

Introduction & Vision

Why Update the Long Range Transportation Plan?

The Charleston Area Transportation Study Metropolitan Planning Organization's (CHATS MPO) current Long-Range Transportation Plan (LRTP) was last updated in 2005. Federal metropolitan planning guidance requires that long-range transportation plans be updated every five years. The 2035 LRTP for the CHATS MPO will incorporate "lessons learned" from past planning, while focusing on proactive strategies for the future. A successful LRTP update will complement both economic development initiatives and community investment without compromising quality of life. With this goal in mind, this study addresses federal and state planning requirements while building upon the community vision for the future transportation system, providing mobility options that enhance quality of life for all users. The vision, goals, and objectives of the 2035 LRTP were developed based on input shared at numerous public input meetings, online surveying, CHATS meetings, and through the work of a Study Team comprised of representatives from each jurisdiction within the CHATS Study Area. Finally, all necessary federal regulatory requirements and planning initiatives, in addition to state, and local transportation and land use plans have been considered in compiling this regional transportation vision, policy, and prioritization guidebook.

The LRTP seeks to address regional needs through continuous coordination with representatives of numerous stakeholders, including:

- CHATS MPO
- Cities of Charleston, Hanahan, North Charleston, Goose Creek, Isle of Palms, and Folly Beach
- Towns of Mount Pleasant, Moncks Corner, Sullivan's Island, Summerville, Lincolnville, James Island, Kiawah Island, Rockville, and Seabrook Island
- Berkeley, Dorchester, and Charleston Counties
- Various local, regional, state, and federal agencies, including the local transit authorities (CARTA and TriCounty Link), SCDOT, FTA, and FHWA

Since 1980, the BCD Region has experienced a population growth of more than 50 percent. The region has added new businesses, expanded shopping opportunities, and developed more venues to attract visitors — but not without cost. While these increases have provided a great benefit for the communities, they also have increased vehicular traffic and increased demand on the transit systems, adding to congestion, and creating new traffic pressure points throughout the region. As this rate of growth continues, accommodating additional travel demand will become increasingly important.

The LRTP will identify methods to maintain the mobility and accessibility of goods and people while balancing the quality of life of its citizenry.

Federal Policies and Guidelines Applicable to the 2035 Long Range Transportation Plan

The 2035 LRTP is predominately regulated through Federal Legislation including the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Uses (SAFETEA-LU), which established the requirements for regional long range transportation plans and the Clean Air Act Amendments of 1990 (CAAA), which established minimum standards for attainment of clean air goals. These federal regulations necessitate a comprehensive assessment of all modes comprising the transportation system by addressing the mobility of both goods and people. SAFETEA-LU mandates eight planning factors that must be addressed when devising regional plans per Metropolitan Planning Organizations (MPO); thus, these factors provide the underlying framework for the 2035 LRTP and are as follows¹:

1. Promote the economic vitality of the metropolitan or urbanized area by encouraging global competitiveness, productivity, and efficiency.
2. Enhance the safety of the transportation system for motorized and non-motorized users by incorporating measures to prevent reoccurring and non-reoccurring incidents.
3. Enhance the security of the transportation system for all users by integrating plans for emergency response, community resilience, and prevention of illegal criminal activity.
4. Increase the mobility and accessibility for people as well as freight.
5. Protect and enhance the environment, promote conservation of energy, improve the quality of life, and ensure coordination among transportation improvements and state and local future land use plans.
6. Promote the integration and interconnectivity of the multimodal components of the transportation system for people and freight.
7. Promote efficiency in operation and management of the transportation system.
8. Emphasis on the preservation of the existing transportation system

The standards for attainment of National Ambient Air Quality Standards (NAAQS) per the Clean Air Act include provisions for emissions from motor vehicles. Despite emission standards for vehicles and point sources, attainment of air quality standards becomes

¹ Source: *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Uses (SAFETEA-LU)*; Title 23- Highways, §134(h). Federal Highway Administration (FHWA)



increasingly difficult as reliance on the automobile for travel persists. Without multimodal transportation options juxtaposed to smart growth and interconnected development patterns, air quality will continue to decline.

In June of 2009, the United States Departments of Transportation (DOT), Housing and Urban Development (HUD), and the Environmental Protection Agency (EPA) have formed the *Partnership for Sustainable Communities*². Through this partnership, these agencies will strive to coordinate housing and transportation goals, address environmental concerns, and promote social equity. To accomplish these goals, a *Livability Initiative* was established, which provides the underlying framework to guide decisions for all communities. The Livability Initiative strives to promote economic vitality and the social well-being of all individuals by enabling and sustaining a multimodal or diversified transportation network that is safe, reliable, easily accessible, and integrated within existing and proposed land uses. This transportation system will contribute to economic, social, and environmental benefits for surrounding communities by providing additional transportation choices and increased accessibility to employment opportunities. The ultimate goal of this initiative is to incorporate multimodal transportation opportunities into existing communities while maintaining and enhancing existing cultural attributes. This initiative consists of six *Livability Principles*, which are as follows:

1. Provide more transportation choices to reduce household transportation costs as well as automobile and foreign oil dependency, improve air quality, decrease greenhouse gas emissions, and promote public health.
2. Promote equitable, affordable housing through increased accessibility to housing choices for all individuals that are energy-efficient and served by a multimodal transportation system to encourage mobility and reduce transportation costs.
3. Enhance economic competitiveness by improving workers' accessibility to jobs, educational facilities, and services, as well as businesses' accessibility to markets.
4. Support existing communities and preserve the rural landscape by allocating funding toward revitalization through transit-oriented and mixed-use developments as well as infill development.
5. Improve intergovernmental cooperation to improve transportation planning and investment practices.
6. Value and enhance the unique cultural attributes of all communities by promoting walkable and safe streetscapes.

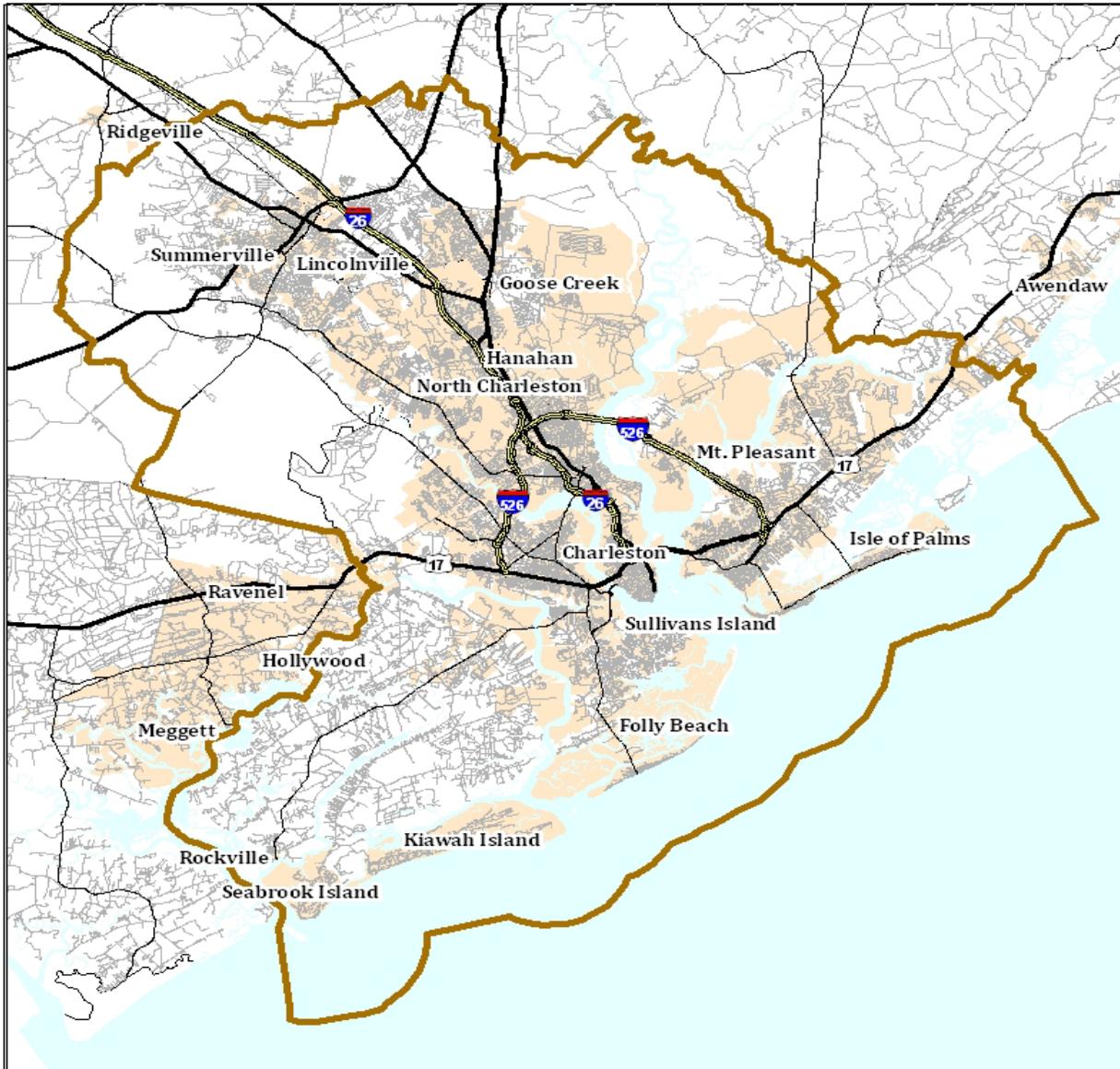
These Livability Principles provide the 2035 LRTP with the underlying framework for sustainable transportation planning. However, in order to incorporate these Livability Principles into the 2035 LRTP, a comprehensive cost-benefit analysis of all desired transportation improvements is essential. For instance, transportation planners should analyze the savings associated with a reduction in travel time through measures to ameliorate congestion, in fuel costs and vehicular maintenance associated with multimodal opportunities, in greenhouse gas emissions, as well as the potential decline in traffic accidents against the future costs associated with roadway expansion, sprawling development trends, and maintenance of this infrastructure. Cost-benefit analyses can provide insight into the expected return on investment (ROI) of proposed improvements. An analysis of the return on investment will indicate the expected value and, in turn, financial effectiveness associated with transportation improvements. For instance, a return on investment can be the expected tax revenues associated with a project, enhanced quality of life due to improved air quality, mobility, and/or accessibility associated with additional multimodal transportation opportunities, or strengthened economic vitality due to increased mobility and accessibility of individuals, services, and goods. Widely used performance measures to calculate the return on investment include: life-cycle costs and benefits, benefit/cost ratio, per capita vehicle miles of travel (VMT), volume/capacity analysis of roadways, and transit ridership. However, these measures are ineffective in assessing the benefits associated with multimodal transportation services; thus, innovative strategies to measure these benefits are necessary. For instance, accessibility to transit can be measured by the amount of individuals within a specified distance of a transit stop or the number of jobs that are accessible by a transit route. Moreover, the distribution of incomes within the aforementioned radius can reflect the equity of services. The per capita cost of each mile traveled by transit represents the affordability and financial efficiency of the service³ and potential regional travel demand benefits.

Innovative Transportation Planning

The *CHATS Long-Range Transportation Plan* identifies specific and general transportation system improvement recommendations and strategies to accommodate future transportation demands while promoting safety and efficiency. This plan supports a multimodal transportation system that addresses the economic, social, and environmental needs of the BCD Region by assessing not only automobile accessibility, but also freight, bicyclist, pedestrian, and transit components of the system. The LRTP recognizes that integrated transportation and land use planning and interconnectivity of the transportation system are essential in enabling increased accessibility and mobility for BCD residents. Additionally, the LRTP coordinates with existing and proposed multimodal transportation efforts by incorporating such initiatives as: the *Bikeway and Pedestrian Master Plan* (adopted in 1995), the *Tri-County Greenway Plan* (adopted in 1997), *East Coast Greenway Master Plan* (adopted in 2007), and other various highway corridor plans. The success of this LRTP also depends greatly on its ability to *actually be implemented*. Simply put, this plan must be practical. With this in mind, the *CHATS Long-Range Transportation Plan* includes discussion on strategies, methods, and sources of funding for implementation.

²*Leveraging the Partnership: DOT, HUD, and EPA Programs for Sustainable Communities*, April 2010, United States Department of Transportation (DOT), United States Department of Housing and Urban Development (HUD), the Environmental Protection Agency (EPA)

³ *Transportation Planning Performance Measures-Final Report: SPR 357*, October 2005, Lane Council of Governments, Oregon Department of Transportation (ODOT), Federal Highway Administration (FHWA)



represents the anticipated twenty year horizon for urban growth for the CHATS area. This also is an area in which CHATS MPO can reasonably expect to be able to affect in the future. The study area is shown in **Figure 2.1**.

Census and Demographics

The Berkeley-Charleston-Dorchester region is a growing area. Total population has increased more than 50% from 1980 to 2009, and is expected to expand at a rate of nearly 25% from 2010 to 2035. While this rate of growth can result in numerous opportunities for a region, it also can create challenges such as increased traffic congestion, pollution, and loss of open space.

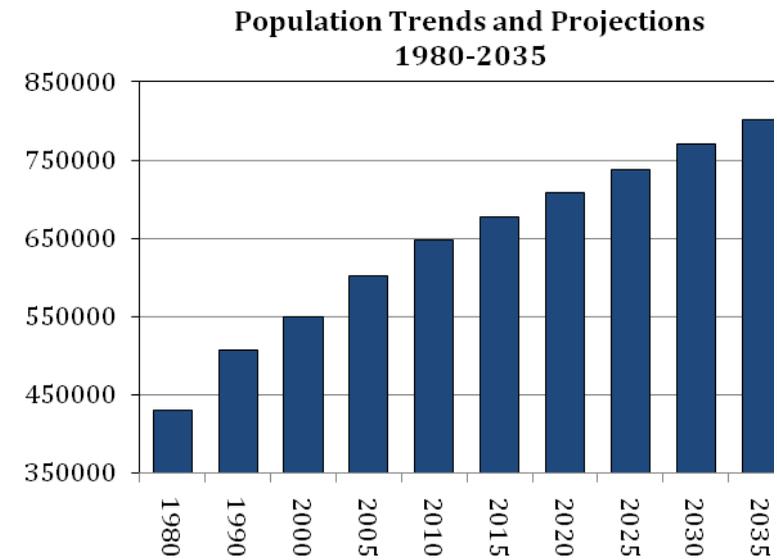


Figure 2.2

Source: South Carolina Office of Research and Statistics; Health and Demographics Division

Traveling Trends

Today, people drive more often, make longer trips, and own more vehicles than ever before. According to national trends, in 1969, households made an average of 3.83 trips per day, in

1995 that number rose to 6.36 trips per day, an increase of 2 ½ trips per household or 66%⁴. This is despite the fact that the national average household size has decreased from 3.16 to 2.63 persons since 1969. In 2003, the average daily household vehicle trips for the BCD Region were 7.62 trips and the average household size was 2.53 persons⁵. 21% of trips generated in the BCD Region were from home to work, nearly 50% of trips generated were from home to non-work destinations, and nearly 30% of trips generated were to and from locations other than home.

As evidenced by **Figure 2.3**, average commute times in the Berkeley-Charleston-Dorchester region display only marginal fluctuations from 1990 to 2008. Slight decreases during this time period can be attributed to the construction of major freeway facilities as well as roadway expansions and improvements such as the construction of Ashley Phosphate Road and the Arthur Ravenel Jr. Bridge, which was funded through the 27 in 7 South Carolina Department of Transportation (SCDOT) bonding package. The 27 in 7 bonding package enabled SCDOT, in conjunction with regional planning organizations, to finance 27 years of roadway and bridge projects throughout South Carolina in a period of seven years from 1999 – 2006. Despite slight decreases in commute times for Charleston and Dorchester Counties, current commute times in the region remain comparable in length to those of Atlanta, GA (26.0 minutes in 1990, 31.2 minutes in 2000, 26.8 minutes in 2008) and Raleigh, NC (20.2 minutes in 1990, 24.9 minutes in 2000, 21.5 minutes in 2008). Long commute times increase pollution and decrease productivity resulting in a lost work time or personal time.

Between 1990 and 2008, the Berkeley-Charleston-Dorchester area experienced an increase of 25% in the number of individuals commuting to work as well as an increase of 41% in the number of individuals driving alone to work. The use of alternative modes, such as carpooling and transit, has experienced a decline during this same period. Similarly, the number of individuals commuting outside of their county of residence to employers has steadily increased. The percentage of individuals working from home increased slightly from 2000 to 2008; however, due to increases in the commuting labor force and those driving alone, this increase had little effect in reducing travel demand on roadways. Increases in the number of vehicles on roadways contribute to increased congestion and gas consumption as well as social costs, water quality degradation via runoff, and air quality degradation. **Figure 2.4** displays the percentages of various modes of travel used by the BCD labor force to commute to work. As evidenced by the graph, the BCD labor force is predominately dependent on the use of automobiles for travel to work. For instance, in 2008, over 90% of the individuals who commute to work travel via private automobile and less than five percent of the individuals that commute to work utilize alternative methods of transportation, such as: bicycle or pedestrian travel, transit, and other means. Historically, increasing travel demands on roadways was typically resolved through infrastructural improvements, including road widening, the construction of new interchanges, etc. However, predominant dependence on the automobile will continue if measures to enable and encourage a multimodal transportation system coordinated with land use planning are not implemented.

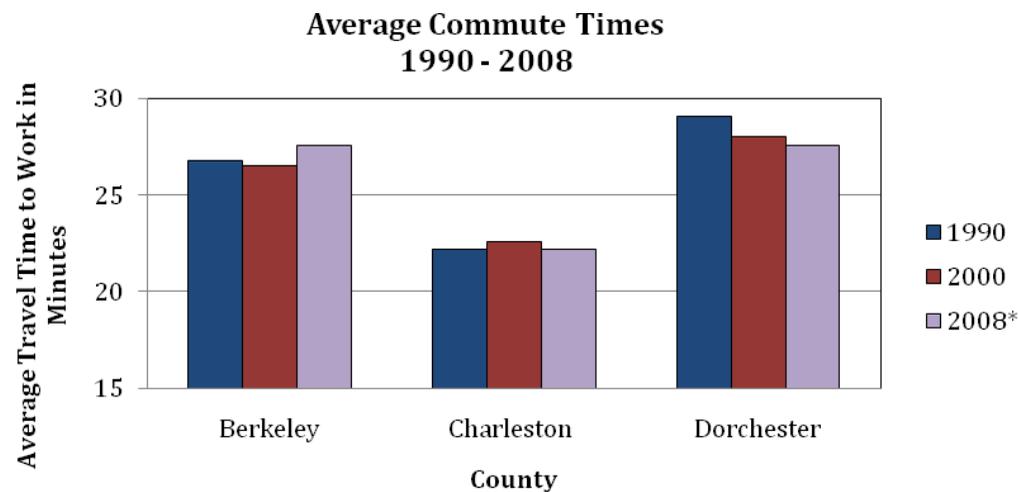


Figure 2.3

Source: U.S. Census Bureau, 2008 American Community Survey
 *Data was derived from 2008 estimates per the American Community Survey

⁴ Source: 1995 Nationwide Personal Transportation Survey, Office of Policy Information, United States Department of Transportation (USDOT), Federal Highway Administration (FHWA)

⁵ Source: 2003 BCDCOG Household Travel Behavior Survey Report. Kimley-Horn and Associates, Inc. and NuStats.

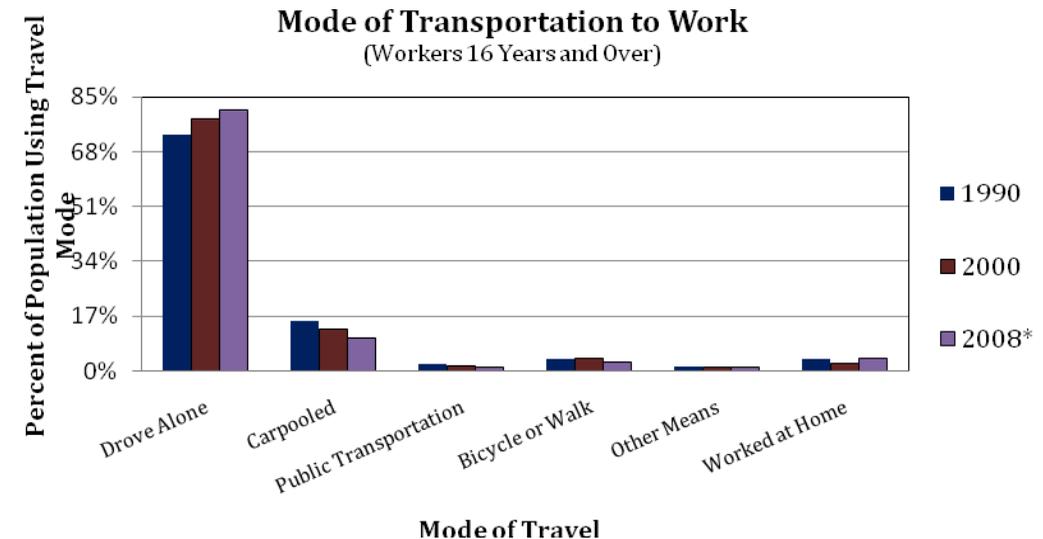


Figure 2.4

Source: U.S. Census Bureau, 2008 American Community Survey, 2006-2008 American Community Survey

*Data was derived from 2008 estimates per the American Community Survey

Figure 2.5 displays the increase in the commuting labor force from 1990 – 2008. Although an increasing commuting labor force is a function of an increasing population and the spatial distribution of employment opportunities, it is also an indication of travel demands and the multimodal transportation improvements necessary to efficiently serve the needs of the BCD labor force.

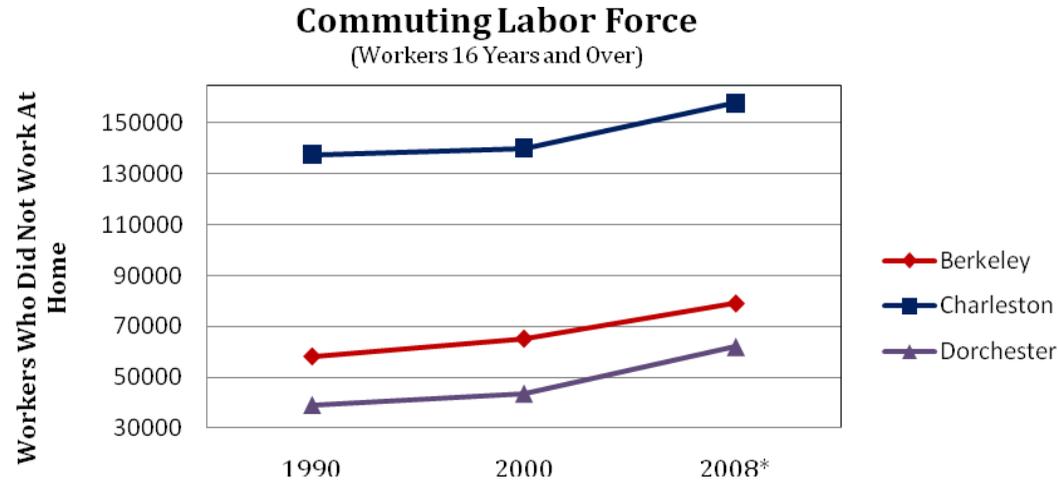


Figure 2.5

Source: U.S. Census Bureau, 2008 American Community Survey,
*Data was derived from 2008 estimates per the American Community Survey

Figure 2.6 displays the amount of BCD workers that are commuting from outside of their county of residence to the workplace. While Charleston County has maintained a steady increase in the amount of individuals commuting outside of their county of residence for work between 1990 – 2008, both Berkeley and Dorchester Counties endured significant increases in the amount of individuals commuting outside of their county of residence for work, particularly between 2000 – 2008. If these trends continue, increases in travel demand on roadways will contribute to increased congestion, further illustrating the challenges facing the region. . Many metropolitan areas have been able to reduce long travel times and congestion by making multiple travel options available to the public. A multimodal transportation system can effectively meet the transportation needs of a regional population by providing increased accessibility and mobility to residents through a variety of transportation options.

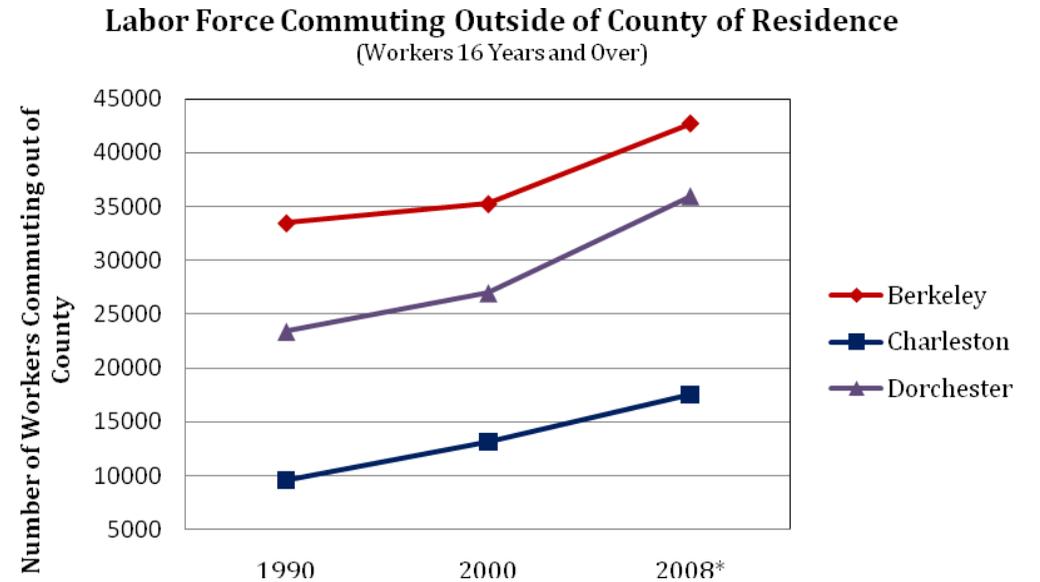


Figure 2.6

Source: U.S. Census Bureau, 2006-2008 American Community Survey
*Data was derived from 3-year estimates per the American Community Survey

Figure 2.7 displays the distribution of the BCD labor force for the year 2000. Nearly 50% of the labor force of both Berkeley and Dorchester Counties commute to Charleston County for work. In fact, according to 2000 statistics, nearly 70% of the BCD labor force is employed in Charleston County and nearly 30% of these workers commute from Berkeley or Dorchester Counties. With a large concentration of economic base and supportive industries located within the Charleston – North Charleston Metropolitan Statistical Area (MSA, such as those associated with tourism, educational and health services, aeronautics, professional, scientific, or managerial occupations, accommodation and food services, and the transport of goods, these employment trends will persist; thus, a comprehensive approach, including multimodal transportation opportunities is essential for continued economic vitality, global competitiveness, and resilience by ensuring an efficient means of travel for goods, services, and personnel.

Resilience in the transportation system is essential. Resilience is defined as responsiveness to abrupt changes such as accidents, natural disasters, global turmoil, increases in energy costs, and climate change. For instance, a multimodal transportation network provides a cost-effective means of transportation as petroleum costs become financially inefficient. Furthermore, a variety of modes and route options would enable mobility when disasters, extreme weather events, or accidents render some thoroughfares inaccessible.

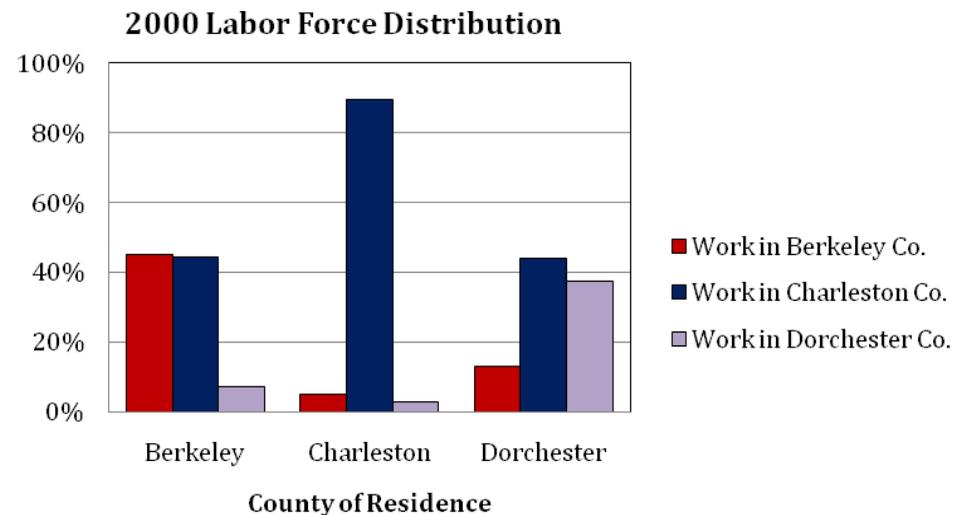


Figure 2.7

Source: South Carolina Office of Research and Statistics; Health and Demographics Division; County Worker Flow

Public Involvement

Transportation planning has become a more inclusive process that builds on strong citizen involvement. Citizens are the very ones that face the daily challenges associated with travel. To ensure that the CHATS Long-Range Transportation Plan considered these important issues and kept the region’s best interest in mind, a *L RTP Study Team*, comprised of representatives from each municipality and jurisdiction within the BCD Region, was consulted and involved early in the planning process to make policy recommendations and decisions representative of their citizens interests. In order to make sure that the community was adequately represented, citizens and planners from a broad range of backgrounds were invited to participate in the process.

The first task of the *L RTP Study Team* was to generate a list of regional characteristics that have attracted them to and kept them in the area. A reoccurring theme was an appreciation of coastal water features in the community. Other characteristics include the historical context, convenience, attractiveness, and overall atmosphere of the region. The committee members agreed that they wanted to retain each of these characteristics while promoting a plan that would protect the integrity of the transportation system.

The public involvement process was not limited to members of the *L RTP Study Team*. An online survey was conducted and community input meetings were held as a means to encourage public participation in the 2035 LRTP planning process. CHATS meetings and BCDCOG Board meetings are open to public comment as well. Enhanced multimodal transportation capability was a reoccurring theme amongst the public. Nearly 430 individuals responded to the online survey of twelve questions. Each question had an average response rate of 84%. The first question of the survey asked respondents how they would allocate \$100 towards transportation improvements. The improvements that were allocated the most money indicate those that are most important to respondents. The subsequent table displays the average amount of money allocated to each improvement.

Survey Response \$100 Allocation for Transportation Improvements

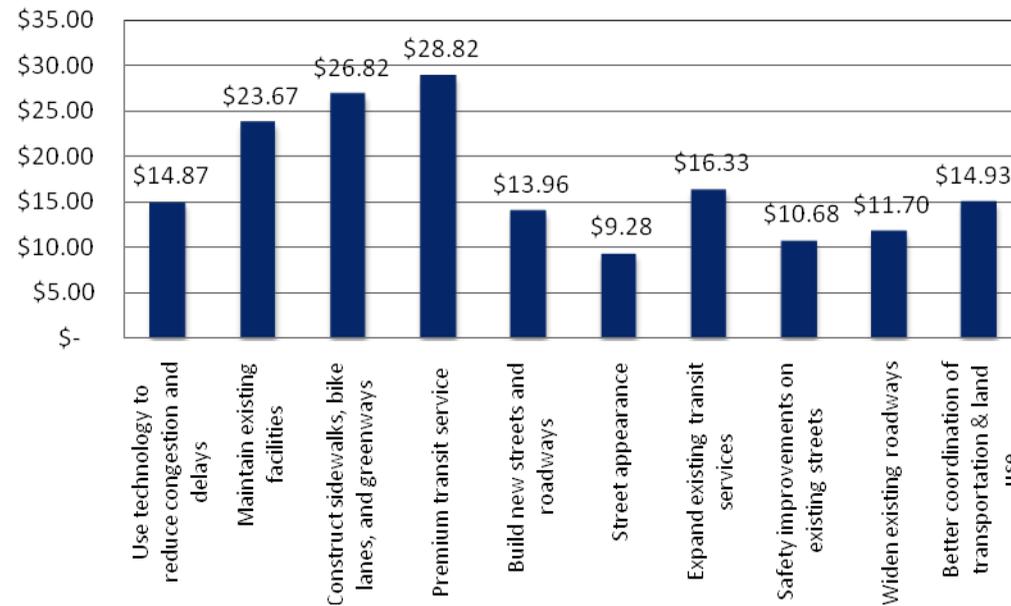


Figure 2.8

As indicated by **Figure 2.8**, it is most important to respondents that a premium transit service serve the BCD Region. The construction of sidewalks, maintenance of existing facilities, expansion of current transit services, and improved land use-transportation coordination were very important to respondents as well. Areas of lesser concern involve improved streetscapes, improved safety of existing roadways, and the widening of roadways. An additional survey question asked respondents to rate the quality of the various elements of the transportation system. 75% of respondents rated current on-road bicycle facilities, greenways, bike routes, and public bike racks as poor, 60% of respondents rated sidewalks, greenways, and pedestrian signals as poor, and 55% of respondents rated public transit as poor. Improvements in these facilities will provide additional multimodal transportation opportunities and, in turn, contribute to economic, social, and environmental benefits.

Seven community input meetings were held in various locations throughout the region from November December of 2009 to allow members of the community to express their

transportation concerns and list priorities. After a brief presentation, workshop participants discussed transportation issues and projects. Frequently mentioned improvements included:

- Improve the transit network and services
- Improve deteriorating and aging roadway networks;
- Incorporate more bikeways, sidewalks, and greenways;
- Incorporate intermodal transportation capabilities with existing public transportation facilities along Dorchester Road;
- Enable public transit opportunities within Kiawah and Seabrook Islands;
- Improve accessibility to Kiawah and Seabrook Islands;
- Enhance the safety of existing bus shelters, incorporate additional park and ride facilities, and improve the lighting of these facilities;
- Enhance and incorporate freight and passenger rail opportunities to industrial sites
- Promote safe routes to school;
- Improve traffic flow along King and Meeting Streets;
- Add additional traffic calming measures to slow traffic and promote the safety of motorists, pedestrians, and bicyclists;
- Improve connectivity of the existing roadway network;
- Improve the streetscape through beautification and pedestrian capabilities;
- Incorporate passenger rail service from Summerville to Charleston;
- Incorporate light rail service on Johnnie Dodds and Coleman Boulevards, Savannah Highway, as well as the Airport and Coliseum;
- Incorporate a water taxi or ferry service to provide connectivity between Mount pleasant, the Charleston Peninsula, Daniel Island, and John's Island;
- Improve bicycle and pedestrian networks to ensure safety and encourage usage;
- Improve interchanges along I-26 and I-526 to reduce vehicular accidents;
- Improve accessibility from John's Island to Goose Creek, Hanahan, and the Summerville Area as well as to Mount Pleasant.;;
- Coordinate traffic lights along College Park Road to improve traffic flow;
- Improve signage and lighting on John's Island to enhance visibility;
- Improve John's Island roadways;
- Incorporate bikeways along Ashley Phosphate Road;
- Improve traffic congestion and delays in such areas as: the intersections of 526 and 17, Sam Rittenburg Boulevard and Ashley River Road, Main Road and 17 as well as along North Rhett Avenue; Maybank Highway, Highway 52 from the I-26 interchange to Highway 176, Glenn McConnell Parkway, Folly Road, US Highway 17, and Dorchester Road;
- Reduce air pollution and oil consumption;



- Revitalize existing corridors through infill development; and
- Discourage further disjointed and inefficient conventional suburban development trends

Vision and Objectives

In light of the key characteristics that retain the BCD Region as a special place, the community envisions a future region that provides accessibility and mobility for people and goods by developing and maintaining an adequate, safe, and balanced transportation system. During the development of the previous LRTP, an extensive process was created to identify explicit goals and policies related to transportation. This effort helped guide the overall development of the new LRTP and is referenced in the *CHATS 2005-2030 Transportation Plan*. This 2010 LRTP update attempts to balance both the vision and objectives expressed by community members *and* comments received at the public meetings. This effort has resulted in the following goals of the Study (in no particular order):

- **Develop a compatible plan** — consider future land use and adjacent jurisdiction plans;
- **Create a plan** — accommodate community growth and related travel demand increases;
- **Improve roadway safety;**
- **Recognize specific mobility needs** — consider regional tourism and economic development (business and industry);
- **Recognize access and limited mobility** — address disabled persons and other similar needs;
- **Create a system of interconnected streets** — improve mobility and distribute traffic efficiently based on purpose and function;
- **Provide for convenient, efficient connections** — connect various surface and air transportation modes and facilities;
- **Enhance the efficiency of the existing transportation system** — implement low cost improvements and incorporate innovative techniques (such as congestion management strategies);
- **Enhance the quality of life** — minimize adverse impacts and/or positively affect the natural and social environments;
- **Support “mixed-use” development** — encourage bicyclists and pedestrians by promoting context-sensitive roadway design;
- **Promote a pedestrian-friendly environment** — fill in gaps and improve interconnection within the sidewalk system;
- Support additional bike lanes and trails to parks and community activity centers;
- Evaluate the need for passenger/commuter rail service between regional activity centers;
- Create interconnected bicycle and pedestrian networks;
- **Provide and plan for future transit service expansions** — include park-and-ride facilities and readily available transit service information, and transit ready development patterns;

- **Protect and reserve rights-of-way** — encourage local jurisdictions within the BCD Region to plan for ROW needs as future development occurs; and
- **Build consensus and locate funding sources** — determine acceptable local sources and implement innovative techniques to supplement federal and state revenues

A Transportation Planning Guide

The vision of a safe, multi-modal, and interconnected transportation system for the BCD Region can become a reality. This plan is intended to serve as a tool and guide for the future success in the implementation of the Region’s transportation system (2035 is the planning horizon for the transportation plan). The *CHATS Long-Range Transportation Plan* includes the following chapters:

1. Background and History
2. Introduction and Vision
3. Transportation System Operation and Maintenance
4. Planning for Growth - Future Conditions
5. Pedestrian and Bicycle Facilities
6. Transit Services
7. Freight Mobility
8. Safety
9. Security Planning
10. Environmental Screening
11. Financial Plan
12. Implementation Plan