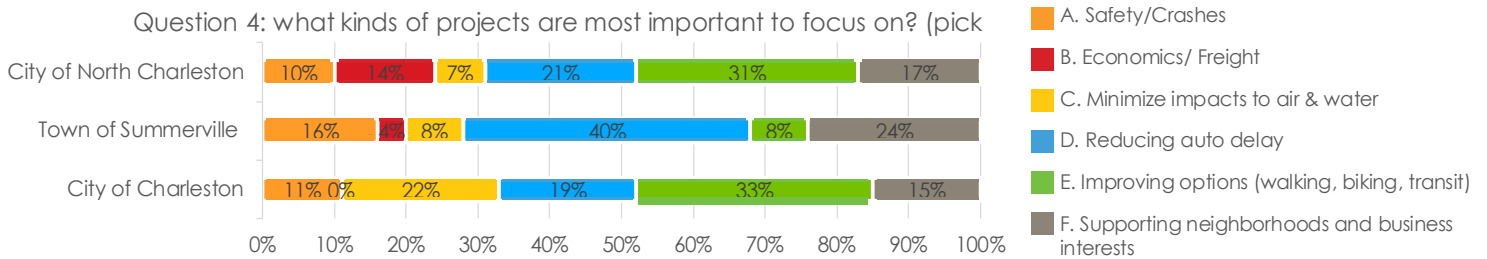


The project team hosted three public symposia where direct invitations to stakeholders supplemented standard public notifications. The adjacent pages summarize their responses to some of the questions posed in an instant survey (polling) regarding transportation action preferences and overall transportation performance priorities.

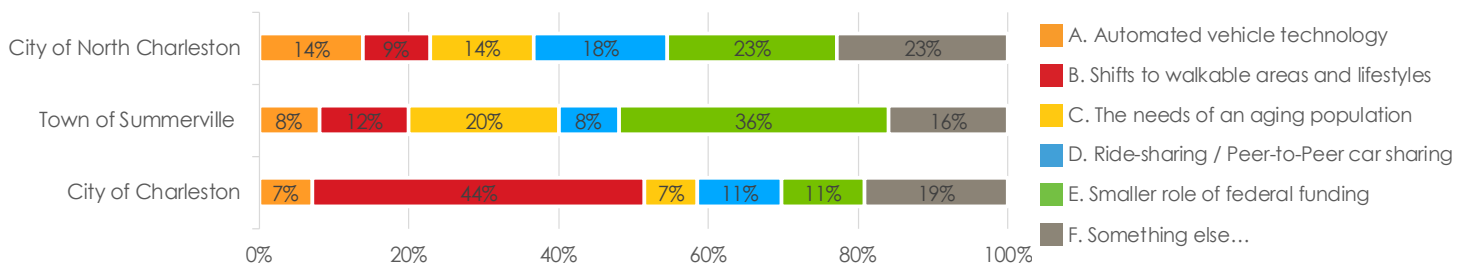
**Figure 1-1: Priorities Identified for the CHATS Planning Region**



**Figure 1-2: Survey Question**  
**What kinds of projects are most important to focus on? (Pick Two)**

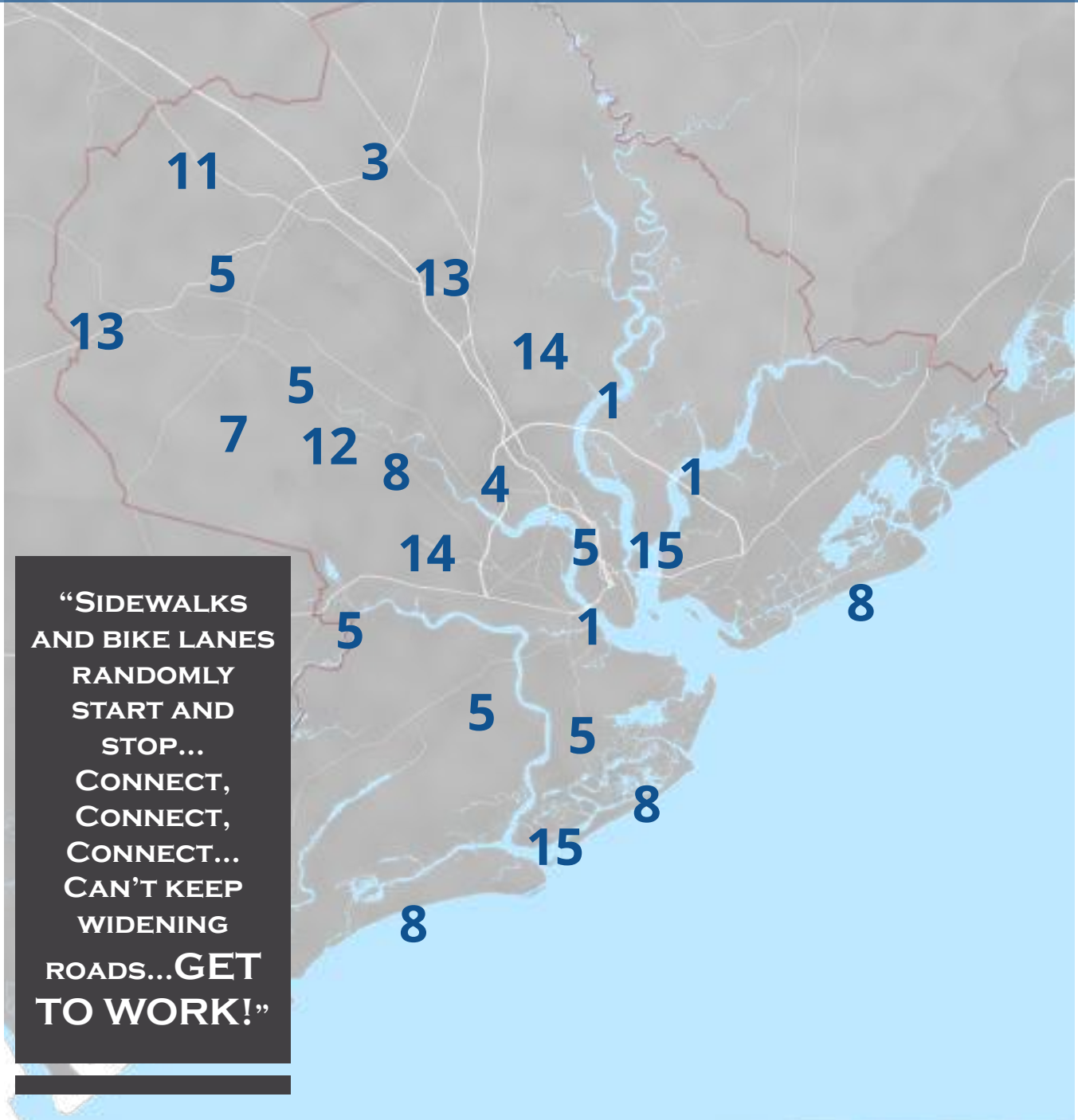


**Figure 1-3: Survey Question**  
**Which big trend has the most impact on this region's transportation future?**





*Symposium participants were also asked to mark up maps to identify problem areas and/or share ideas for improving transportation specifics. Here are some of the most-often cited comments from that exercise.*

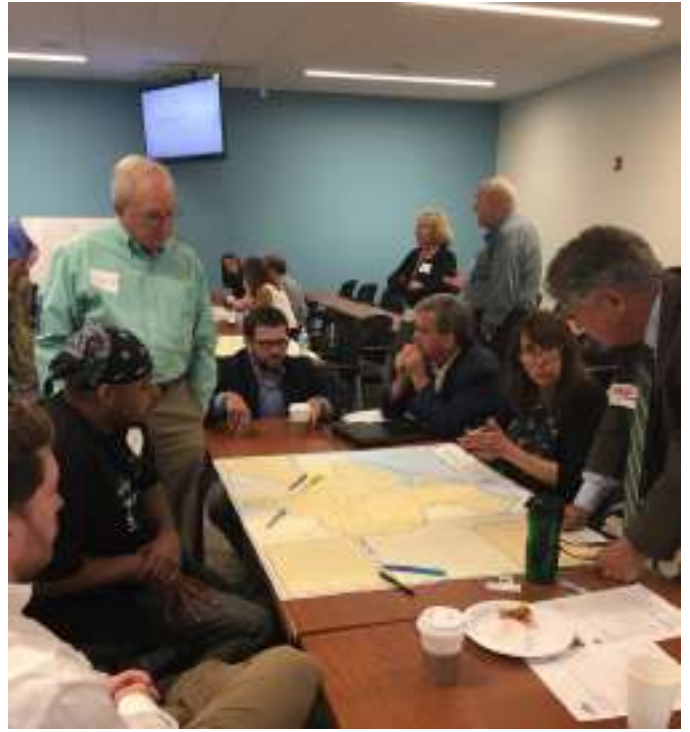


**“SIDEWALKS  
AND BIKE LANES  
RANDOMLY  
START AND  
STOP...  
CONNECT,  
CONNECT,  
CONNECT...  
CAN’T KEEP  
WIDENING  
ROADS...GET  
TO WORK!”**





*A young resident participates in a traveling road show (left). Additional residents fill out surveys during a traveling road show at the downtown transit center (page right). Participants in a project-symposium collaborate on a map exercise (below).*





# Traveling Road Shows

Maximizing public participation throughout the CHATS planning area is vital to the success of the LRTP process. The study area is made up of a diverse population with many communities that are traditionally underserved in civic engagement processes. Outreach to these communities often requires more non-traditional techniques and methods for effective engagement.

A process was conducted that engaged close to 400 individuals through one-on-one discussions; distribution of the project fact sheet and survey; and an interactive map exercise throughout the underserved communities of Berkeley, Dorchester, and Charleston counties. The focus was to bring awareness to the LRTP and to provide input opportunities. Approximately 700 fact sheets and surveys were distributed at places of worship, employment centers, the downtown transit center, housing developments, and hotels/motels. A total of 252 surveys were completed during this process.



## Responses from Road Shows

### Highways and Roadways

- Repair interstates and roadways first
- Ashley Phosphate Rd. and Dorchester Rd. are two of the most congested roads in the region
- Install signals/lights for entering the interstate to manage congestion and eliminate bottlenecks
- Reposition merging/exit signage for more notice
- Restrict freight trucks to right lanes only
- Synchronize lights on Montague Ave. to help with traffic flow; especially near I-26
- Add another traffic light to manage congestion at International Blvd. near the railroad crossing
- Reduce and enforce the speed limit on Orange Grove Rd. from West Ashley
- Consider adding more bridges across the river for better accessibility to West Ashley
- Downtown Charleston streets are too narrow for on street parking and other options should be considered such as more parking decks
- Identify more than one emergency exit for natural disasters

### Transit

- Extend transit to the growing and developing communities of Hanahan, Goose Creek, Summerville, James Island, Daniel Island, and Kiawah Island
- Improve the efficiency of the Teleride program
- Add shoulders/platforms, shelters and lighting at bus stops
- Improve CARTA trip planning communications through technology (ex. apps)
- Provide more buses for Routes 10, 11 and 33 during peak hours (7:30-8:30 am and 3:00-6:00 pm) for on-time arrivals and improve headways
- Consider providing earlier and later bus service to employment centers such as Boeing and Tanger Outlets

### Other

- Encourage carpooling and ridesharing; particularly around schools where congestion is heavy
- Consider a dedicated funding source for transit and other transportation improvements

**Figure 1-4: Survey Results Infographic**

**SURVEY RESULTS**

We surveyed 2,160 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 DO YOU THINK IS THE MOST EFFECTIVE WAY TO REDUCE CONGESTION IN OUR REGION?**



Expand the transit system (16%)



Improve connectivity & expand highway (14%)

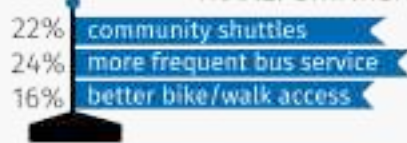


Improve operation of existing highway facilities (coordinate traffic signals, etc.) (14%)



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

**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.”



**traffic and congestion (68%)**

“provide concurrency of transportation system as growth occurs”

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

“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...**



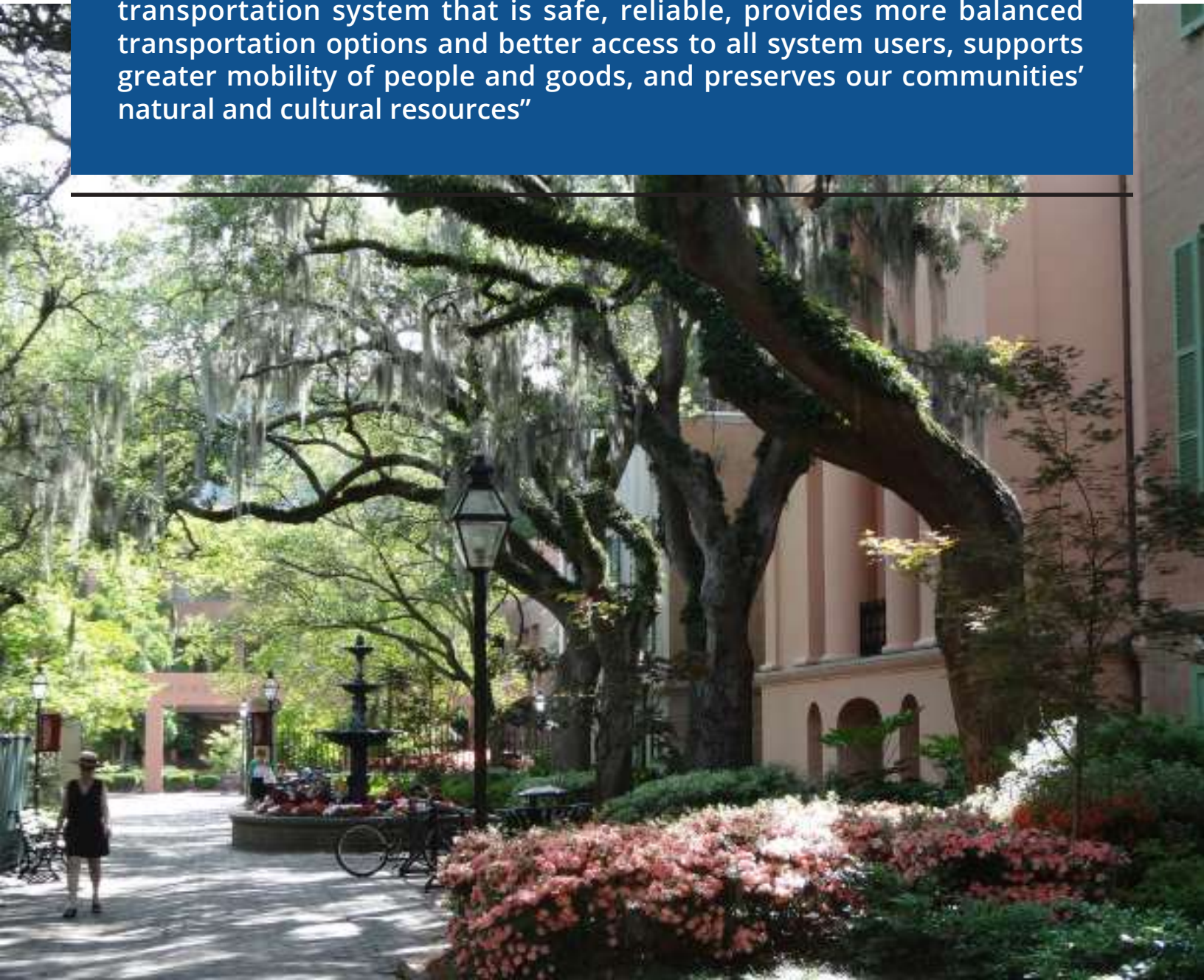
“Safe bike lanes on North Rhett and Remount to get to Naval Weapons Station”



# vision statement

The Berkeley-Charleston-Dorchester Council of Governments (BCDCOG), serving as the CHATS Metropolitan Planning Organization (MPO), envisions:

“A healthy, livable and economically vibrant region supported by a transportation system that is safe, reliable, provides more balanced transportation options and better access to all system users, supports greater mobility of people and goods, and preserves our communities’ natural and cultural resources”



# goals & performance measures

*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 expand the FAST Act, and also reflected in the State Multi-modal Transportation Plan (MTP). The goals identified under each and the performance measures developed for the LRTP are summarized below:*

**Table 1-1: Goals**

National Goal Areas	2040 Statewide MTP Goals	CHATS 2040 LRTP Goals
<p style="text-align: center;"><b>SAFETY</b></p> <p>To achieve a significant reduction in traffic fatalities and serious injuries on all public roads</p>	<p style="text-align: center;"><b>SAFETY AND SECURITY</b></p> <p>Improve the safety and security of the transportation system by implementing transportation improvements that reduce fatalities and serious injuries as well as enabling effective emergency management operations</p>	<p style="text-align: center;"><b>SAFETY</b></p> <p>Improve the safety of the transportation system for all users</p>
<p style="text-align: center;"><b>INFRASTRUCTURE CONDITION</b></p> <p>To maintain the highway infra-structure asset system in a state of good repair</p>	<p style="text-align: center;"><b>INFRASTRUCTURE CONDITION</b></p> <p>Maintain surface transportation infrastructure assets in a state of good repair</p>	<p style="text-align: center;"><b>SYSTEM PRESERVATION</b></p> <p>Maintain the region's transportation infrastructure and public transportation assets in a state of good repair</p>

National Goal Areas	2040 Statewide MTP Goals	CHATS 2040 LRTP Goals
<p><b>CONGESTION RELIEF</b></p> <p>To achieve a significant reduction in congestion on the National Highway System</p>	<p><b>MOBILITY &amp; SYSTEM RELIABILITY</b></p> <p>Provide surface transportation infrastructure and services that will advance the efficient and reliable movement of people and goods throughout the state</p>	<p><b>MOBILITY</b></p> <p>Improve travel mobility for all users, regardless of mode</p>
<p><b>SYSTEM RELIABILITY</b></p> <p>To improve the efficiency of the surface transportation system</p>		<p><b>RELIABILITY</b></p> <p>Improve the efficiency and reliability of the movement of people and goods across the region</p>
<p><b>ENVIRONMENT</b></p> <p>To enhance the performance of the transportation system while protecting and enhancing the natural environment</p>	<p><b>ENVIRONMENT</b></p> <p>Partner to sustain South Carolina natural and cultural resources by minimizing and mitigating the impacts of state transportation improvements</p>	<p><b>ENVIRONMENT</b></p> <p>Provide a transportation system that minimizes or mitigates impacts to the region's natural, cultural and historic resources</p>
<p><b>FREIGHT MOVEMENT &amp; ECONOMIC VITALITY</b></p> <p>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</p>	<p><b>ECONOMIC &amp; COMMUNITY VITALITY</b></p> <p>Provide an efficient and effective interconnected transportation system that is coordinated with state and local planning efforts to support thriving communities and South Carolina's economic competitiveness in global markets</p>	<p><b>COMMUNITY</b></p> <p>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</p>
	<p><b>EQUITY</b></p> <p>Manage a transportation system that recognizes the diversity of the state and strives to accommodate the mobility needs of all of South Carolina's citizens</p>	
<p><b>REDUCE PROJECT DELAY</b></p> <p>To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices</p>		<p><b>COORDINATION AND BEST PRACTICES</b></p> <p>Ensure that the transportation planning process considers local land use plans, engages partner agencies, and employs best practices where possible</p>

**Table 1-2: Performance Measures**

GOALS	OBJECTIVES	PERFORMANCE MEASURES
<p><b>SAFETY -</b></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"> <li>■ Number of crashes</li> <li>■ Number and rate of fatalities per VMT</li> <li>■ Number and rate of serious injuries per VMT</li> <li>■ Number of non-motorized fatalities and serious injuries</li> <li>■ Number and rate of preventable (transit related) accidents per 100,000 vehicle miles</li> <li>■ Average miles between road-calls (fixed route transit service)</li> </ul>
	<p>b. Provide a safe environment for transportation users through engineering, enforcement, and education activities</p>	<ul style="list-style-type: none"> <li>■ 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</li> </ul>
<p><b>SYSTEM PRESERVATION -</b></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"> <li>■ Percent of pavements on Interstate system in good condition</li> <li>■ Percent of pavement on Interstate system in poor condition</li> <li>■ Percent of pavement on non-Interstate NHS in good condition</li> <li>■ Percent of pavement on non-Interstate NHS system in poor condition</li> </ul>
	<p>b. Allocate resources to maintain or improve bridge conditions</p>	<ul style="list-style-type: none"> <li>■ Percent of NHS bridges classified as in good condition</li> <li>■ Percent of NHS bridges classified as in poor condition</li> </ul>
	<p>c. Maintain or improve transit assets in a state of good repair</p>	<ul style="list-style-type: none"> <li>■ Average age of transit fleet</li> </ul>
<p><b>MOBILITY -</b></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"> <li>■ Travel Time Index</li> <li>■ Proportion of primary corridor roadway miles operating at or below LOS "D"</li> <li>■ Ratio of transit-to-auto travel times in priority transit corridors</li> <li>■ Vehicular delay along auto and transit priority corridors</li> </ul>
	<p>b. Increase transit services, and provide enhanced transit amenities and facilities</p>	<ul style="list-style-type: none"> <li>■ Passenger trips per vehicle revenue mile</li> <li>■ Passenger trips per vehicle revenue hour</li> </ul>
	<p>c. Support/promote ride-sharing, such as vanpool, carpool, and park-and-ride</p>	<ul style="list-style-type: none"> <li>■ Number of participants in ride-share programs</li> </ul>
	<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"> <li>■ Miles of major roadways/corridors designed to employ access management strategies</li> </ul>
<p><b>RELIABILITY -</b></p> <p>Improve reliability of the movement of people and goods across the region</p>	<p>a. Increase travel time reliability for highway and transit corridors</p>	<ul style="list-style-type: none"> <li>■ Travel delay per peak period</li> <li>■ Buffer Time Index</li> </ul>
	<p>b. Improve the reliability of transit</p>	<ul style="list-style-type: none"> <li>■ Transit on-time performance</li> </ul>



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