



Mark Clark

Community Impact Assessment

Charleston County, South Carolina

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GREENWAYS
INCORPORATED
Landscape Architecture
Multi-Objective Trail Planning
Open Space Planning

Acknowledgments

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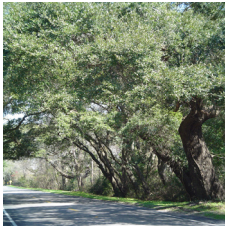
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Background



*Rural Island
Character*

The Mark Clark Community Impact Assessment addresses the foreseeable effects of the proposed I-526 Mark Clark Expressway extension from the US Route 17/SC Route 7 interchange to SC Route 171 in Charleston County. The study assumes that the Mark Clark extension and its three associated interchanges will follow the conceptual alignment indicated on Figure 1.1. Given this assumption, the study does not evaluate the transportation aspects of the project. Instead, this analysis focuses on indirect impacts to Johns Island and James Island, particularly changes to the study area's residential and employment base and overall character. The study also reviews a variety of policy options and recommends actions to offset the potentially adverse effects of unmanaged growth and development on the islands.

This study firmly concludes that Johns Island will experience significant increases in the number of households and residential-serving uses in the years ahead. Two components contribute to expected development changes on the island: regional growth; and improved interstate access.

The likely impacts of the Mark Clark extension should first be viewed within the broader context of growth in the Charleston metropolitan area. The metropolitan area consists of the three counties of Charleston, Berkeley, and Dorchester, with the bulk of the region's people and jobs in Charleston County. In recent years, the Charleston area has shown steady employment and population growth of about one percent annually, and this trend is expected to continue or increase. Interestingly, the growth in housing units has outpaced both population and employment increases, primarily due to decreasing household size. Clearly, regional growth and shifts in demographic patterns will bring more

people and households to Johns Island with or without the Mark Clark extension.

The Mark Clark extension, however, will alter development patterns within the three-county region. Highway planning research consistently demonstrates that improved interstate access redistributes growth around the transportation network. More intense land use activities emerge around areas of improved access at the expense of communities without enhanced interstate links. This well-documented outcome suggests two possible shifts in Johns Island's current growth trajectory. First, Johns Island will continue to absorb its portion of people and households, but will do so at a faster rate. Secondly, the community may also capture a higher overall share of the region's households and jobs, particularly in the area near the Mark Clark alignment. While expected population growth will be less pronounced on James Island, which is mostly built-out, the extension is likely to spur redevelopment at higher densities to capitalize on improved access.

An accelerated rate of change poses a physical, social, and economic challenge to any community. This study, however, represents an excellent opportunity to guide future growth and to make informed land use choices that protect the valued character and identity of the islands.

The remainder of this report details the population and employment trends shaping growth on the islands, defines the community qualities that residents seek to protect, and assesses the likely impacts of the Mark Clark extension. Lastly, the report concludes with a series of policy actions to maintain the quality of life on Johns Island and James Island.

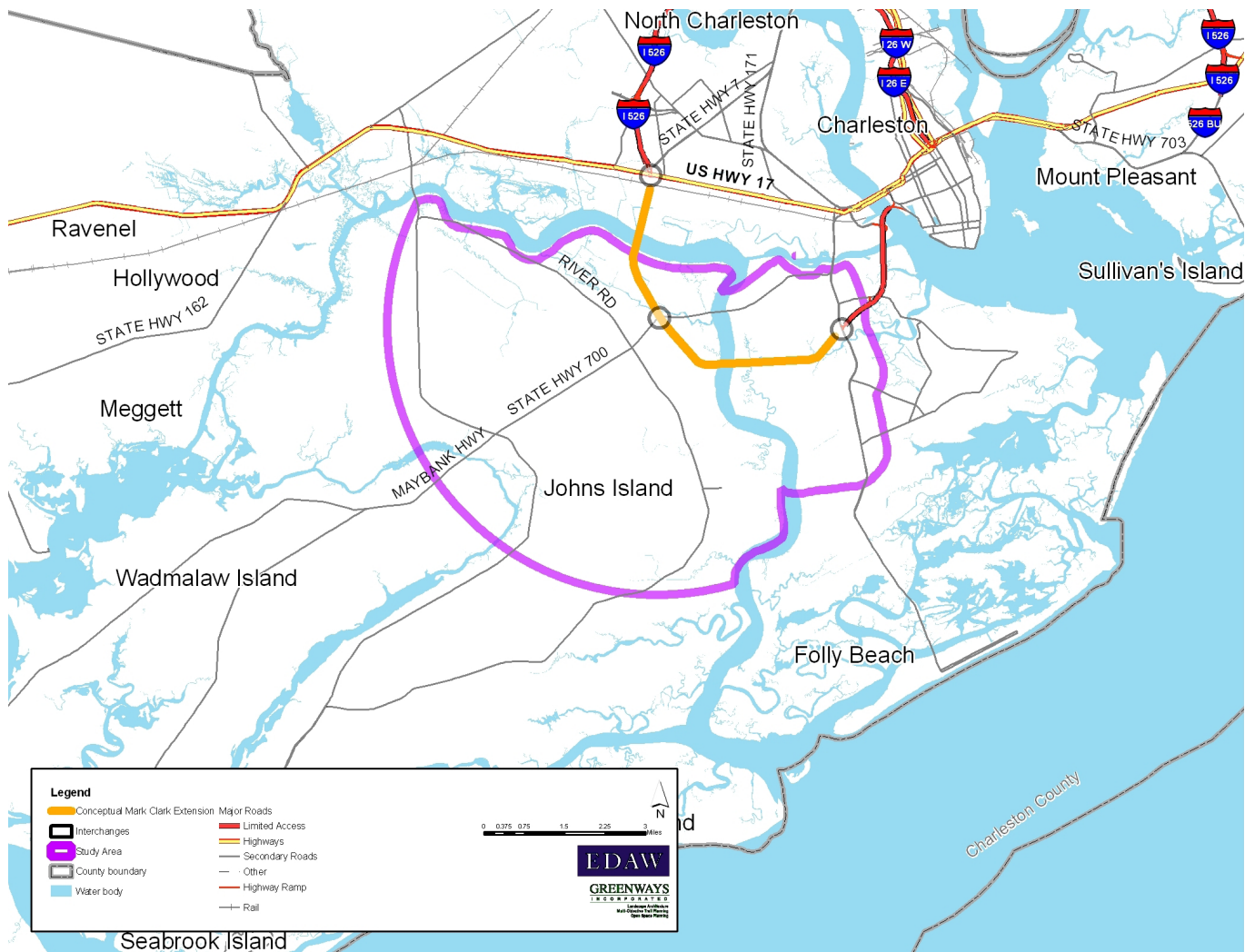


Figure 1.1 Study Area

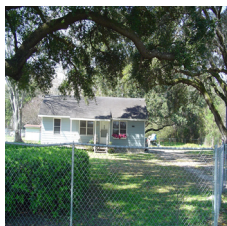
1.1 Study Area

The study area consists of northeastern Johns Island and north-western James Island (see Figure 1.1). The study focuses mainly on a five mile area west of the proposed interchange of the Mark Clark Expressway at Maybank Highway on Johns Island, but also includes analysis of the area around James Island County Park. The study area falls within the Coastal Islands West and the James Island/Folly Beach planning areas of the Berkeley Charleston Dorchester region.

James Island has moderate access to the region with two bridges connecting the island to the Charleston Peninsula. Savannah Highway/SC-17 is the only interstate link to James Island. Two relatively new bridges—the Maybank Highway Bridge across the Stono River leading to James Island and the John Limehouse Bridge across the Atlantic Intracoastal Waterway—form the main access arteries on and off of Johns Island, significantly expanding the regional access previously offered by drawbridge structures.

James Island features a typically suburban development pattern at its northern end. Commercial areas line Folly Road, transitioning to a series of resort communities at the southern end of the island. Johns Island, in contrast, displays a predominantly rural character and density. Pockets of commercial development stretch along Maybank Highway, particularly at its major intersections with River Road and Main Road. Though historically an agricultural community, Johns Island continues its transition to residential use as the region's workforce seeks out the island's affordable housing. The southern end of Johns Island connects with the primarily rural Wadmalaw Island and the upscale resort communities of Kiawah and Seabrook Island.

Community Profile



*Development on
Johns Island*

2.1 Population and Housing

Relative to the Charleston region, Johns Island and James Island tend to have more families, more children, and higher rates of homeownership. Both islands have racially diverse populations and a proportional share of poor residents. (The Appendix contains a detailed summary of demographic data).

As of 2000, James Island had a population of 13,304 people living in 5,831 households; Johns Island's population of 6,778 lived in 2,510 households. Families dominated both communities. Almost 60 percent of James Island's households consisted of families, and 20 percent of the population was children under the age of 18. For Johns Island, families comprised almost three-fourths of all households and children under 18 were just over a quarter of its population. The average household size in James Island was 2.27, less than average for the Charleston region, while the Johns Island average household size of 2.70 exceeded the regional average.

Most residents of the two islands owned their homes. James Island had 60 percent home ownership, while the Johns Island home ownership rate was 81 percent. James Island had a relatively high percentage of senior citizens at 15 percent, while seniors comprised 10 percent of the Johns Island population.

Both islands had significant populations of long-time residents. Fifteen percent of James Island's residents had lived in their home for over 30 years as of 2000, and similarly 14 percent of

Johns Island's residents had a household tenure of 30 years or longer.

Both James Island and Johns Island had significant minority populations, but Johns Island had a higher regional share. Over a quarter of James Island's population was African American. Johns Island was majority-minority, with a population that was 38 percent African American, 6 percent Hispanic, and 6 percent other minority racial groups.

Both James Island and Johns Island featured regionally average rates of poverty. James Island had a 14 percent poverty rate, while 11 percent of Johns Island's residents lived below the poverty line. The poverty rate for the county overall was 12 percent.

The cost of housing differed significantly between the two communities as of 2000. The median housing price for James Island was approximately \$141,000, while the median housing price for Johns Island was approximately \$77,000. This discrepancy reflects the historically strong base of affordable housing available on Johns Island. Johns Island, however, has narrowed the housing price gap. Data on home sales from 1995 to 2005 indicate that the median price of houses sold on Johns Island increased by over 160 percent during the previous decade. (Source: www.charleston-sc-property.com & Charleston Trident MLS-Prudential Carolina)

Employment

Though Johns Island (62 percent) and James Island (65 percent) featured labor participation rates similar to Charleston County as a whole (64 percent), both communities experienced higher levels of unemployment. Johns Island's

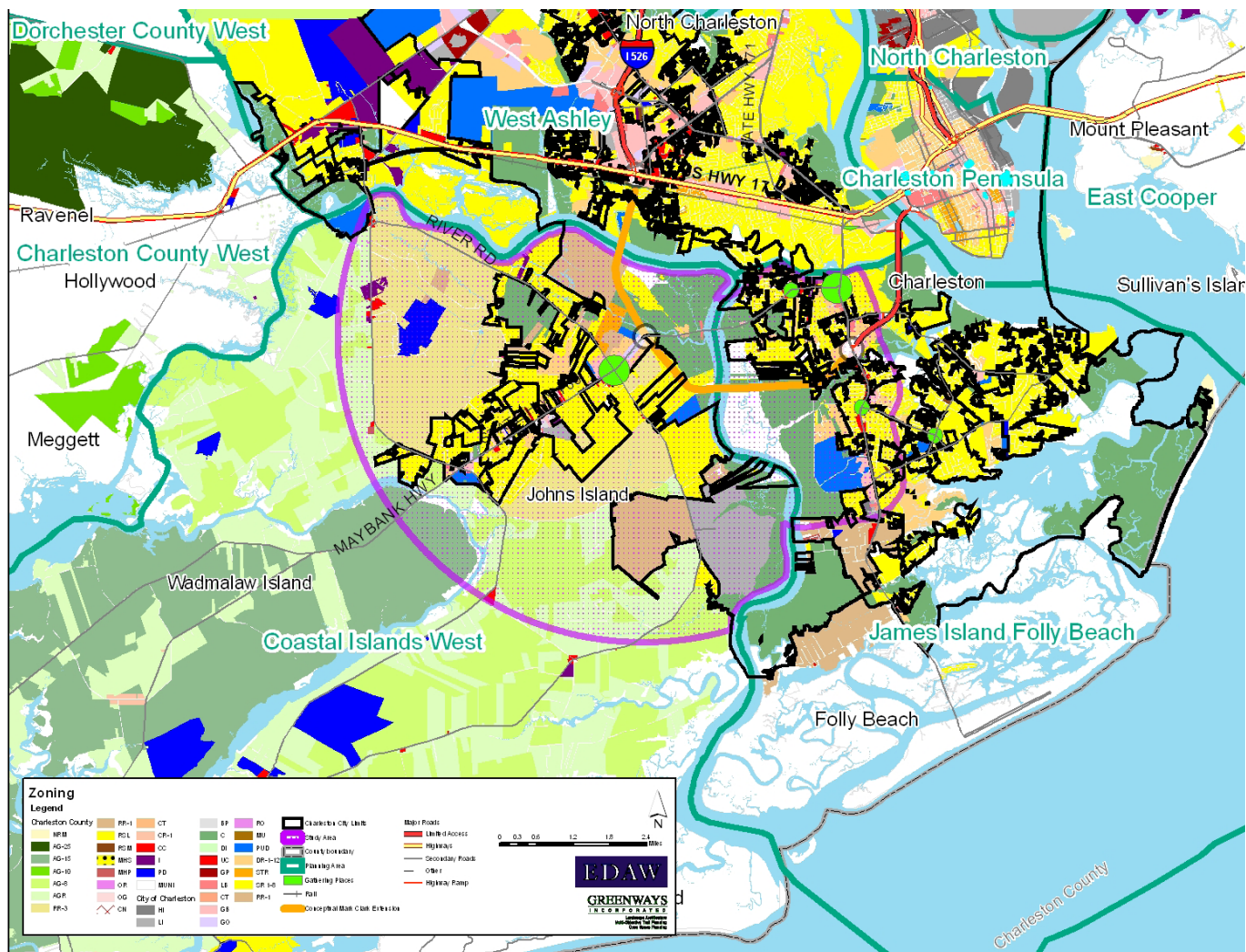


Figure 2.1 Zoning

unemployment was 5.6 percent and James Island's was 6.2 percent, compared to overall county figure of 2.6 percent. Limited geographic access to the region's major job centers is a possible cause for higher unemployment rates on the islands. (The Appendix contains a detailed summary of employment data).

The three main industries for workers from James Island were Entertainment, Health, and Social Service; Retail Trade; and Arts, Entertainment and Recreation. The three main industries for workers from Johns Island were Entertainment, Health, and Social Service; Retail Trade; and Construction. These major employment sectors all depend upon population size, population growth, and tourism. Reflecting its economic transition away from farming, only 1.2 percent of Johns Island's employees worked in the Agricultural, Forestry, and Fishing trades. Major export-oriented employment sectors that are found elsewhere in the Charleston region such as headquarters or manufacturing are also not major sources of employment for island residents.

2.2 Current Land Use Patterns

The urban growth boundary, approximately defined by Plow Ground Road on the south and Main Road on the west, strongly influences current land use patterns in the study area. Urbanization on Johns Island is generally in the vicinity of Maybank Highway and parts of Main Road. Within the urban growth boundary, Johns Island remains mostly in rural residential use, although about 30 percent of land use is suburban residential. Small pockets of commercial exist along Maybank Highway. Outside the urban growth boundary, the island is almost entirely rural agricultural and rural residential. The only major exception is the airport, which is classified as an industrial land use (See Figure 2.1).

James Island's more urban land uses exist mostly north of Fort Johnson Road. The northern part of James Island that lies in the study area displays a suburban development character with the exception of two large green spaces formed by the James Island County Park and the Charleston Municipal Golf Course. A variety of commercial uses are also found along the Folly Road corridor.

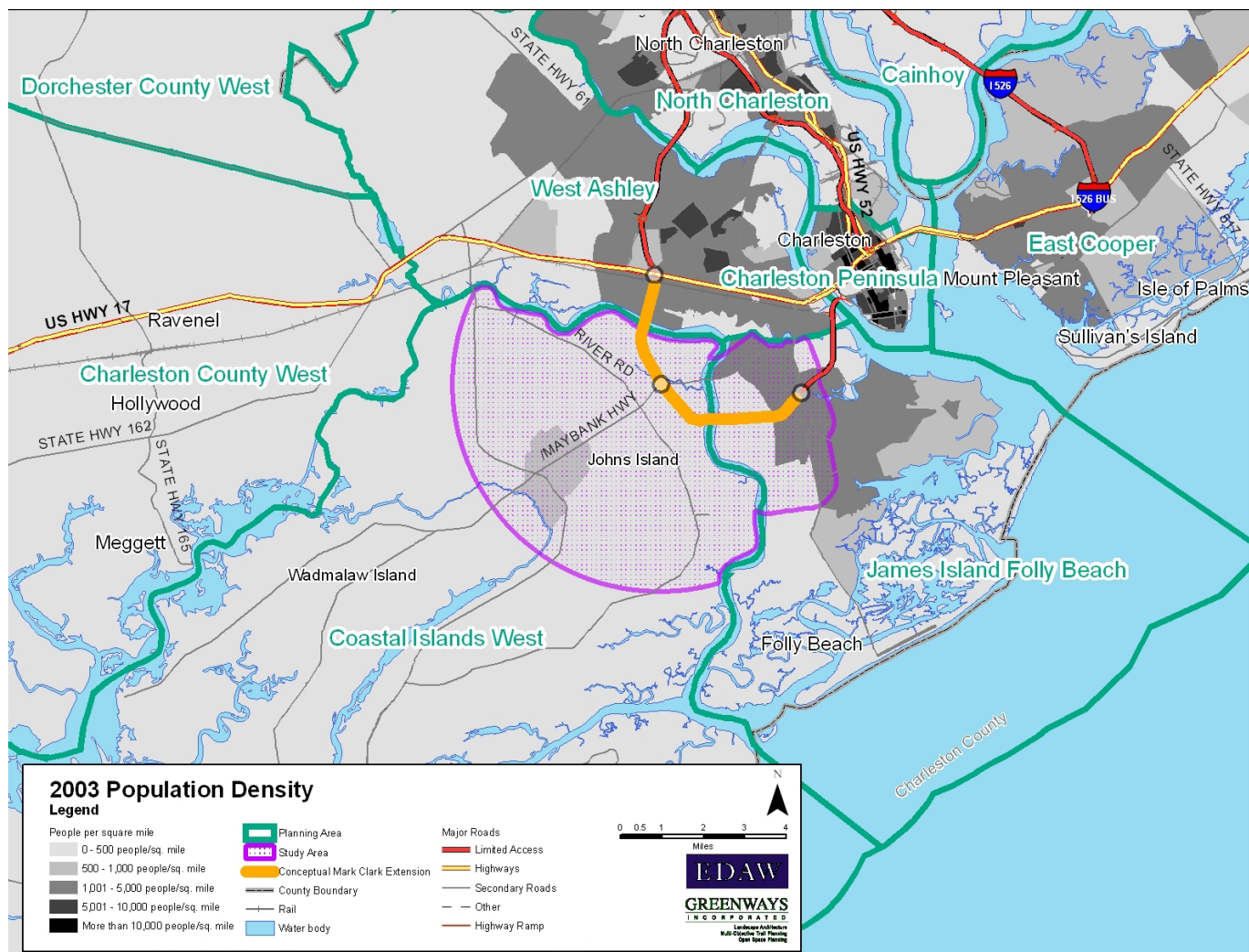


Figure 2.2 Population Density, 2003

The 2003 population density map shown in Figure 2.2 highlights the significant relationship between population patterns and transportation in the Charleston region. The map shows more developed areas in darker gray, representing higher population densities. Urbanized areas—any area over 1,000 people per square mile—include the northern part of James Island, the Charleston Peninsula, West Ashley, North Charleston, and much of East Cooper. Urbanized population densities generally follow the Mark Clark Expressway in the region, reflecting how interstate access promotes more intense development. With its predominantly rural densities Daniel Island is the exception along the Mark Clark corridor. Johns Island remains the only other significant rural land area around Charleston’s inner transportation ring.

Figure 2.2 also demonstrates the fairly sharp contrast between current development densities on northern James Island and Johns Island. Nearly half of James Island has densities of over 1,000 people per square mile, while only a small part of Johns Island in

the vicinity of Maybank Highway and Main Road is developed at densities of over 500 people per square mile.

2.3 Employment Centers

The Charleston region’s economy has evolved from a narrow range of activities focused on the military to a broad, multi-faceted economic base. Primary economic activities in the Charleston region now include manufacturing and logistics, tourism, medical employment, international headquarters, and manufacturing. Unique economic resources include the historic charm of the City of Charleston, the port of Charleston, and the Medical University of South Carolina.

Employment in the region has grown 11.9 percent from 1999-2004, at an annual rate of 1.6 percent. This rapid expansion of the economy combined with the continued decentralization of employment locations is likely to spur further increases in the regional population.

The Charleston region has four major clusters of employment: North Charleston, the Charleston Peninsula, West Ashley and East Cooper. These employment centers compose approximately 60 percent of the regional job base. Table 2.1 illustrates the industry sectors that cluster at each of these employment centers.

It should be noted that each of the employment centers with the exception of the Charleston Peninsula lies along the Mark Clark Expressway. The largest job center, North Charleston, includes the intersection of the two major interstates I-26 and I-526. Also, North Charleston, West Ashley, and East Cooper are along an inner ring of development that is suburban in character but close to the historic center of the region at the Charleston Peninsula.

An expansion of the Mark Clark Expressway through Johns Island and James Island will increase the attractiveness of areas around the interchanges as sites for retail and other employment-related development. The study area's access and geographic location within the region are most similar to East Cooper. Since the education, health, professional service, and retail trade activities cluster in the East Cooper area, Johns Island can anticipate future growth in comparable economic sectors.

Place	Cluster	Jobs
North Charleston	Manufacturing	8,370
	Retail	6,335
	Public Administration	5,857
	Education, health, social services	5,415
	Professional, management, administrative services	5,109
	Armed Forces	3,274
Charleston Peninsula	Education, health, social services	17,720
	Entertainment, accommodations, food services	6,220
	Retail Trade	3,239
	Public Administration	3,104
West Ashley	Education, health, social services	5,415
	Retail Trade	5,160
	Entertainment, accommodations, food services	3,255
East Cooper	Education, health, social services	3,740
	Entertainment, accommodations, food services	3,250
	Retail Trade	3,134
	Professional, management, administrative services	2,915

Table 2.1 Industry Clusters within Charleston Region Employment Centers

2.4 Population Growth Patterns

From 1990 to 2000, the three-county population of Charleston grew from about 507,000 to 549,000, an annual rate of 0.8 percent. High growth areas included East Cooper with an increase of 18,400 people, the Dorchester Road Corridor with an increase of 7,100 people, and Goose Creek/Hanahan with growth of 5,200 people. Other areas of significant growth were James Island, Sangaree East, and Northwest Berkeley. The existing network of interstates appears to exert a significant influence on population growth in the region, generating the highest rates of increase along the I-26 corridor.

The Berkeley-Charleston-Dorchester Council of Governments (BCD COG) created a forecast of population, housing, and employment growth based on a range of related data, including school openings and closings, road congestion, and development projects. Using these inputs, the BCD COG forecasts rates of high growth, moderate growth, and low growth for the region's planning areas over the next 25 years (Source: Growth Indicators in the Berkeley Charleston Dorchester Region 2000-2004).

The BCD COG identifies high growth for the following planning areas: East Cooper, Cainhoy, Goose Creek/Hanahan, West Ashley, Central Summerville, and the Dorchester Road Corridor. Again, these forecasts indicate that current patterns of growth in the region concentrate along the inner I-526 ring and inland along the I-26 corridor, particularly along its western edge. These forecasts reflect existing trends that the extension of the Mark Clark Expressway could significantly alter.

Population increases have produced demographic change in the Charleston region. As of 2000, the population of the Charleston region was 65 percent white, 31 percent black, 2 percent Hispanic, and 2 percent other races and ethnicities. While the racial composition has remained stable, a higher percentage of the region's residents identified with races other than white and black. The Hispanic population, for example, grew rapidly in the Charleston region between 1990 and 2000, with a 74 percent increase.

Paralleling national trends, the regional population has also aged. The percent of people over 65 has grown from 8.5 percent of the population to 10.3 percent. At the same time, the percent of the population under 18 has decreased from 27.7 percent of the population to 26.8 percent. While these changes are not particularly large, they do reflect a gradual shift in the composition of the workforce, the number of retirees, and the nature of households in the region over time.

2.5 Housing Development Patterns

Decreasing average household size and an expansion of the second and vacation home market have spurred growth in the

number of households in the region. From 1990 to 2000, the number of households grew at an annual rate of 1.6 percent, outpacing the rate of population growth.

Average household size, for example, decreased from 2.75 to 2.55 in the Charleston region. This trend of smaller household sizes is expected to continue, but eventually level off at 2.39 by 2030.

The percentage of seasonal or vacation units has increased slightly over the decade between 1990 and 2000, from 2.8 percent of housing units to 3.6 percent. Second home and resort communities near the study area include Kiawah Island and Seabrook Island, as well as the southern area of James Island.

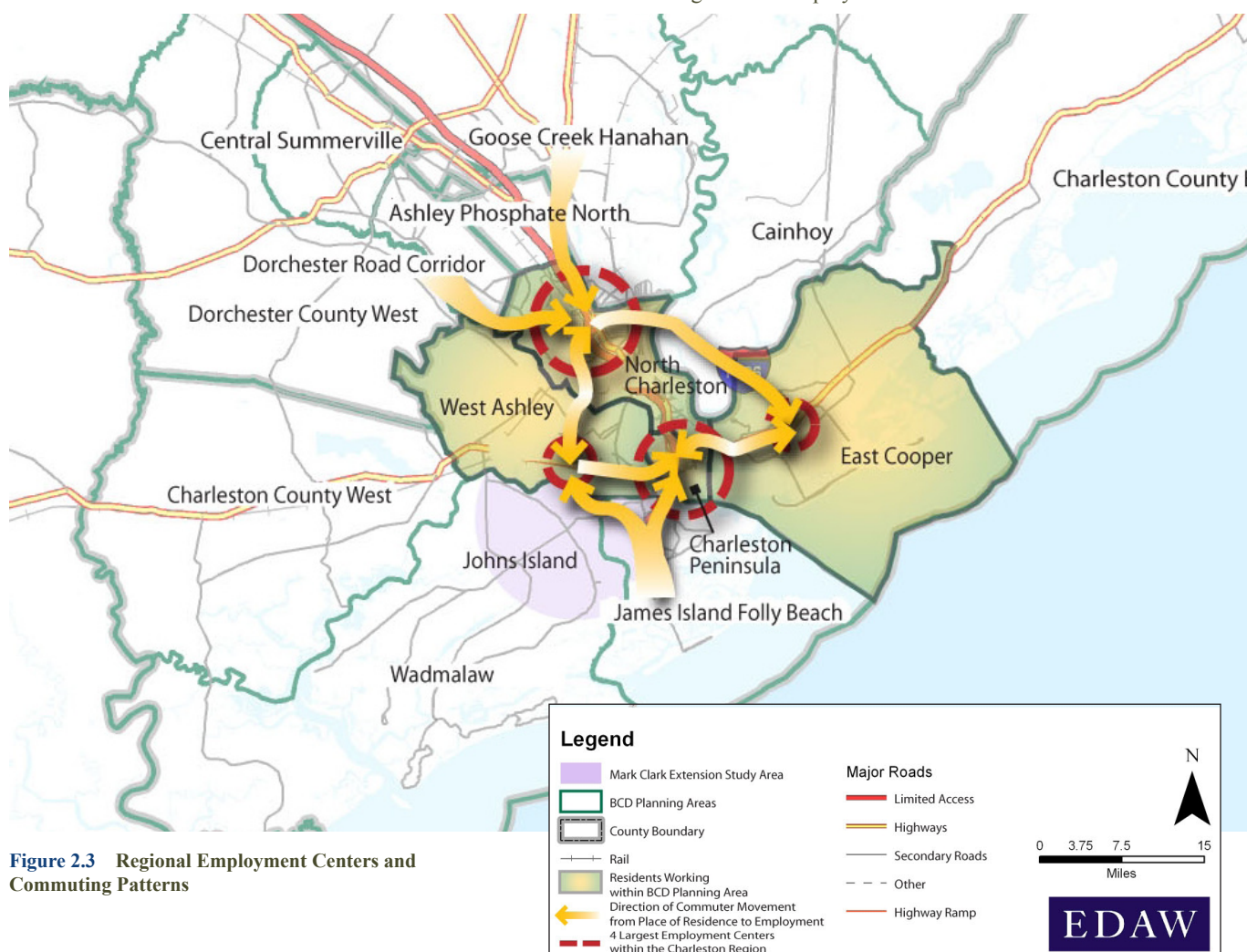
The vast majority of housing units in the Charleston metro area, however, serve as a primary residence. The seasonal housing market favors proximity to scenic amenities such as beaches, water, and marshes, rather than convenient employment access. As a result, the attractive locations for seasonal units vary considerably in character from areas in demand for primary residence housing.

In recent years, low interest rates have encouraged many people to upgrade their housing, resulting in a higher rate of turn-over among home owners. This in turn has accelerated the production of new housing. After a prolonged period of fast housing growth in the Charleston metropolitan area precipitated by low interest rates, the trend of accelerated housing turn-over and rapid housing production is starting to abate.

2.6 Employment Growth Patterns

Job growth in the Charleston region has been robust. From 1999 to 2004, total employment grew by 11.9 percent (1.6 percent annually), exceeding population growth. The regional economy added 36,890 jobs over the past 5 years with strong expansion in professional and business services as well as education and health services. Wholesale trade, drawn by the port of Charleston, has also experienced expansion.

In recent years, employment location has gradually decentral-ized. While Charleston County maintains its historic position as the region's primary job center, Berkeley County has captured a rising share of employment.



	1993 Employment	1993 Employment	2003 Employment	2003 Employment
Berkeley	33,985	12%	54,339	16%
Charleston	223,827	78%	253,920	74%
Dorchester	27,339	10%	35,766	10%
Total	285,151	100%	344,025	100%

Table 2.2 Employment Growth, Charleston County Region

2.7 Land Value Patterns

Since home value usually correlates strongly with household wealth, the distribution of higher-priced housing effectively illustrates income patterns throughout the region. The largest concentration of high-value homes is in the eastern section of the region, including the Cainhoy and East Cooper planning areas (Source: American Factfinder, US Census SF3 2000). The coastal islands also tend to have pockets of high-value housing. Many of these homes are likely vacation homes or second homes. The next major concentration of high-value housing is along Ashley River Road, centered on the West Ashley planning area. (see the Appendix for a graphic showing median home value by block group for the Charleston region as of 2000)

Notably, Johns Island is one of the closest-in parts of the metropolitan area with affordable housing opportunities. James Island's home values are about average for the region.

2.8 Commute Patterns

In 2005, the BCD COG released a detailed study of commute patterns for the Charleston area. The data describe where people live, where they work, and other relevant information such as industry, occupation, and wage for the Charleston planning areas. (Source: Commuting Patterns in The Berkeley Charleston Dorchester Region. BCD COG. 2005)

Four major employment hubs anchor the region: North Charleston, Charleston Peninsula, West Ashley, and East Cooper.

The major commute patterns into North Charleston are from North Charleston, Goose Creek/Hanahan, West Ashley, and the Dorchester Road Corridor. However, significant numbers of people from elsewhere in the region also drive to this employment center. Most commuters into the Charleston Peninsula drive from West Ashley, the Charleston Peninsula, East Cooper, and James Island. West Ashley draws from West Ashley, North Charleston, James Island, and Goose Creek/Hanahan. Over 35 percent of people who work in West Ashley also reside there. The major commute patterns into East Cooper are from East Cooper, West Ashley, Goose Creek/Hanahan, and North Charleston. However, over half of people both live and work in East Cooper.

Figure 2.3 reveals several major patterns of commuting within the region. First, people generally live close to where they work. Secondly, many commuters travel among the various inner-ring planning areas, which are linked by the Mark Clark Expressway. Lastly, while some commuters also travel from outlying areas towards the urbanized center, employment hubs at the eastern and western edges of the region tend to find a larger proportion of workers from close by.

Planning areas are a source of commuters for the region, as well as a destination. For those people who live on James Island, 43 percent also work on the island. Other common employment destinations for James Island residents are West Ashley (13 percent) and North Charleston (7 percent). Clearly, the Mark Clark Expressway facilitates commuting from James Island to North Charleston.

For those who live in the Coastal Islands West planning area (Johns Island and Wadmalaw), one-third also work in Coastal Islands West. Among commuters who leave the planning area, 15 percent work in West Ashley, 14 percent work in North Charleston, and 10 percent work in James Island. In short, a majority of those who live in Coastal Islands West have work commutes that are either cross-regional or towards the center of the region.

2.9 Natural, Cultural, and Recreational Resources

Johns Island embodies the cherished lowcountry landscape of wetlands, marshes, streams, native forests, meadows. (See Figure 2.4). Charleston County has approximately 240,000 acres of wetlands, equaling about 40 percent of its total land area. The communities of Johns Island, Kiawah and Seabrook include over 21,000 acres of wetlands, while James Island and Folly Beach have over 14,000 acres of wetlands. A variety of federal, state, local and non-profit initiatives work in concert to stem the loss of wetlands in the region due to both natural factors and development activity.

Johns Island and James Island fall within the Ashley-Cooper watershed basin. Johns Island's primary waterway is the Stono River. A sub-basin inventory of the river indicates existing water quality issues related to high concentrations of zinc and copper in several samples and decreasing trends in dissolved oxygen, which can have an adverse affect on aquatic life.

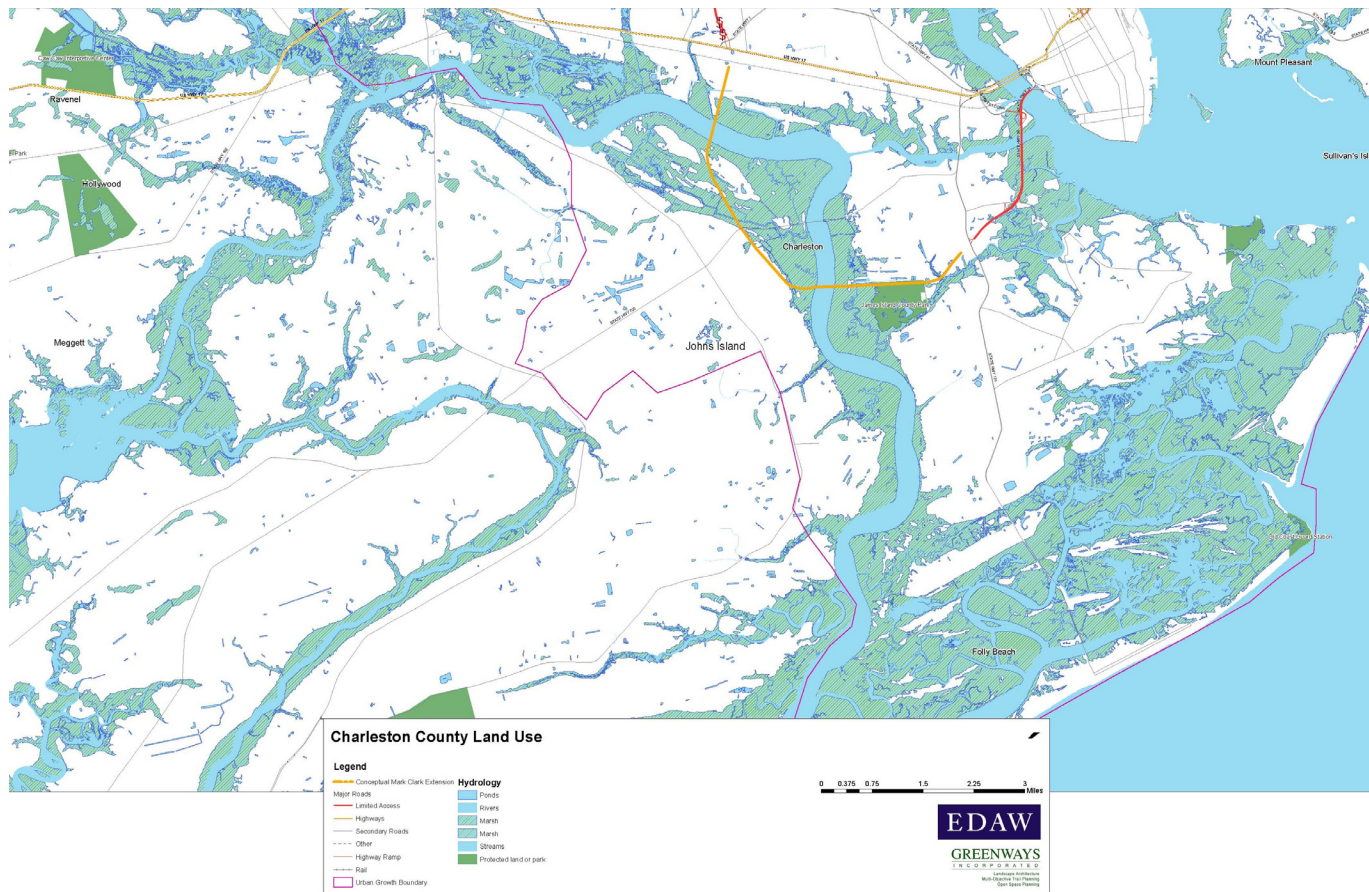


Figure 2.4 Environmental and Green Space Resources

Along with its unique physical assets, the Charleston region is rich in history. According to surveys of historic and archeological sites conducted in 1988, 1989 and 1992, unincorporated Charleston County has approximately 1,170 sites of interest. James Island and Johns Island contain 330 such sites. Table 2.3 lists historic sites in the two communities that are designated, nominated or eligible for historic protection. According to the Center for Heirs' Property Preservation, Johns Island also has a significant number of heirs' properties inherited by succession rather than under a will. Such sites can reveal the historic settlement patterns of the African-American community on the island.

As a former farming community, Johns Island also has a variety of rural historic landscapes that warrant protection. The grand live oak trees that line the scenic roads of Johns Island, particularly along River Road and Bohicket Road, visually reinforce this rural coastal heritage. The Lowcountry Open Land Trust (LOLT) works actively with landowners to retain private properties in a rural state. The LOLT maintains conservation easements for over 560 acres of land on Johns Island, as shown in Table 2.4.

The Charleston County Park and Recreation Commission (PRC) maintains two major recreation facilities in or near the Mark Clark study area: the Johns Island County Park, a 738 acre site

Johns Island	James Island
Fenwick Hall	Sons and Daughters of Jerusalem Church
Johns Island Presbyterian Church and Cemetery	Seashore Farmers Lodge
Moving Star Hall	King Solomon Farmers Union Lodge #3
Fort Trenholm	White House
Belvidere Rivers House	Washington House
Stanyare Cemetery	Heyward House
Gibbes House Ruins	
Bosomworth House Ruins	
Bosomworth Smokehouse Ruins	
Bosomworth Kitchen Ruins	
Andell House	
Mt. Hebron Church	

Table 2.3 Listed or Poential Historic Sites, Johns Island and James Island

Area	Acreage
Ravens Bluff	154
Bugby Plantation	192
Irvin Tract	82
Veronee Tract	30
Andell House	13
Goff Point	15
Breezy Hill	60
Belvidere Plantation	17

Table 2.4 Protected Land on Johns Island

that includes the Mullet Hall Equestrian Center; and the James Island County Park, a 648 acre site with a campground, vacation cottages, conference center, splash park, and Challenge Course. The James Island Park is one of the PRC's major revenue centers. In 2005, the campground generated \$682,442 in direct camping fees, while the campers' outside expenditures circulated an additional \$4,134,886 in the local economy. The popular Holiday Festival of Lights attracts over 18,000 visitors each year to the park.

According to the Charleston County Park and Recreation Commission Open Space Analysis, the county should add 4,674 acres of park space and 200 miles of new trails to satisfy the regional parkland needs of future populations within Charleston County. In addition to parks, public surveys indicate that area residents view access to tidal creeks and rivers as an essential part of the lowcountry lifestyle. Public water access points exist at the John P. Limehouse landing on Johns Island; and the Riverland, Wappoo Creek, Battery Island and Folly River landings on James Island/Folly Beach. Johns Island and James Island/Folly Beach each has three private marinas.

2.10 Stakeholder Participation

To assess the likely impacts of the Mark Clark extension on the study area, the planning team gathered feedback from community groups, including the Johns Island Growth Committee and the



Figure 2.5 Boat Landing at John P. Limehouse



Figure 2.6 Johns Island Stakeholders

Johns Island Council, and various stakeholders representing parks, property owner, conservation, economic development, recreation, and transportation interests. Stakeholders identified a common set of island characteristics that they either valued or desired to see strengthened, including:

- Rural landscape and agricultural heritage
- Serenity
- Tree covered scenic corridors
- Views of wetlands and marshes
- Inclusiveness and a sense of community and family
- Job opportunities
- Housing opportunities
- Park and recreational opportunities

Conversely, when asked what possible impacts from the Mark Clark extension most concerned them, participants cited the loss of the qualities noted above. Particular concerns included:

- Traffic congestion and visual clutter on the roadways
- Disruption to natural views
- Loss of trees
- Displacement of long-time residents
- Changes in the relaxed, friendly atmosphere of the community

This shared vision of the stakeholders forms the basis of recommendations described later in this report.

2.11 Relevant Existing Plans and Policies

Charleston County, the City of Charleston, and the communities of Johns Island and James Island have a tradition of strong planning and a variety of plans currently in place to protect resident's quality of life.

Charleston County Comprehensive Plan

The thrust of the Charleston County Comprehensive Plan, concluded in 1997, is to balance quality new development with

the preservation of the county’s unique historic and scenic character, farmland, and natural environments.

The Comprehensive Plan addresses future land use for Johns Island and James Island. Policies call for James Island to develop at suburban densities throughout, while Johns Island should transition from suburban to rural to agricultural character from north to south. The plan designates the area surrounding the Maybank Highway corridor for suburban intensities.

A key policy to reinforce desired character is the provision of public water and sewer service. Developments in all urban and suburban areas require connections to public water and sewer, if available. At the same time, policies limit water and sewer service extension into rural and agricultural areas, where increased infrastructure capacities could promote unsuitably dense development.

The Comprehensive Plan identifies a range of policies for infrastructure delivery and growth management on James Island and Johns Island, including:

- Limiting the extension of water and sewer service to urban and suburban areas
- Preserving scenic roads
- Maintaining levels of service for police, fire, emergency medical care, and libraries
- Maintaining adequate levels of service for hurricane evacuation
- Protecting prime farmlands
- Increasing housing alternatives for lower-income households
- Mitigating the impact of on-site sewer systems on the natural environment and water quality

Charleston County Development Regulations

Existing development regulations can significantly shape future growth on Johns Island and James Island. Notably, Charleston County has well thought-out guidelines on architectural design, landscape design, land use buffers, parking lot landscaping, signs, and right-of-way buffers. These measures promote higher quality development throughout the county. Also, Charleston County has strong protections for the preservation of tree cover and “grand trees.”

Charleston County also requires planned right-of-way buffers directly adjacent to the roadway for all uses other than single family residential and agricultural. Buffers must include a variety of plantings, including canopy trees, evergreen trees, shrubs, and street trees. Maybank Highway and River Road must support a required 75 foot buffer, a critical component in preserving their scenic and rural character.

Charleston County has three special use districts, including a district specifically for Johns Island. The Natural Resource Management District is intended to facilitate land conservation

Minimum Frontage for Commercial Development	250 feet
Minimum Front Yard Buffer	75 feet for most uses 200 feet for industrial uses
Minimum Buffer Planting	9 canopy trees per 100 linear feet 12 understory trees per 100 linear feet 60 shrubs trees per 100 linear feet 2 street trees per 100 linear feet
Maximum Sign Height	8 feet
Maximum Sign Size	40 square feet
Accessory Structure	No more than 25% of principal structure

Table 2.5 Maybank Highway Corridor Overlay District Regulations

and natural resource management. The Water Dependent Use District is intended to promote water-based land uses along waterfronts, with detailed guidelines for the provision of marinas. Lastly, the Maybank Highway Corridor district contains a series of guidelines to promote its scenic and rural character and to improve traffic flow through access management. This district establishes minimum frontage for commercial, industrial buffers, maximum sizes and heights for signs, limits accessory structures, and establishes right-of-way buffers for the corridor. (See Table 2.5)

City of Charleston Century V Plan

The Charleston Century V Plan is a high-level working document that provides an accessible policy guide for city residents. After a brief review of city and regional contexts, the heart of the plan lays out a series of broad themes to guide city development policy to 2015.

One of the goals of the Century V Plan is to create a series of Gathering Places around the city. Gathering Places are concentrations of activity that serve both civic and commercial functions. The Century V Plan states that Gathering Places should each have a unique sense of place, and should accommodate special events. As places of intense activity, Gathering Places should be the focus of infill and redevelopment efforts and should connect to available transit. The plan designates three Gathering Places on Johns Island: Maybank and Main; Maybank and River; and along the Maybank Corridor between Main and River.

The Century V Plan also emphasizes a theme of quality neighborhoods throughout the city. These neighborhoods should feature amenities, such as schools, parks, and recreation within walking distance. Most neighborhoods should contain retail, places of worship, civic institutions, and work places. At the same time, neighborhoods should be buffered from incompatible uses that are larger in scale or generate high volumes of traffic. Each neighborhood should have its unique definition, and some neighborhoods may require detailed design studies to protect or enhance their

character. A range of building types and a range of housing types should mix within each neighborhood to promote demographic diversity.

The Century V Plan prescribes the availability of parks at various scales and functions. Every home should be no more than 10 minutes away from a small park, while large parks should connect several neighborhoods. Other important park goals are to connect all Charleston residents to nature, to improve waterfront access, and to create shared civic or communal spaces for adjoining institutions.

Johns Island Plan/1995 Land Use Study

The 1995 Land Use Study is a land use and resource protection policy document focused on protecting the distinctive characteristics of Johns Island. The 1995 Study is an update of an earlier 1988 plan for the island. Preservation priorities for Johns Island include tree-lined rural roadways, historic structures, and wetlands and wetland buffers. The plan also notes the key role that involved, long-time residents play in defining the community character of the island.

The plan focuses on Maybank Highway as the anchor of community and commercial activity. The goal is to make the Maybank Corridor the heart of the island's major civic uses and a central gathering place for residents. The standards for the corridor specify desired scale, buffers, parking, signs, and tree preservation for a wide mix of residential, commercial, institutional, and light industrial uses. The design standards for Maybank are intended to create a cohesive feeling along the corridor and to ease the transition between commercial and residential activities. The plan also designates a gateway district for the northeastern part of Maybank between the Stono River and River Road.

Other plan policies require wetland buffers for marshfront properties to protect the scenic views of wetlands and to lessen wetlands impacts and guidelines to retain the visual appeal of scenic roads and to preserve rural character and agricultural uses.

The plan recommends implementation actions for the City of Charleston and Charleston County, including resource protection measures for historic sites and structures and consistency between city and county regulations.

Comprehensive Greenbelt Plan

Charleston County has recently adopted (2006) a Comprehensive Greenbelt Plan that creates strategies for allocating an anticipated \$220 million in Transportation Sales Tax funds. The Greenbelt Advisory Board oversaw development of plan policy.

The Greenbelt Plan assesses the current inventory of greenspace for the county, and summarizes the needs and goals of residents. Using local input and nationally researched standards, the plan lays out a vision for the county's future greenspace acquisitions.

Targets include setting aside 30 percent of lands as greenspace and creating 200 miles of greenway trails. The plan incorporates the many functions of greenspace—as natural resources, as historic and cultural resources, as scenic landscapes, as locations for outdoor access and recreation, and as resources to protect public health and safety.

The proposed greenbelt system consists of five components: Rural Greenbelt Lands, the Francis Marion Forest, Lowcountry Wetlands, PRC Regional Parks, and Urban Greenbelt Lands. Each category has a greenspace acreage target. The largest category for future greenspace acquisition is Rural Greenbelt Lands. The Greenbelt Plan details the need, function, and distinguishing characteristics of each of these types of greenspace, and recommends acquisition priorities by category.

While most of Johns Island is eligible for rural funding under the Greenbelt Plan, a portion of the island (around Maybank Highway) falls under the urban greenspace category. The plan also recommends greenway corridors along both Maybank Highway and Folly Road.

Funds from the Charleston County Greenspace Bank can directly purchase some greenspace areas. But many candidates for greenspace protection must compete for grants on the basis of criteria, such as the thoroughness of planning and financing, the range of public support, and distinguishing characteristics of the land proposed for protection. Communities that organize and propose grants to the Greenspace Bank will increase their likelihood of winning funds for greenspace acquisition.

Community Impacts



*New Development
and Infrastructure*

3.1 Changes to Growth Patterns

Summary of Research on Highway Extensions

Research from a variety of sources indicates that highway extensions in urbanized areas induce both population and employment growth in the areas immediately surrounding the new segments (See the Appendix for a full listing of studies). Most empirical models predict a link among transportation improvements, higher land prices, and increased development densities. New highways lower the cost of commuting to jobs and, therefore, escalate land values in locations of improved access.

Highway extensions generate a variety of growth, but exert the strongest influence on new residential and office development. Interstate exits in particular are subject to market pressures for commercial development. Convenience retail uses create a high demand for land immediately around interstate exits in turn increasing land values in these areas.

While the relationship between transportation access and land use patterns is strong, access is only one of many factors that promote growth. For example, one study indicates that average personal income for an area was a greater predictor of growth than interstate access.

Projections of Population Growth

BCD COG PROJECTIONS

In 2003, the Berkeley-Charleston-Dorchester Council of Governments forecast population and employment growth for the years 2003 to

2030. Projections reflect existing population and employment patterns and likely trends in the region. The forecast did not consider the Mark Clark Expressway extension.

Table 3.1 summarizes projected population and employment growth by planning area for the year 2030. The forecast indicates that recently growing planning areas such as East Cooper, the Dorchester Road Corridor, North Charleston, and Goose Creek Hanahan will continue to absorb the highest share of people and jobs. New directions of growth include Northwest Berkeley County and Dorchester County West—areas more inland than traditional growth patterns in the region.

James Island is forecast for relatively low growth, adding 5,725 people (a 16 percent increase) and 1,926 jobs in the next 27 years. Johns Island, which is part of the larger Coastal Islands West planning area, is forecast for moderate growth, adding 12,651 people and 4,073 jobs. This population increase represents 70 percent growth for the existing Johns Island residential base, or about a 2 percent increase each year. Clearly, even without transportation improvements, the Johns Island community will see more growth over the next two-and-a-half-decades.

MODEL PROJECTIONS

Since Johns Island (and to a lesser extent James Island) will grow even without the Mark Clark project, the planning team used a population and employment land use model to isolate the possible impacts of the extension on population growth. The model forecasts population growth within a small geographic area known as a Transportation Analysis Zone or TAZ. The level of growth varies based on each TAZ's access to employment and the inherent residential

Planning Area	Population Increase, 2003-2030
Grand Total	238,371
East Cooper	36,110
North Charleston	28,326
Goose Creek Hanahan	23,850
Northwest Berkeley County	22,250
Dorchester Road Corridor	19,994
Dorchester County West	19,072
Central Summerville	15,578
Santee East	13,532
Moncks Corner	13,321
Coastal Islands West	12,651
West Ashley	12,404
Charleston Peninsula	6,726
James Island	5,725
Ashley Phosphate North	3,631
East County	1,897
Charleston County West	1,830
St George	1,252
Edisto Beach	222

Table 3.1 BCD COG Projected Population Increase through 2030

desirability of the planning area. The model forecasts population changes both with and without the Mark Clark extension to estimate the increment of growth directly related to the project. The results of the population-employment land use model are summarized below.

The model indicates that the following planning areas will experience more growth than forecast by the BCD COG model:

1. James Island
2. East Cooper
3. East County
4. Coastal Islands West
5. Northwest Berkeley County

The model predicts less growth for the following planning areas than the BCD COG forecast:

1. Dorchester Road Corridor
2. North Charleston
3. Goose Creek Hanahan
4. Dorchester County West
5. West Ashley

In general, the model predicts more growth on the eastern and western fringes of the region, and less growth in the central, more developed areas. This result is consistent with the idea that the extension of the Mark Clark Expressway will better connect the western fringes of the region to major employment destinations.

Planning Area	Employment Increase, 2003-2030
Grand Total	87,452
Goose Creek Hanahan	23,640
Central Summerville	14,285
Dorchester Road Corridor	11,681
North Charleston	7,027
Ashley Phosphate North	5,385
West Ashley	4,220
Coastal Islands West	4,073
Northwest Berkeley County	4,055
East Cooper	4,008
Moncks Corner	2,649
Santee East	2,485
James Island	1,926
Charleston Peninsula	923
Dorchester County West	653
Charleston County West	204
St George	135
East County	103
Edisto Beach	0

Table 3.2 BCD COG Projected Employment Increase through 2030

Planning areas where growth is accelerated due to the Mark Clark extension:

1. Coastal Islands West
2. Dorchester County West

Planning areas where growth is decelerated due to the Mark Clark extension:

1. East Cooper
2. Goose Creek Hanahan
3. North Charleston
4. Northwest Berkeley County

In sum, the Mark Clark extension is likely to divert growth that would otherwise emerge in the eastern and central sections of the region to the more westerly areas, including the study area. Nearly all of the diverted growth is to the Coastal Islands West planning area. The model predicts approximately 22 percent more growth would occur in Coastal Islands West with the Mark Clark extension than without the project. Virtually no additional growth is forecast for James Island due to the Mark Clark extension.

Overall, the results of the model suggest that Johns Island will see 20 to 40 percent more population growth than predicted by the current BCD forecast, and that James Island will see 0 to 10 percent more population growth than predicted by regional

	2003 Pop.	2030 Pop., BCD Forecast	2030 Pop., Model Adjustment	Estimated Mark Clark Induced Increase
James Island	36,753	42,478	42,400-43,100	0-700
Coastal Islands West	18,177	30,828	33,300-35,900	2,500-5,100

	2003 Emp.	2030 Emp., BCD Forecast	2030 Emp., Model Adjustment	Estimated Mark Clark Induced Increase
James Island	8,406	10,332	10,300-10,500	0-200
Coastal Islands West	5,199	9,272	10,000-10,900	800-1,700

Table 3.3 Estimated Impact of Mark Clark Extension on Population and Employment Growth

forecasts. The results of this population growth modification are displayed in Table 3.3.

The models concludes that although the Mark Clark will generate additional growth in the study area, most of the expected population increase will result from other regional factors already underway, such as economic expansion and development and demographic trends.

A further point of the analysis is that compared to other parts of the region, both Coastal Islands West and James Island will experience a moderate rate of growth even with the extension. The center of the region and newer growth communities located inland will continue to attract more residents.

Projections of Employment Growth

Increased interstate access can induce job creation, as well as population growth. Some employment growth will result indirectly as an increasing residential base consumes more services. But employers also seek locations with the strong regional access provided by proximity to an interstate network. However, other factors also influence employment site selection. Employers tend to locate near either suppliers or customers or their employee pool. For all of these reasons, employment types tend to cluster in certain geographic areas.

The economic base of James Island and Johns Island consists mainly of population-serving or tourism-based employment – Education, Health, and Social Services; Retail Trade, and Entertainment, Accommodations, and Food Services. Therefore, it is unlikely that the study area or surrounding areas will emerge as centers for non-population based employment, such as offices or industrial/manufacturing activities. The expected growth in retail, personal services, educational and health care activities on the islands, particularly on Johns Island, can also reduce the jobs-housing imbalance that contributes to higher levels of unemployment.

3.2 Measurable Development Impacts

Capacity Analysis

The planning team conducted a capacity analysis to determine how increased housing demand might affect Johns Island during the time horizon of the study (through 2030). The capacity analysis consisted of comparing the estimated demand for new housing units through 2030 with the estimated supply as constrained by existing zoning regulations. The conclusion of the capacity analysis is that the supply of zoned land can readily accommodate foreseeable housing demand on Johns Island through 2030.

The first part of the capacity exercise examined housing demand on Johns Island based on the population forecasts of the BCD COG through 2030. By combining population projections and average household size, the analysis estimated the number of occupied housing units. Next, the analysis altered the forecast to reflect the estimated population impact of the Mark Clark extension. As described previously, an employment and land use model estimated an additional increase of 20 to 40 percent in the numbers of new residents on Johns Island as a result of improved interstate access. Based on a medium growth rate of 30 percent, the Johns Island part of the study area is forecast to increase from a 2003 level of 2,858 occupied housing units to 9,068 occupied housing units.

The next part of the capacity analysis examined potential housing supply. Both the amount of developable land available and zoning controls effectively restrict the density of housing development. Both the City of Charleston and Charleston County zoning regulate development opportunities in the study area.

Based on the maximum possible build out under existing regulations, the 5,258 acres of city land in the study area could yield a maximum of 30,677 housing units. The 11,765 acres of county land in the study area could yield a maximum of 5,781 housing units. It should be noted, however, that in many cases land will not be (or has not been) developed to its maximum allowable density. Various other factors constrain development densities,

including market conditions, environmental issues, and infrastructure capacity. Nevertheless, the total potential housing supply, based on current zoning categories, is 36,458 housing units—a capacity that can easily accommodate future housing demand on Johns Island.

Environmental and Infrastructure Restrictions

The amount of wetlands and surface waters on Johns Island also limits development opportunities. Large wetland areas exist along the edges of the Stono River, the Wadmalaw River, Simmons Creek, Appabolla Creek, Bohicket Creek, and other tributaries of the Stono and Wadmalaw Rivers.

Though environmental constraints exist, the existing urban growth boundary plays a more significant role in limiting the spread of development across the island. The urban growth boundary is centered on the intersection of Maybank Highway and River Road and extends to the Bohicket/Main Road intersection with Maybank.

Both city and county zoning and current infrastructure extension policies limit areas of intense development. The City of Charleston, for example, will not extend sewer service to properties outside of the Urban Growth Boundary. The St. Johns Water Company had previously proposed a 30-inch water line across lower Johns Island, sparking community controversy about the possibility of induced growth. The water company will now install a 24-inch line that is more consistent with Charleston County’s Comprehensive Plan. The City of Charleston does not plan to expand the Urban Growth Boundary so long as adequate development opportunities remain available inside the boundary. The Urban Growth Boundary is likely the strongest cooperative city-county policy on limiting future development on Johns Island.

Housing Affordability

Housing prices have risen rapidly in the Charleston region over the past decade. Depending upon the location, median housing prices rose between 66 percent and 390 percent. For all areas of the region, housing prices have risen faster than per capita incomes, which increased only 56 percent. Housing prices increased most quickly on island locations, namely Folly Beach, Isle of Palms, and Sullivan’s Island. Johns Island also experienced a sharp increase in its median housing price, with prices rising 160 percent between 1995 and 2005. James Island saw a strong but less dramatic increase of 97 percent over that same period.

The extension of Mark Clark to Johns Island and James Island will increase the residential attractiveness and subsequent value of land near the interstate due to improved access. Considering the proximity to employment, the rest of the region, and the scenic characteristics of Johns Island, land and home values could increase significantly. Currently, Johns Island is one of the most

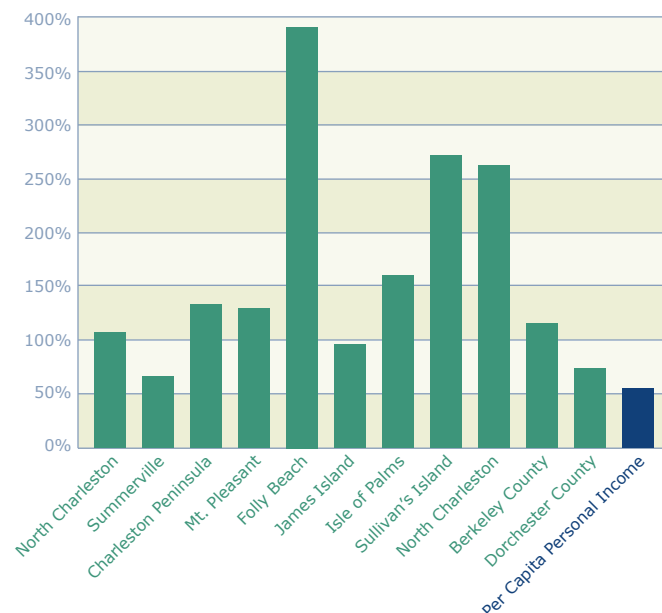


Table 3.4 Median Housing Price Increase, 1995-2005, Source: Sea Island Habitat for Humanity

affordable close-in housing areas in Charleston. With easier regional access, land values on the island will likely approach the higher levels of similarly situated communities, such as West Ashley and East Cooper.

The rise of home values has a mix of positive and negative effects. Current home owners may benefit from housing appreciation. Renters, however, may pay higher rents as land prices rise. Residents on a fixed income, such as senior citizens, could also be vulnerable to financial pressures as rising property assessments increase property taxes. Earlier analysis indicated that most job growth on Johns Island will be in the traditionally lower-wage service sector. A reduction in the supply of affordable housing could adversely affect the island’s service workforce.

Affected Populations

A potential concern of the Mark Clark Expressway is its impact on indigenous populations—people who have lived on Johns Island and James Island for their whole lives or multiple generations. Many of these ‘indigenous’ people are also less wealthy populations. The census data identified residents who have been in their homes for at least 30 years as of 2000. This proxy indicator reveals the extent of indigenous population patterns on Johns Island and James Island. (See the Appendix for graphics illustrating the distribution of populations of concern).

Most of Johns Island has a fairly low percentage of homeowners living 30 years or more in their homes. One exception is the area immediately south of Maybank Highway and east of Bohicket Road, which has an indigenous population between 16 and 24 percent. Another concentration of estimated indigenous popula-



Figure 3.1 New Housing Development on Johns Island

tions exists along the western edge of James Island, in the vicinity of the planned Mark Clark extension.

The African-American community represents a second population of concern on Johns Island and James Island. In the study area, about 38 percent of Johns Island's population is African-American, while about 27 percent of James Island's population is African-American. Charleston County as a whole was 34.5 percent African-American in 2000.

The affected study area does not include a disproportionate concentration of African-American residents. In fact, the areas of James Island that will be directly affected by the Mark Clark extension display a smaller percentage of African-Americans than other parts of the island and other parts of the region. The Center for Heirs' Property Preservation, however, notes that Johns Island contains a relatively high percentage of commonly held family land. The lack of formal legal agreements to protect the ownership, division and sale of heirs' property makes this land particularly vulnerable to loss in the wake of mounting economic and development pressures.

A third population of concern is lower income households. Areas with higher proportions of poverty include western Johns Island, parts of Wadmalaw Island, and areas around Folly Road in northern James Island. Also, the area south of Maybank Highway and east of Bohicket Road displays an above average poverty level.

For the most part, elevated poverty levels are seen in the more rural parts of the county that will not be significantly affected by the Mark Clark extension. However, the physical alignment of the extension and the resulting forces of gentrification could affect an area of concentrated poverty around Folly Road on the northern part of James Island

While the direct physical displacement of vulnerable households as a result of the Mark Clark project is limited, broader economic forces accelerated by improved highway access, such as escalating property values, are likely to affect long-time residents, lower-income residents, and heirs' property owners in the Johns Island and James Island communities.

3.3 Proposed Infrastructure Extensions

Infrastructure serves both as a quality of life improvement for existing residents and as a catalyst for new growth and development. Development at urbanized densities depends upon adequate infrastructure, in particular sufficient water, sewer, and roadway capacity. Controlling the location and timing of infrastructure investments is one of the strongest tools for growth management. Several infrastructure projects, in addition to the Mark Clark extension, have occurred in or are planned for the study area.

Mark Clark Expansion

In addition to the extension examined as part of this report, a proposal exists to expand the capacity of the Mark Clark Expressway from four lanes to six lanes between I-26 and US 17/Savannah Highway. This expansion would allow for a higher volume of traffic flow and higher capacities during peak travel periods. The result of this expansion could be twofold: better levels of service and decreased congestion along these segments of the Mark Clark Expressway; and potential increased development along the Mark Clark corridor induced by this increased access. This proposed expansion is not expected to affect the study area.

Cross Island Expressway

A cross-island expressway or Sea Island Expressway has been previously proposed to increase access from Seabrook and Kiawah Island to downtown Charleston and other urbanized areas. A cross-island expressway could have significant environmental and aesthetic impacts to Johns Island though such impacts would vary depending upon the number and location of expressway access points. The project is currently only a concept, but any further steps in planning should include a careful evaluation of possible growth impacts.

St John Water Company Water Lines

The St. John Water Company is currently constructing a 24-inch water line down River Road to serve Kiawah and Seabrook Islands. Local opposition resulted in a scaling back of the original proposal for a 30-inch water line. The 24-inch line could serve up to an estimated 10,000 homes. Currently, Johns Island has less than 3,000 households. It is also possible that the water line could extend to serve Wadmalaw Island, which is predominantly rural. One notable aspect of the water line extension is that it reaches well beyond the current Urban Growth Boundary for Johns Island.

Sewer Lines

The City of Charleston provides sewer service on Johns Island. The city limits the extension of sewer services to those areas that are either within the city or within the Urban Growth Boundary. This policy of geographic restriction on sewer extensions reinforces the Urban Growth Boundary and the growth plans of both the City of Charleston and Charleston County.

3.4 Direct Impacts

A 1995 Environmental Impact Statements (EIS) addresses the direct physical impacts of the proposed Mark Clark extension in detail. Though this study will not propose any physical alterations to the alignment or design of the expressway, this section highlights several key direct physical impacts. It should also be noted that this study does not specify an exact roadway alignment for the extension but assesses impacts based on an understanding of a conceptual corridor.

Roadway Construction

The routing of the roadway will directly displace relatively few homes and businesses. The EIS estimates that the possible alignments will require approximately 9 to 12 residences and 5 businesses to relocate. The land fill required to support heavy roadway structures will disturb between 90 and 110 acres of wetlands. The use of an elevated roadway design, however, can reduce the long-term environmental impacts to wetlands and waterways.

The extension corridor is anticipated to run adjacent to the northern boundary of the James Island Park. Depending on the eventual alignment chosen, the extension could result in the loss of 40 to 64 acres of existing parkland. Section 4(f) requires that the United State Department of Transportation replace parkland used for highway right-of-way with a similar property as close as possible. Loss of land along the northern edge of the park could adversely affect use of the Challenge Course. In addition to the possible physical loss of a portion of parkland, the proximity of the extended expressway could generate noise and ambient light that affect the camping experience.

Environmental Impacts of Roadway

Increased roadway surfaces will produce significant stormwater runoff. Construction will add approximately 86 acres of new impervious surface over the Stono River and associated wetlands. Facilities that store and gradually drain stormwater can mitigate this impact of untreated runoff on nearby wetlands.

Traffic

The extension of the Mark Clark Expressway could substantially reshape traffic patterns by creating new routes of access and by shortening travel times for certain trips. Some roads will experience increased traffic, while others will experience decreased volumes. Overall, traffic will shift to more direct and higher capacity routes. As an example, Johns Island residents currently travel secondary roads in West Ashley and James Island to reach other destinations within the region. The capacity of the Mark Clark to absorb an increasing portion of these trips is likely to reduce vehicular volumes on such regional “cut through” routes and thus improve roadway conditions in some areas.

According to the Charleston County Application to the South Carolina State Infrastructure Bank, roads that will see the largest decrease in traffic include:

In the study area:

- Maybank Highway between the proposed Mark Clark Expressway extension and Riverland Drive (from approximately 40,000 to approximately 21,000 vehicles per day);
- Main Road directly south of Savannah Highway (US 17) (from approximately 27,000 to approximately 12,000 vehicles per day);
- River Road between Main Road and Brownswood Road (from approximately 9,600 to approximately 2,600 vehicles per day).

Outside the study area:

- Savannah Highway (US 17) directly west of the Mark Clark Expressway (from approximately 49,000 to approximately 43,000 vehicles per day) and directly east of the Mark Clark Expressway (from approximately 43,000 to approximately 36,000 vehicles per day)

- James Island Expressway from the proposed SC 61 Connector to Harborview Road: (from approximately 76,000 to 59,000 vehicles per day);
- Bees Ferry Road (from approximately 33,000 to approximately 24,000 vehicles per day west of Glenn McConnell Parkway and from approximately 21,000 to approximately 15,000 vehicles per day east of Glenn McConnell Parkway);

And roads that would see the largest increase in traffic include:

Inside the study area:

- Maybank Highway between River Road and the Mark Clark Extension (from approximately 38,000 to approximately 59,000 vehicles per day)
- Maybank Highway between Bohicket Road and River Road (from approximately 8,000 to approximately 14,000 vehicles per day)
- A small increase in traffic on River Road south of Maybank Highway

Outside the study area:

- The greatest increase in traffic will be on the Mark Clark Expressway between US 17 and Glenn McConnell Parkway
- Other areas of the Mark Clark Expressway will experience increased traffic
- Sam Rittenburg Boulevard will experience increased traffic

Aesthetic Impacts

Aesthetic impacts of the proposed Mark Clark extension are a major concern. The Mark Clark Expressway extension has the potential to obscure or interrupt views of wetlands. Also, the ambient lighting associated with the Mark Clark Expressway may disturb the current dark night skies of Johns Island.

Hurricane Evacuation

Current hurricane evacuation routes include I-26, US 17/ Savannah Highway, SC 61/Ashley River Road. The Mark Clark Expressway extension will improve access to each of these alternative evacuation routes. It should be noted that on a regional basis, major traffic arteries have experienced bottlenecks, and so increasing access to these major arteries is only a partial solution to the challenge of efficient hurricane evacuation.

3.5 Community Character and Facilities

Community Character

Stakeholders have consistently expressed their desire to maintain the tranquil, lowcountry identity of the Johns Island community. Improved interstate access inevitably raises concerns over the

effects of suburban style sprawl on the current character of the island. The issue of sprawl is complex and contains multiple dimensions; sprawl is not just about the quantity of growth, but also about the quality and appearance of development.

As mentioned earlier in this study, the Mark Clark Expressway is likely to accelerate and increase the amount of development occurring on Johns Island. However, this impact exists within a broader context of regional change that is bringing more growth to outlying areas, such as Johns Island, regardless of highway improvements. The population on Johns Island is forecast to grow by half in the next 25 years even without the Mark Clark Expressway extension. Secondly, new retail development will develop to serve this expanded population.

Community stakeholders on Johns Island emphasized the importance of maintaining the current Urban Growth Boundary. The leapfrogging of development beyond this existing boundary could gradually blur the critical distinction between rural and urban areas. Stakeholders have also expressed concern over the physical form of future growth. The generic commercial strips, large shopping centers, and conventional, isolated subdivisions often associated with auto-oriented development patterns could diminish the unique rural heritage and visual qualities of the island.

Community Facilities Impacts

An increased residential population will generate demand for more community facilities, particularly schools, the provision of fire protection and police services, libraries and parks. More households will also increase the level of infrastructure use, possibly requiring the expansion of existing water and wastewater capacities, and the widening of secondary roadways that provide access to and from the Mark Clark Expressway. The segment of Maybank Highway between Bohicket Road and River Road is likely to require widening to support increased vehicular flow.

3.6 Socio-Economic Impacts

Along with the physical qualities of the island, Johns Island's identity is closely tied to the sense of community created by its inclusiveness, diversity and family tradition. Changing market conditions resulting from induced growth can produce market pressures that affect the character as well as the size of the population.

Loss of Affordable Housing

Johns Island and James Island are both more affordable than most close-in areas of the Charleston region, drawing a higher share of family households that require proximity to major employment centers. However, prices rose rapidly throughout the Charleston region in recent years and as stated in the report, the Mark Clark

extension is likely to accelerate this trend on Johns Island and James Island.

Loss of affordable housing is both a local and a regional issue. Regionally, a smaller supply of affordable residential units means that lower income families have more difficulty meeting their housing needs. Low to moderate income households earn incomes of less than 80 percent of an area's median income (Currently, 100 percent of the Charleston County area's median income for a household of four is \$55,900—low to moderate income families, therefore earn \$44,720 or less per year for a family of four).

These households often have to allocate a disproportionate share of their income to housing costs. The US Department of Housing and Urban Development suggests that a family should spend no more than 30 percent of their annual income on housing costs. Locally, a loss of affordable housing can mean a decrease in the economic and social diversity of the population.

Displacement of Long Time Residents Population

Johns Island and James Island have a substantial population of long time residents. Many of these residents are “land rich but cash poor”—that is the only significant asset they hold is their land. As long time residents, they have a particular connection to the island, often wishing to remain in place while protecting their property values as an asset for retirement or inheritance. Johns Island stakeholders place a high value on retaining long time residents. However, rising property taxes can threaten the ownership of landholdings of less affluent community members.

As noted earlier, Johns Island contains a relatively high percentage of commonly held family land. The lack of formal legal agreements to protect the ownership, division and sale of heirs' property makes this land particularly vulnerable to loss in the wake of mounting economic and development pressures.

Policy Options



Compatible Design Character

4.1 Recommendations

Previous sections of this report detail the expected development, social, and economic impacts of the Mark Clark extension on the Johns Island and James Island communities. These impacts primarily include an accelerated pace of population growth and supporting retail and community services. Changes in the area's market conditions, such as increasing housing prices resulting from improved regional access, are also likely to affect the demographic character of the communities. Given its rural landscape, Johns Island is more vulnerable to these impacts than the largely built-out James Island.

The policy options described below are intended to protect the island's distinctive qualities, while shaping inevitable growth into attractive development that reinforces the desired quality of life. Figure 4.1 illustrates the major recommendations related to physical design and site planning.

Reinforce the Urban Growth Boundary

The Urban Growth Boundary remains the strongest regulatory tool for managing urbanized growth. The boundary limits more intense land use activities to those areas with adequate infrastructure, while discouraging the conversion of rural and agricultural lands. Adherence to the current growth boundary will focus growth in an area of Johns Island defined by Plow Ground Road on the south and Main Road on the west.

The Urban Growth Boundary can be reinforced by the following actions:

- Maintain a coordinated, consistent county and city policy on the existing Urban Growth Boundary
- Restrict water and sewer extensions outside of the Urban Growth Boundary without approval from the city and county
- Limit city annexations to the current Urban Growth Boundary

Promote Gathering Places

The Gathering Place concept, found in the City of Charleston's Century V Plan, can be used to create retail and mixed use areas that enhance the character of Johns Island as it grows. Also, designated Gathering Places delineate appropriate sites for more intense growth, thereby preventing sprawling urban corridors.

Gathering places also function as more than commercial anchors. Each site should have a unique sense of place that reflects the distinguishing characteristics of its surroundings. Gathering places should also include inviting public spaces and civic functions, and feature pedestrian connectivity and convenient transit access. Designed as identifiable, walkable and multi-functional sites, gathering places become the hub of community activity.

The city plan currently designates three Gathering Places for the Maybank Highway corridor (See Figure 4.1). While this concept is a strong tool for managing corridor growth and integrating retail uses into the community, the city should further refine the Gathering Places districts to reflect the unique features of Johns Island. As an example, Figure 4.3 illustrates the development of the Maybank Highway and River Road intersection with building forms and landscaping that blend with surroundings and preserve visual character.

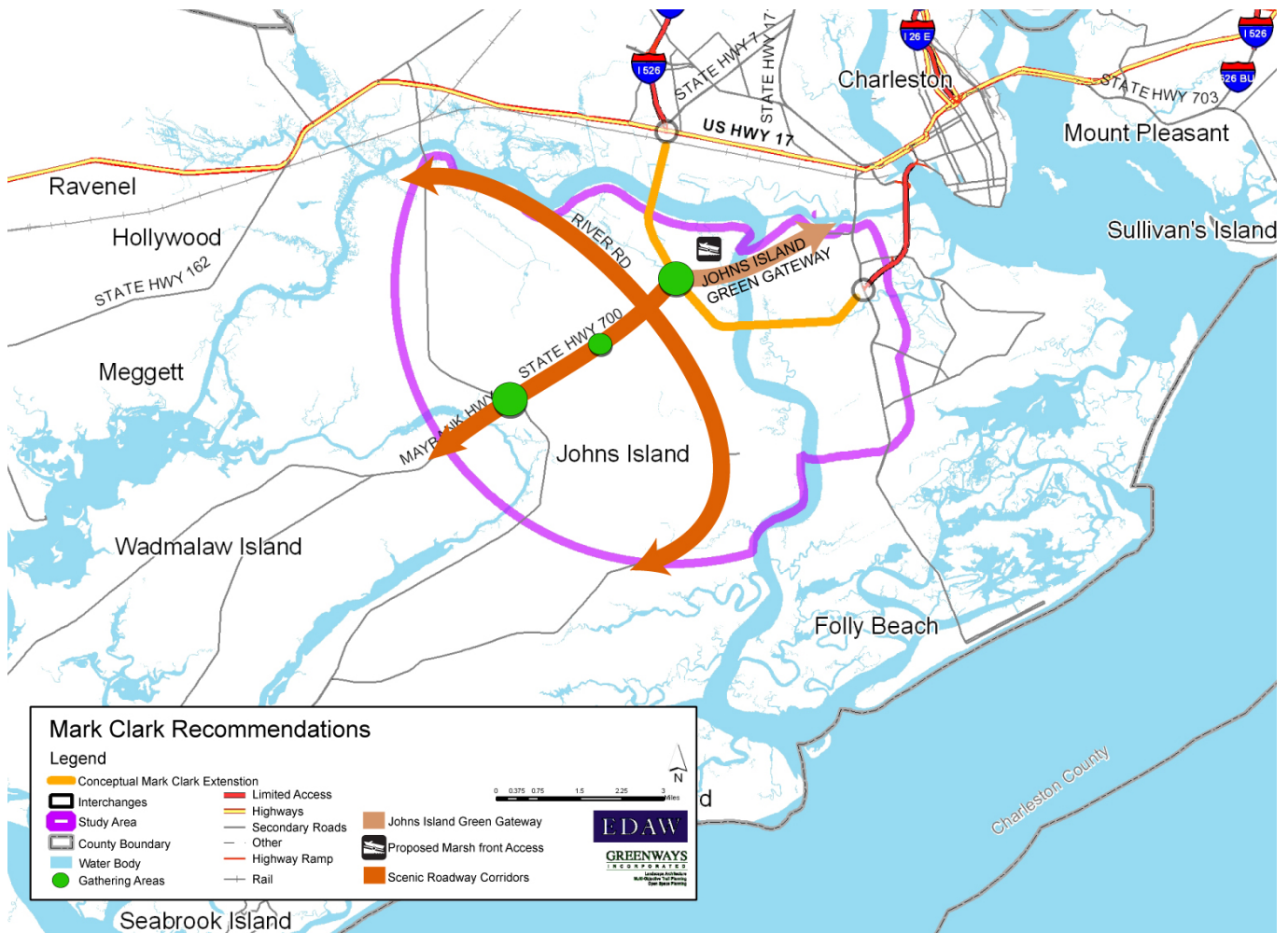


Figure 4.1 Recommendations Map



Figure 4.2 Appropriate Scale and Architecture



The Gathering Places concept for Johns island can be reinforced by the following actions:

- Set a maximum building height of three stories to maintain compatibility with the island's rural character
- Require physical connectivity to surrounding neighborhoods
- Require a minimum percentage of open space or green space in the form of a plaza, square or some other public area
- Encourage mixed uses, including multi-family housing as a development component
- Encourage the use of appropriate lowcountry architecture to reinforce island identity; elements may include:
 - wrap-around porches
 - pitched roofs
 - the use of materials such as tin
 - tall windows
 - high ceilings



Figure 4.3 Maybank and River Intersection - Before and After

The city can also refine the design and planning elements of the three designated Gathering Places through preparation of a master plan for each site. Each master plan should address urban design, the mixture of land uses, connectivity to streets and pedestrian pathways, and the role and type of public space. The 1999 plan for the intersection of Glenn McConnell Parkway and Bees Ferry is an example of how a community-driven planning process can facilitate the design of a quality gathering place.

Community Design of Corridors

The Maybank Highway corridor will be the primary focus for much of Johns Island's growth in the years ahead. Maybank Highway will likely add two lanes to accommodate increased traffic volumes from the Mark Clark interchange north of River Road. The corridor, however, also supports three Gathering Places and acts as the primary gateway into the community. As such, the corridor must balance safe pedestrian and bicyclist movement with efficient traffic flow and quality urban design.

To achieve these goals, the community should actively participate in a land use and design study that precedes the preliminary engineering phase on the corridor. The community effort should revisit elements of the existing overlay and refine design and

planning concepts to promote a village-style boulevard, including features, such as:

- A four-lane configuration, or an alternative configuration that carries equivalent traffic volumes
- Pedestrian and bicycle facilities
- A landscaped median with plantings characteristic of Johns Island
- Landscaped setbacks that maintain the character of the island while promoting pedestrian accessibility
- The type and scale of development that would be appropriate along the corridor
- Access locations and frontage roads
- The integration of transit access
- Best practices in access management for major corridors, particularly minimum spacing between driveways
- Street furniture designs that are distinctive to Johns Island

Figure 4.3 illustrates the use of these principles along Maybank Highway to ensure an attractive, functional and safe corridor for vehicles and pedestrians.

A high number of access points along the corridor can quickly erode both traffic circulation and the visual character of a corridor.

Vehicles accessing multiple driveways create a congested, stop-and-go flow. Maybank Highway is especially vulnerable to a linear, vehicle dominated pattern of development because of its long, narrow lots.

The design and study of the corridor should clearly emphasize controls on the number and spacing of access points to maintain a high level of service for through-traffic while, at the same time, providing reasonable access to abutting properties. The South Carolina Department of Transportation Access and Roadside Management Standards recommend the number of access points

allowed based on linear frontage and spacing between permitted driveways. A critical planning component of access management is to promote the clustering of retail uses on a single, integrated site that can be accessed from a shared drive. A clustered design for retail uses also minimizes visual and land disturbance impacts along the corridor. Figure 4.6 contrasts a conventional linear commercial pattern with multiple access points along a corridor with that of an integrated site approach.

Though Maybank is likely to see most of the growth associated with the Mark Clark extension, the county should develop a similar, though more rural oriented, corridor overlay to preserve the tree-lined character of River Road (See Figure 4.1).



Figure 4.4 Maybank Highway Before



Figure 4.5 Maybank Highway After

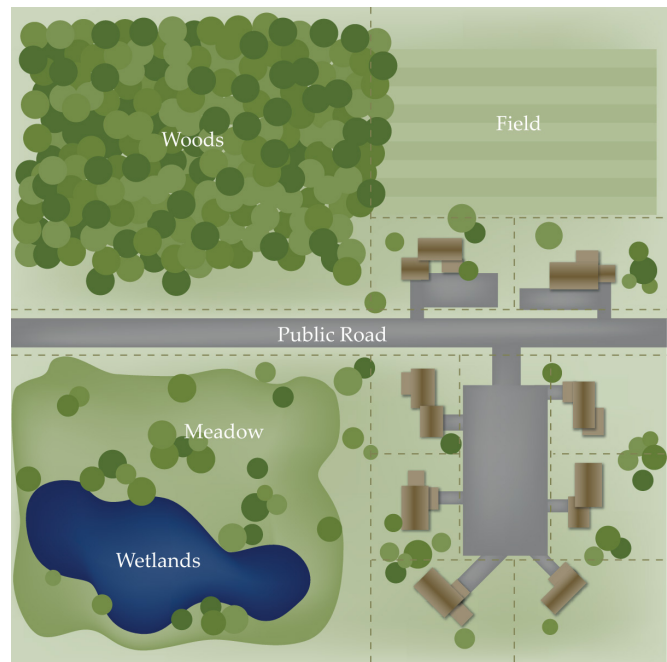
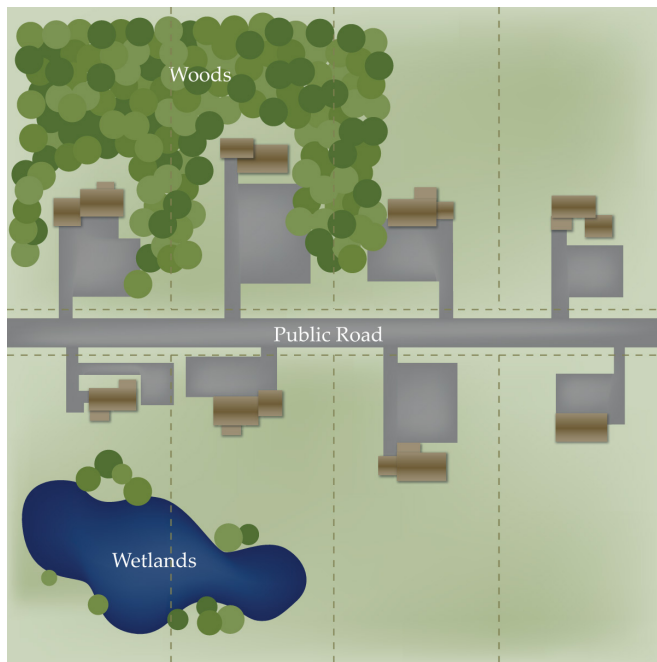


Figure 4.6 Conventional, Multiple Access Development vs. an Integrated Site Approach

Community Design of the Maybank Highway Interchange

Stakeholders have cited concern over the interchange of the Mark Clark Expressway with Maybank Highway just north of River Road. The visibility and high traffic flow around highway interchanges often generate market pressure for intense commercial and office uses on adjoining land.

The interchange on Maybank, however, can represent the opportunity to create a unique, rural gateway into the community through landscaping and marsh preservation. Careful design can also function in a traffic calming role, easing the transition between the expressway and Johns Island’s major roads. This concept is consistent with the Johns Island Plan designation of a gateway district for the northeastern part of Maybank between the Stono River and River Road. The stretch of corridor should remain in a primarily rural state to emphasize the natural beauty of the nearby marshes and tree cover (See Figure 4.1). Community stakeholders should actively participate with the SCDOT to design an interchange concept that protects valued visual character.

A secondary benefit of construction of the expressway and interchange is the opportunity to create additional park space on severed land areas. For example, a marsh access park could be created on an uplands parcel to the northeast of the Mark Clark extension (See Figure 4.1).



Figure 4.7 Opportunities for Marsh Front Park Space



Figure 4.8 Green Interchange Design

Green Infrastructure

A study of the impacts of the Mark Clark extension shortly following adoption of the Charleston County Greenbelt Plan offers excellent opportunities to coordinate and prioritize green space protections measures. The Greenbelt Plan lays out a county-wide strategy for allocating the greenbelt portion of Charleston County's Transportation Sales Tax. These greenbelt funds can be used to protect the agricultural and rural landscapes that are of value to Johns Island residents, or can fund parkland acquisition.

Efforts to capitalize on Greenbelt Plan funds should focus on creating a broad green infrastructure network that connects neighborhoods, green spaces, trails, historic and cultural sites, and recreational/natural assets, including protected agricultural landscapes, wetlands, marshes, greenways, pedestrian and bicycle paths, and scenic corridors. Johns Island also has unique opportunities to create a blueway—a series of natural access points along the water. A complete cultural and natural resources inventory is a critical step in identifying the many unique island assets that could be linked in such as network.

Greenways are an essential component of this strategy because they will link residents and visitors to natural, cultural and recreational sites throughout the island. Specific recommendations for the development of greenways include:

- Coordinate transportation and greenbelt funds to increase amount of funding available for greenways
- Design a network of pedestrian and bicycle paths that would connect various neighborhoods within Urban Growth Boundary to the Maybank Corridor and Gathering Places
- Primary greenways should be developed along Maybank and Bohicket Road
- Secondary greenways can run alongside other roadways or along the edges of wetlands and waterways

Along with the creation of a newly connected system of public spaces and cultural/recreational sites, the county should work to maintain the quality of the recreational experience at the popular James Island County Park. Ongoing collaboration between the SCDOT and the County Park and Recreation Commission can minimize expected visual and noise impacts.

Rural Development Standards

The maintenance of rural character involves more than limitations on development densities. Rural character is also rooted in existing landforms, features, and vegetation. Though previous strategies have focused on corridors within the study area, Johns Island should have a set of rural development standards to preserve its distinctive resources throughout the island. The Johns Island Plan identifies many of these cherished resources, along with compatible development standards.



Figure 4.9 Existing Greenspace on Johns Island



Figure 4.10 James Island County Park

The county can further refine these standards to include additional guidelines for site design, building envelopes, and roadway/driveway access. Architectural standards can also be used to promote vernacular forms that reflect the island's rural heritage.

A potential additional tool for protecting rural character throughout the island is a conservation subdivision ordinance. A conservation subdivision ordinance can encourage the protection of environmentally sensitive areas and the preservation of greenspace. Conservation subdivisions permit developers to cluster development on a portion of the parcel, allowing green space on the remainder of the site. These undeveloped portions of the site may be nature preserves, protected scenic views, parks accessible to residents, or even publicly accessible parks and greenways. Conservation subdivision ordinances usually specify a minimum set aside for greenspace and provisions to ensure that development is clustered on the most suitable part of the site. (See Figure 4.11)

Affordable Housing

Currently, Johns Island and James Island are some of the best sources for affordable housing for the Charleston region. The extension of the Mark Clark Expressway will likely accelerate

the rise in housing prices, and thus reduce the affordable housing supply. A second, related concern is that rising property values may cause displacement among poor, minority, and long-time residents.

The purchase of conservation easements is a potential tool for protecting long-time residents who own larger tracts of land. The purchase of a conservation easement allows a landowner to receive compensation for lost development rights. Often the sale of a conservation easement also reduces the taxable value of the property and so reduces property taxes as well. The placement of a conservation easement on the land also prevents future develop-

ment and preserves rural character. As a related issue, the county and city can support the efforts of the Center for Heirs' Property Preservation to raise educational awareness of heirs' property issues.

Along with protecting current residents, strategies to offset rising housing costs should focus on an increase in the supply of affordable housing. An important method for facilitating mixed-income communities is to require that new residential projects set aside a certain percentage of below market units based on regional median income standards. Developers may also be given the option of paying into an affordable housing fund.



Figure 4.11 Conservation Community Design

Long Range Planning

Both regional trends and the Mark Clark extension will contribute to an accelerated rate of population growth and development in the Johns Island and James Island communities. The county should improve its long-range planning capacity to track data trends and manage future land use change.

The intelligent use of Geographic Information System (GIS) data, for example, can support informed land use decisions that promote quality growth, protect environmental resources, manage fiscal and infrastructure resources, and strengthen community economic development. A spatial database that links existing and future land use with demographic or employment outcomes (or any other desired demand variables) allows planners to readily visualize future conditions as part of growth management planning, analysis and monitoring.