Partnership for Prosperity

A Master Plan for the Neck Area of Charleston and North Charleston

Final Report

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Executive Summary

Executive Summary

The Charleston Neck Area Partnership for Prosperity Master Plan presents a transportation and development planning framework that seeks to guide public and private investment in responsible, cost efficient ways that strenghten existing neighborhoods, solidify the area's economic vitality for lasting benefit, and attract appropriate new development that expands housing and travel choices. The Master Plan is a culmination of nearly three years of work focused on integrating various plans, projects and programs into a cohesive and clear strategy for a nearly 30 square mile area bounded by the Ashley and Cooper Rivers, the Charleston International Airport and the Ravenel Bridge in the Cities of North Charleston and Charleston, **Figure 1.1** shows the study area and its major transportation facilities and focal points.

Overview of the Master Plan

The objective for the project is to produce an integrated strategic Master Plan that respects and knits together the various planning and engineering components of transportation, urban design, land use and economic development into a unified whole. This unified planning and design framework provides clear guidance to state and local agencies, community stakeholders, the general public and the private sector about the vision for the Neck area, and the strategies and priorities necessary to achieve desired outcomes that can transform the community toward a more sustainable, livable and economically vital part of the region.

The Neck area is located at the heart of a growing region that has made economic development a priority through ambitious organizations and innovative programs and facilities. The Charleston region is on the rise, and it is well-positioned to benefit from a recovering national and global economy. With its central location, multimodal accessibility, and concentration of employment and economic activity, the Neck area is poised to be a key engine for regional growth. With this context supporting it, the primary challenge for the Master Plan is to define opportunities and actions that can most effectively tap the area's potential and bring prosperity to its residents, businesses, and other stakeholders.

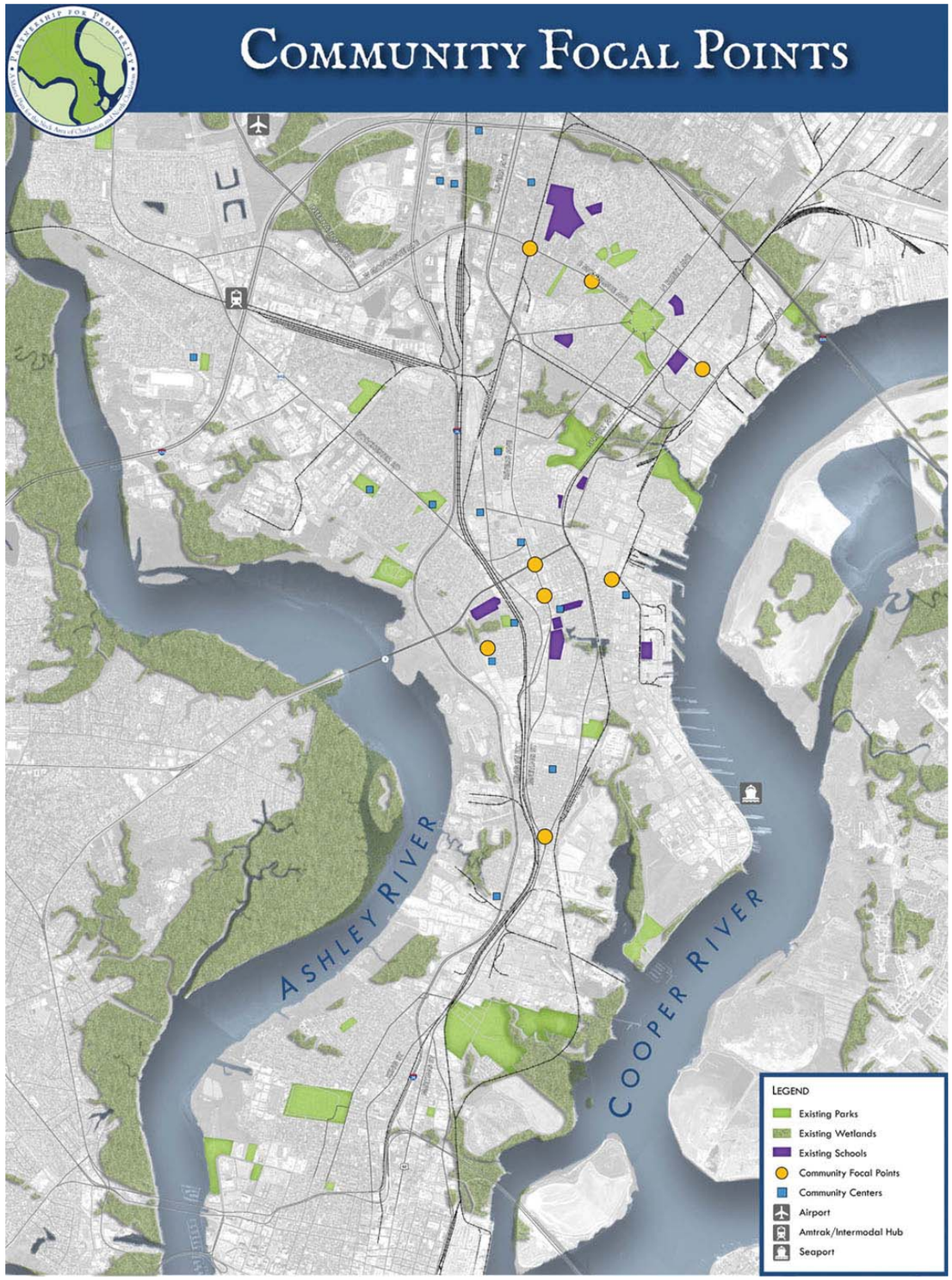


Figure ES.1 Community Focal Points (See Appendix A pg. 199)

The Master Plan presents a compelling vision for the Neck area's future that will guide investment. The developers, investors, companies, institutions, other stakeholders, and residents that will be participating in the area's revitalization will be looking for guidance and inspiration in conceiving and executing projects that will advance the vision. The Master Plan components provide a framework of catalyst area developments, transportation system improvements, land use and urban design principles, and details related to community structure, environmental issues, and goods movement that establish the "road map" for long-term redevelopment and revitalization of the Neck area. With this map available, participants will be more confident in taking actions that advance their own interests and collectively contribute to the realization of the Master Plan vision.

The Berkeley Charleston Dorchester Council of Governments (BCDCOG) initated work on the Charleston Neck Area Master Plan in close coordination with area local governments, state agencies and community-based organizations to ensure a well-coordinated and inclusive planning process. Thoughtful and innovative plans already exist for much of the Neck area, notably the Lowcountry Alliance for Model Communities' (LAMC) Community Profile and Final Plan and various transportation and land use plans developed or adopted by each of the study area's local governments or private entities, the Charleston Area Regional Transit Authority and the Charleston Urbanized Area Metropolitan Planning Organization.

A primary objective of the planning process entailed using these prior plans as a foundation to create the area-wide Master Plan in a way that helps integrate the plans and position them to achieve their goals and objectives. Each of the plans has a different area of focus, and none of them address the full extent of issues, emerging trends and opportunities for the entire study area. Many have recognized that the Neck area is lacking a long-term land use, transportation and economic strategy that clearly maps out an organized approach to development and transportation to improve the quality of life, standard of living and shared economic opportunity for the area's existing and future residents, commerce and institutions. Thus, the Master Plan seeks to put in place a planning framework designed to support priority investments, target growth and redevelopment areas, and protect existing communities and eco-systems while enhancing their overall quality.

Through a competitive selection process the BCDCOG selected a consulting team led by Renaissance Planning Group to prepare the Master Plan from a fresh perspective unfettered by any involvement in prior planning activities for the study area or region. Team members providing special expertise and local knowledge include the firms CDM Smith, HDR, DesignWorks and Civic Communications.

The BCDCOG convened a steering committee comprised of the cities of North Charleston and Charleston, Charleston County, the South Carolina Ports Authority and South Carolina Department of Transportation to guide the development of the Master Plan. Each of those entities has statutory responsibility for development of the study area's transportation network and its land use plans. An extensive community engagement process complemented the work of the BCDCOG and steering committee to support a community-based planning process that sought out the opinions, perspectives and desires from a diverse range of residents, businesses, organizations and land owners in the Neck area. Through a series of focus group discussions, small group meetings, large workshops and a week-long design charrette, those community participants helped to shape the Master Plan in many ways. They identified problems, suggested projects or programs as solutions, provided feedback on the consultant team's ideas and gave input into recommended strategies, priorities and their implications.

It Starts with a Vision

Resolution of issues in the context of the Neck area looked to build on the existing planning efforts completed or underway by various stakeholders, balance economic development and sustainability, balance regional mobility with community livability, and create a strong sense of ownership for the planning framework from the Neck area's diverse stakeholders. The Master Plan provides a shared vision and planning framework that reflects an inclusive process, regional influences, local conditions and strategic opportunities, and guides decision-making for short term actions from a long range perspective.

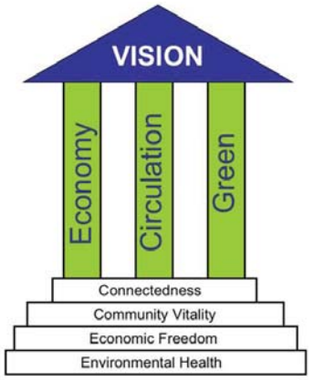
Early in the planning process a working vision emerged from prior plans and a fresh assessment of issues and opportunities to provide a strategy for better organizing and unifying the Neck area. The vision hinges on transforming so-called catalyst areas over the next 5, 10 or 20 years. The catalyst areas serve as transportation hubs, offering a higher level of regional and local accessibility through connectivity of a local street grid, introduction of higher performing transit networks and presence of good regional visibility and roadway access. Unlike much of the Neck study area, the catalyst areas offer the geographic location, transportation network and development potential to support substantial mixed use and complementary new development or redevelopment without burdening the existing transportation network or encroaching on established neighborhoods.

Taking the working vision concept to greater detail and ultimate realization of its outcomes requires a foundation of core values to guide future development plans. Those values entail:

Connectedness – The identity of an area or neighborhood as a desirable place, with good transportation access for people of all ages and abilities to reach their destinations, socialize with friends and family, and enjoy a more livable community.

Community Vitality – A strong and resilient community that is welcoming to a diverse and growing population, with the housing, transportation and economic

opportunities to sustain the community long into the future.



Economic Freedom – The ability to make a living through access to education and training, transportation choices and affordable housing options, enabling residents and businesses in the Neck area to pursue their aspirations.

Environmental Health – The reduction of pollutants to air, land and water so that neighborhoods in the Neck area can prosper, while retaining their close-knit character with a renewed sense of civic pride and purpose.

CATALYST AREAS

Development of substantial new mixed use areas, or catalyst areas, represents a major economic opportunity for the Neck area. Simply attracting new construction and investment to the area would create economic benefits, but encouraging economic development and revitalization to take place in a form that connects the local community with an enhanced economy through better accessibility can open up opportunities for creating sustainable long-term prosperity. Both existing residents and new participants alike can benefit from this approach.

Building from the vision organization, the Master Plan identifies eight catalyst areas (see **Figure 1.2**). While some areas may transition to other uses over time, this general layout of districts will help guide catalyst development opportunities as part of an organized system. Each of the catalyst areas is listed and described below:

- **South of Mount Pleasant Street** catalyst area, located just north of downtown Charleston and the established residential neighborhoods and well-connected grid that surround Hampton Park, is a community gateway. The area should take advantage of the established marketing network of the Charleston Digital Corridor to promote and develop catalyst opportunities along both Meeting Street and Morrison Drive.

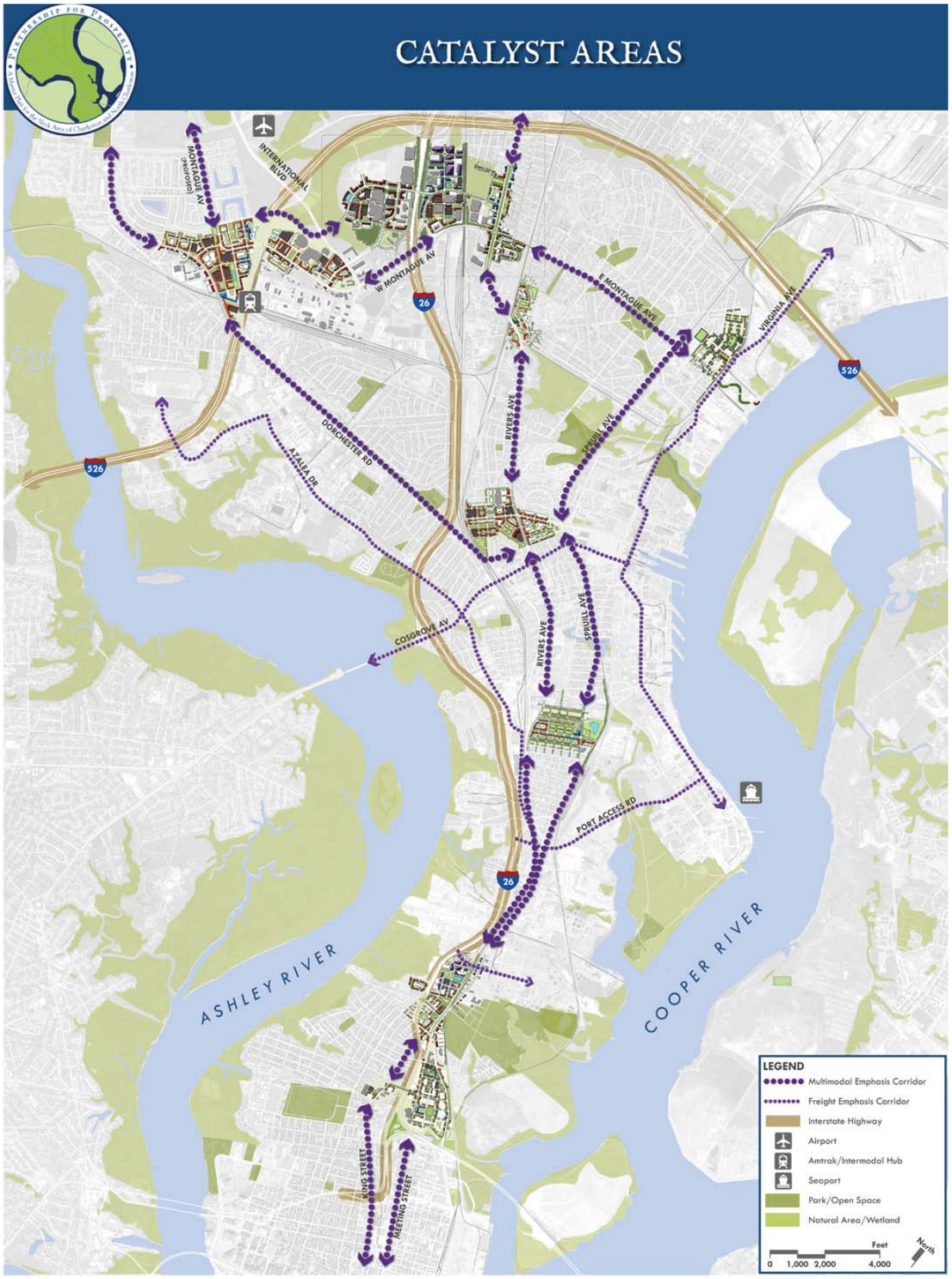


Figure ES.2 Catalyst Areas (See Appendix A pg. 215)

- **North of Mount Pleasant Street** catalyst area is a transitional district. While the southern fringe still contains remnants of the grid street network projecting north from downtown, this residential area soon gives way to commercial and light industrial uses. Catalyst opportunities should be oriented towards both residential and public uses to help promote economic opportunity and provide needed community services for the area residents.
- **Stromboli Corridor** catalyst area is a neighborhood center district. It consists now primarily of large lot industrial uses and container storage areas that separate the Five Mile and Windsor neighborhoods. With this area envisioned as a focal point offering neighborhood services, catalyst opportunities should be oriented towards civic uses such as a community center, open spaces, workforce training facility, or other uses to help promote economic opportunity and provide needed services for the area residents.
- **Shipwatch Square** catalyst area is a community core district. Centered along Rivers Avenue, this area once thrived as a result of growth and military activities at the Charleston Naval Complex and drew people from all parts of the Neck. A mixed use core that includes a grocery store, drug store, and open space can provide much-needed commercial activity and social interaction and help spur other retail and civic uses in the area.
- **Olde North Charleston** catalyst area is a neighborhood center district. This portion of North Charleston was laid out with Park Circle as the center and separate areas designated for residential, commercial and industrial uses. The catalyst area, situated between the residential lots and the growing industrial uses along the Cooper River, developed as the business district. New catalyst development along Montague Avenue can introduce vertical mixed uses to expand housing choices and provide needed goods and services.
- **Amtrak Station** catalyst area is a neighborhood district. Located off Rivers Avenue just north of Durant Avenue, this area is bordered to the north by the Liberty Hill neighborhood; to the east by the Mixson project; and to the west by CSX railroad tracks used by Amtrak's Silver Meteor service. The area also includes light industrial and commercial uses. Catalyst opportunities include preservation of the Amtrak station, creation of office and community incubator space, and mixed neighborhood uses. There may also be potential to locate the Intermodal Center at this location.
- **Mall Drive** catalyst area is a regional district. I-26, a regional roadway that not only serves the Neck peninsula but ties the Charleston area to I-95, bisects the catalyst area and intersects with I-526 directly to the north. Rivers Avenue, Montague Avenue, and International Boulevard, each with exits from either I-26 or I-526, create the framework for this area. With its regional visibility, this area presents an opportunity to become an urban center of the region, with offices, retail, residential and related uses.
- **Convention Center** catalyst area is planned to function as a gateway district. With three exits from I-526 and one exit from I-26, this gateway district is easily accessible from all parts of greater Charleston as well as regional destinations. The Charleston International Airport and Boeing plant are located directly to the north and west and are major economic drivers that influence this catalyst area. The proposed Intermodal Center sets the tone for the entire catalyst area and begins the transformation of this area to a mixed use regional gateway.

Concepts

Building from the core community values, the following principles help form the foundation for the overarching concepts in the Master Plan:

- Provide healthy, safe, lifelong communities and neighborhoods;
- Create community gathering spaces and destinations;
- Provide diverse economic and job opportunities;
- Develop multimodal transportation choices;
- Maintain air quality and environmental sustainability;
- Balance neighborhood needs with business and industry;
- Increase educational opportunities; and
- Provide housing choices and home ownership.

Specific examples of proposed projects include:

- Improving street connectivity to accommodate multiple forms of travel throughout communities. Good transportation access is a fundamental precept for successful industry and commerce. Vibrant business districts are destinations for shopping, dining, and gathering.
- Creating a linear, well-defined and high capacity spine network for safe, convenient and comfortable non-motorized travel that links historic downtown Charleston and surrounding areas with North Charleston's neighborhoods, employment locations and recreational opportunities.
- Constructing a commuter rail line along existing railroad tracks to provide an alternative to an increasingly congested and constrained I-26 while providing an anchor to support higher density mixed use development with a range of housing affordability, services and new employment opportunities.
- Transforming Rivers Avenue/US 52 using Complete Street principles and introducing higher capacity premium transit service (Bus Rapid Transit that can evolve into a light rail transit alignment) with station areas that will reinforce redevelopment of walkable, mixed-use places like Shipwatch Square, Stromboli Avenue and Huger Street.

IMPLEMENTATION

KEEPING THE FOCUS

The most important factor in successful implementation of long range plans is to have a central alliance or entity that is accountable for the ultimate outcome of the plan. Formation of a central will provide the framework for organizing all of the Master Plan implementation activities in the Neck area. For continuity purposes, it is recommended that this entity continue the name of the Partnership for Prosperity (the Partnership for short). Principal members would be expected to bethe cities of Charleston and North Charleston, Charleston County, Chambers of Commerce, the South Carolina Department of Transportation, and the SC Ports Authority. A Memorandum of Understanding or similar document should be signed by all principals to define the mission and goals of the organization and establish commonly agreed-upon commitments, responsibilities, staffing, and funding. Other local and regional stakeholders, service providers, institutions and individuals would be invited as part of a broader stakeholder group to interact regularly with the Partnership with a goal of attracting a broad range of expertise and representation within relevant issue areas.

Critical to success of the implementation effort are several factors in the organization of the long term institutional framework for carrying out the Master Plan. These include:

Regular Communication. To promote the effective work of the Partnership it will be vital to establish protocols and agreements for regular communication and meetings. It is recommended that the current Steering Committee for this project be the basis for the establishment of a long term and standing implementation entity – i.e. to continue the Steering Committee as the long term "Partnership."

Staffing. The Partnership will need dedicated staffing to ensure coordination of meetings, prepare progress reports and to help catalyze individual implementation actions and projects. Possible staffing approaches for the Partnership that share the responsibility among the key partners include using dedicated COG staff or using rotating staff members from each member entity on an annual rotation basis.

Action Plan. A detailed Action Plan should become the blueprint for implementation of short, mid and long term priorities and actions. An Action Plan is included in the report that cites specific projects identified in the planning process and sets forth specific objectives, tasks, priorities and timeframes for getting the plan done. The Action Plan is intended to be a living document and it will be critical at all times to keep the momentum on the Action Plan and to capitalize on unforeseen opportunities that may arise if they are consistent with the overall vision and Master Plan.

GUIDING THE PRIVATE SECTOR AND PUBLIC SECTOR

Besides establishing a guide for land use, transportation and environmental sustainability, the Master Plan also presents a compelling vision for the Neck area's future that will drive both public and private investment. The developers, investors, companies, institutions, and other stakeholders that will be participating in the area's redevelopment will be looking for guidance and inspiration in conceiving and executing projects that will advance the vision. The plan components described in the report provide a framework of catalyst area developments, transportation system improvements, land use and urban design principles, and details related to community structure, environmental issues and goods movement that establishes the "road map" for long-term redevelopment and revitalization of the Neck area. The approach is organized into three elements: development product, programs and organizing to implement revitalization over time.

Development Product. In order to capture new investment and attract new residents and businesses, the Neck area must be able to offer a supply of development "product" that is competitive in multiple market sectors at the regional, state, and even national levels. This product comes in many forms, such as mixed use development around transit, more and diverse housing, new employment catalysts and retail and local services.

Programs. Achieving and sustaining local prosperity in the Neck area will call for long term efforts to connect existing residents and businesses with the benefits and opportunities generated by the development that is taking place around them. New development product will create economic activity, but many residents will need tools, training and assistance to take advantage of the opportunities that emerge. Programs that address long-standing needs in the Neck area such as education, jobs and skills training and housing can equip residents to compete effectively in a revitalized local economy and succeed in one of the key economic centers of the region.

Implementing Revitalization over Time. Effective organization will be important to keeping the redevelopment of the Neck area on track over the long term. As discussed above, a standing partnership of the cities, port and other stakeholders should be established as the Partnership for Prosperity that has overall accountability for implementing the vision and master plan for the Neck. Under this umbrella entity, a number of new implementing agencies may need to be established. The exact structure, mission and composition of these agencies will need to be carefully developed and agreed to by all in the partnership. LAMC occupies an important place in the core of the Neck area and LAMC is already implementing some of its recommended capacity-building actions including the creation of two new entities focused on revitalization and housing development - the Community Development Corporation (CDC) - and the Community Land Trust (CLT). There is a potential opportunity for the CLT to expand its area of activity to encompass the entire Neck area. Alternatively, it may be desirable

to establish another CLT to address affordable housing needs in the non-LAMC portions of the Neck area.

There will be a wide range of issues on the Partnership for Prosperity's agenda, but one of the most important means of helping Neck area residents share in the benefits of redevelopment will be an emphasis on improving education and access to job training. To demonstrate the importance of this subject, an Education and Job Training Committee should be established that could would work with key stakeholder organizations, service providers, and institutions such as LAMC, Trident Technical College, Charleston County Schools, Apprenticeship Carolina, and CURI. It would also perform an important liaison function with area employers, identifying the sorts of skills and employees they need and communicating those needs to the education and training providers.

Moving Forward

The Partnership for Prosperity process has been an important catalyst in nurturing a multi-faceted coalition for the long term implementation of the vision. A key first step in implementing the vision will be to develop a coalition of partners that signs on to a Memorandum of Understanding. This agreement should form the framework for a consistent approach and plan of action for the gradual implementation of the Master Plan over time. The establishment of an ongoing and permanent Partnership for Prosperity that is staffed, funded and with an agreed upon action plan and communication strategy will be the ultimate platform for the realization of a new vision for prosperity in the Neck in the decades to come.

Messages

Despite the challenges and complexity that revitalization will entail, the economic position of the Neck area within the Charleston region is very strong, and supports major redevelopment opportunities because of the value the market places on its excellent location, access, and assets. Equally important, this strong position means that the Neck area is relevant and important to the region's future.

The key elements that contribute to the Neck area's economic position are:

- Central location and regional accessibility
- Adjacent to a national/global logistics hub
- Heart of the region's employment corridor
- Adjacent to a major tourism and entertainment destinations
- Location of major employers and development projects
- Location in a business-friendly state and region

Taken together, these advantages mean that the Neck area should continue to be one of the economic engines for the Charleston region, if not South Carolina as a whole. As the U.S. economy recovers from the Great Recession, national and global commerce expands, and local growth continues, the Neck area will be at the center of it all.

But residents of the Neck area historically have not shared in the economic growth that is taking place around them. As this growth benefits the entire region, but the business activities impose costs on local neighborhoods, there is a question of economic equity that should be addressed when planning for the Neck area's future:

- The median income in the Neck area compared to the region is 43 percent lower.
- In recent years only 11 percent on average of the 42,000 jobs in the Neck area have been filled by Neck area residents.
- Only 22 percent of employed workers in the Neck area live there, and the average employed Neck resident earns only 57 percent of the average wage of a Neck area job.
- 40 percent of the Charleston region's adult population (excluding the Neck area) holds at least an associate's degree. In the Neck area the share is only 20 percent.

Shrinking these gaps will require a process of helping Neck area residents access training, resources, and opportunities that allow them to share more in the region's economic development – growth that is anchored by employment and investment occurring near their neighborhoods.

The Partnership for Prosperity process has been an important catalyst in nurturing a multifaceted coalition for the long term implementation of the vision. The establishment of an ongoing and permanent Partnership that is staffed, funded and with an agreed upon action plan and communication strategy will be the ultimate platform for the realization of a new vision for prosperity in the Neck area in the decades to come.

Important messages and concepts relating to the foundation of the vision include:

Connectedness - Much of the development activity in the Neck area has been haphazard, piecemeal or a legacy of decision made long ago. Industrial uses and transportation activities have encroached on residential areas; roadways lack consistent accommodation for non-motorized users; and the historic gridded street pattern has been continuously interrupted by large-scale develop activities. This Master Plan presents an opportunity to help define a more organized,

integrated and complementary land use and transportation pattern that clarifies expectations and desired outcomes among many different partners in the process.

Environmental Health - The neighborhoods in the study area care about air quality, noise and visual blight, especially issues that arise with industrial development. These neighborhoods have mobilized successfully in the past to challenge development that they felt would negatively affect the quality of life and hinder opportunities for reinvestment. Other issues related to environmental health involve keeping communities intact and not allowing them to be divided by transportation facilities, commercial vehicle routing and noise; environmental cleanup of contaminated sites, and buffering residential areas from objectionable activities.

Community Vitality - The neighborhood councils in Charleston and North Charleston are strong and active, taking pride in their communities and being involved in the decision-making processes that affect them. Several of the neighborhoods have undertaken a great deal of planning already for their future and are working to implement those plans. The neighborhoods in the study area generally want to be involved and are interested in the master planning process. Context-appropriate infill development can provide needed services and employment opportunities for existing neighborhoods, and create a new district with housing options and services.

Economic Freedom - Despite close proximity to the region's economic heart, people in the Neck area have found it difficult to improve their situations and tap into the economic strength of the place that they live in. The Neck area possesses demonstrated competitive advantages that can be promoted, expanded, and capitalized upon to create both neighborhood-level and individual prosperity. Therefore, the goal of economic freedom is to use these advantages to foster economic opportunities that permeate the Neck area and are attainable by its residents and local businesses.

While living in the Neck area gives residents proximity to the potential ingredients for prosperity, people must also have the tools needed to participate in the future growth. Achieving economic freedom in the Neck area means connecting people with the benefits and opportunities generated by the development that is taking place around them. New development and redevelopment will create economic activity, but many people will need tools, training, and assistance to take advantage of the opportunities that emerge. Programs that address long-standing needs in the Neck area such as education, job training, and housing can equip residents to compete effectively in a revitalized neighborhood economy and succeed in one of the key economic centers of the region.

The story of successful redevelopment and revitalization in the Neck area will be an evolving, iterative process involving many players acting in a coordinated and unified fashion. The key to success will rest in a diverse network of people working together toward the shared goals expressed in the Partnership for Prosperity vision and Master Plan. Long term realization of the vision for the Neck area will not be based on investments from only one major source, be it local, federal, or state government or a large private entity. A network of partners focused on a clear mission can effectively leverage resources and coordinate investments.

Chapter 1
Project Context & Economic Position

Draft Project Context & Economic Position

This chapter describes the project vision, defines the general limits of the study area, and introduces the community and economic settings of the Neck area.

Introduction

General

Sponsored by the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG), the Charleston Neck Area Partnership for Prosperity Master Plan is a cooperative effort to shape the future of the Tri-County core. The Master Plan provides a community-based vision for quality growth and economic opportunity throughout the Neck area, promotes environmental stewardship and health, and enhances the quality of life for people and businesses within the historic neighborhoods, new communities, and emerging job centers.

Study Area Boundary

The study area for this project is generally the area between the Ashley and Cooper Rivers, with the Arthur Ravenel, Jr. Bridge (US Highway 17 over the Cooper River) being the southern boundary of the project and the Mark Clark Expressway (Interstate 526) being the northern boundary of the project. Some industrial areas north of Interstate 526 near the Charleston International Airport are also included in the study area. **Figure 1.1** illustrates the general boundaries of the study area.

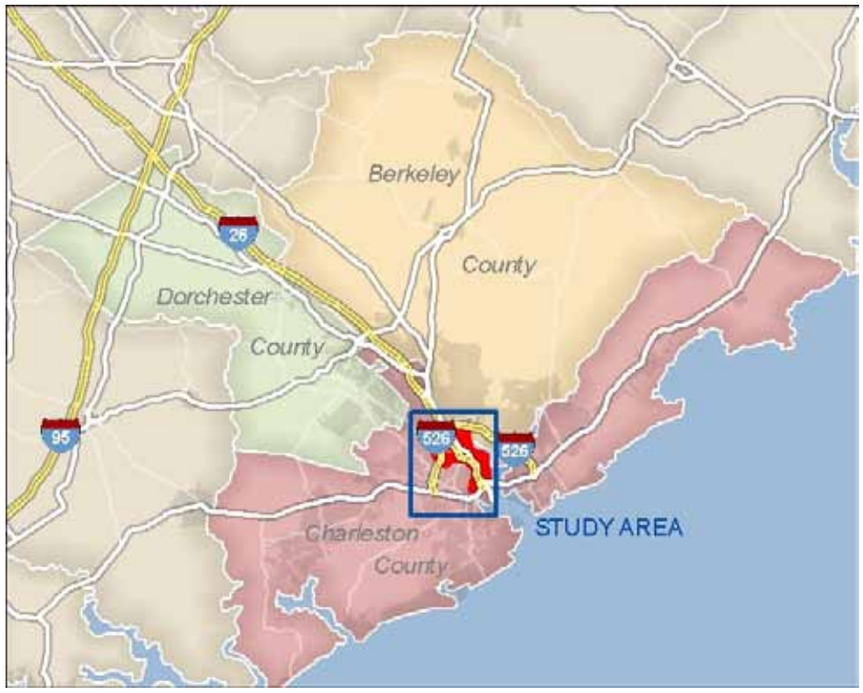


Figure 1.1 Study Area

Geographic Setting

The Neck area is centrally located within the Tri-County region, consisting of portions of unincorporated Charleston County and the Cities of Charleston and North Charleston. It is adjacent to the Charleston historic downtown to the south and the Charleston International Airport and Boeing Dreamliner plant to the north. It is bisected by Interstate 26, the principal route to both downtown Charleston and area beach resorts. Interstate 26 provides a direct link from Charleston to Columbia, the state capitol, as well as a connection to Interstate 95, the primary north/south transportation corridor along the eastern seaboard of the United States. Interstate 526, which generally forms the northern boundary of the Neck area, provides access to Daniel Island and Mount Pleasant to the east and West Ashley and James Island to the west.

The Neck area has access to both the Ashley and Cooper Rivers, major waterways that provide direct access to the Intracoastal Waterway and Atlantic Ocean for recreational boaters, cruise liners, and freight traffic. CSX and Norfolk Southern railways both have multiple tracks through the Neck area. The North Charleston Amtrak train station and Greyhound bus station are also located within the Neck area.

Heritage

The Neck area has a rich heritage. From the 17th century until the Civil War, it was occupied primarily by plantations. The large plantations were continually subdivided into smaller farms as the population began moving northward out of Charleston. After the Civil War, phosphate fertilizer plants began to spring up, with extensive strip mining occurring between the Ashley River and present day Meeting Street Road. From the late 1800s to the early 1900s, several residential communities began developing in the northern area of Charleston, including the LAMC neighborhoods. One of the earliest and historically significant neighborhoods is Liberty Hill, which is considered the oldest residential subdivision in the City of North Charleston, settled by freed slaves in 1871.

In the early 1900s, the area that later became the City of North Charleston had been designated by Charleston business and community leaders as a place for development of industry, military and other business sites. The first industry started in this area was the E.P. Burton Lumber Company. In 1901, the Charleston Naval Shipyard was established along the Cooper River. Shortly thereafter, the General Asbestos and Rubber Company built the world's largest asbestos mill under one roof.

In 1912, a group of businessmen from Charleston formed a development company that bought the Burton Lumber Company tract and began to lay out an area for further development. The Park Circle area was one of the first to be designed and developed, allocating sections for industrial, commercial and

Oak Terrace is one of the many planned developments in the Neck Area.

residential usage. Park Circle was planned as one of only two English Garden Style communities in the United States and most of the original planning concept remains today.

Many neighborhoods grew up around the commercial and industrial sites, taking advantage of the nearby job opportunities and thus providing economic vitality for the area. In the 1940s and 1950s, substantial development occurred as neighborhoods sprang up to house workers employed at the Naval Complex and other associated industries.

Community Setting

The Neck area today contains a diverse mix of vibrant communities and historic neighborhoods, government and civic uses, churches and community centers, recreation fields and parks, warehousing and industry, shopping and commercial uses, and entertainment venues, as well as a variety of upland open spaces, wetland and marsh areas, and access to waterways along both the Ashley and Cooper Rivers, including the Riverfront Park.

The Charleston Naval Complex, associated military and commercial activities, and heavy industry operations once dominated the landscape of the Neck area as both economic drivers and focal points. But the Naval base has now been decommissioned, taking with it much of the associated commercial activity, and some of the heavy industry has moved or been abandoned. Although remnants of both the base and industrial activities are still highly visible, different economic drivers have begun to surface that inject new life into the Neck area. At the old Naval base, planned and/or built facilities include a Port Authority shipping terminal (on the southern portion), a Clemson University wind turbine testing facility (on the central portion), and the Noisette mixed use development (on the northern portion). Other new activity in the Neck area includes development of sites associated with the Charleston Digital Corridor, the Boeing Assembly Plant, and the Charleston Life Sciences facility.

While there are vibrant communities and historic neighborhoods, there are also planned developments that have never been completed. Due to the base closing and economic downturn, there are many vacant lots scattered throughout the Neck area, as well as empty or underutilized commercial centers. Additionally, past industrial activities have left the area with environmental concerns, such as reduced air, water, and noise quality, and sites with soil contamination. Uncertainty about the levels and extent of contamination or extensive remediation costs have hindered some development efforts from going forward.

Major north/south transportation spines, such as Interstate 26, King and Meeting Streets and multiple rail lines have cut off connectivity between many areas of the Neck. Additionally, the close proximity of residential uses with industrial operations and their associated freight movement by both roadway and rail has created safety concerns and a reduced quality of life for Neck residents due to sound, odor and vibration.

Project Description

The objective for the Partnership for Prosperity project is to produce an integrated strategic Master Plan that respects and knits together the various planning and engineering components of transportation, urban design, land use and economic development into a unified whole. This unified planning and design framework provides clear guidance to state and local agencies, community stakeholders, the general public and the private sector about the vision for the Neck area, and the strategies and priorities necessary to achieve desired outcomes that can transform the community toward a more sustainable, livable and economically vital part of the region.

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Economic Context

Regional Economic Context

The Neck area's central location in the region close to major highways, rail lines, Charleston International Airport, the Port of Charleston, and the downtown Charleston Historic District means that its economic activity and development potential will be greatly influenced by trends and conditions at the regional level. The Charleston metropolitan area is made up of three counties: Berkeley, Charleston, and Dorchester. A look at historical statistics, current conditions, and forecasts of the future for several key demographic variables frames the changes that have recently occurred and are projected to take place. This is a broader economic context for redevelopment of the Neck area.

Long Term Trends

Woods & Poole Economics is a national provider of demographic data and long-term projections. By charting key variables for the Charleston region from 2000 to 2030 one can see how regional demographics have changed recently and how they are forecast to change according to a detailed statistical model. The discussion and charts below thus cover roughly the decade prior to 2012 and two decades into the future.

Total population in the region since 2000 has been increasing at a compound annual rate of 1.9 percent per year. This growth rate is projected to slow only slightly in future years, decreasing to 1.6 percent per year from 2012 to 2030. While the overall growth rate remains healthy, demographic changes within the regional population will have implications for economic activity and development.

The age profile of the population has a significant impact on the regional economy, because age influences household income, consumption habits, housing preferences, and other factors. The household is the typical consumer unit tracked by businesses, making it useful to look at the population statistics translated into household counts by relevant age groups, as shown in **Figure 1.2**.

The household counts are sorted into four broad age groups with typical profiles: single persons and young families (under 35), middle-aged persons and families (35-54), empty-nesters and younger retirees (55-74), and elderly households (75 and older). The data shows that the Charleston region is in the early stages of a significant shift in its household age profile. The 55-74 age group will increase sharply over the next decade as the baby boom generation enters its retirement years, to the extent that it almost manages to surpass the 35-54 age group as the largest. This growth levels off after 2020 when the baby boomers start entering the 75-plus age group in large numbers and thus sharply increase its size. Meanwhile, the 35-54 age group begins to grow larger as the baby boomers' children (known as Generation Y or Millennials) enter middle age. After growing

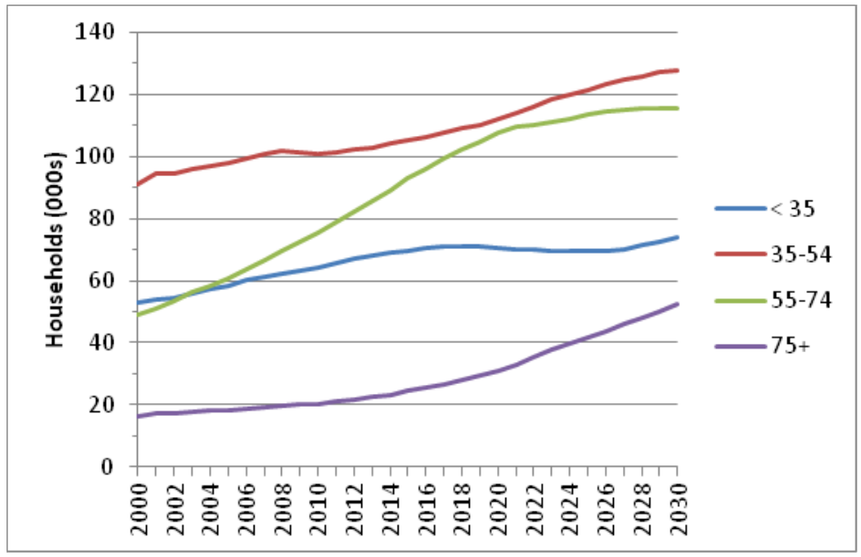


Figure 1.2 Regional Household Estimates and Projections by Age Group

moderately during the 2000s, the under-35 age group is not projected to grow until late in the 2020s.

Figure 1.3 shows the effects of these projected changes in terms of the share of total households claimed by each age group. Over the 30 years from 2000 to 2030 the share of all households under age 55 will go from almost 70 percent to around 55 percent. While the 35-54 age group will remain the largest group, the margin between it and the 55-74 age group will shrink significantly. Even though the size of the 75-plus age group will more than double from 2012 to 2030, its share of total households will increase only moderately, and it will remain the smallest group. The share of households under 35 will decrease, as this age group's minimal growth in most years after 2012 causes it to fall behind the older age groups.

As the population of the Charleston region ages, it is also forecast to become wealthier. Woods & Poole provides estimates and projections of households by income, with the dollar value of the income brackets held constant at year 2000 levels so that the real purchasing power is equal over the 30-year period. This means that for the purposes of this comparison, a $50,000 income is worth the same to a household in 2000 as it is in 2030. Because of this adjustment for inflation, tracking the number of households in each income category over a long-term timeframe reflects real changes in the financial resources of households in the region. **Figure 1.4** shows the projected changes.

The most notable trend is the dramatic increase in households making $60,000-$99,999 per year, which is a solid upper-middle class income level. The overall

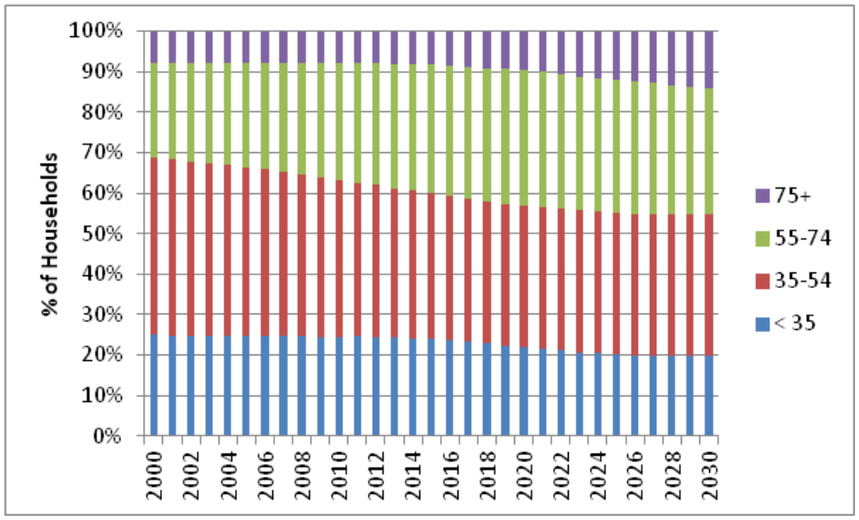


Figure 1.3 Share of Total Households by Age Group

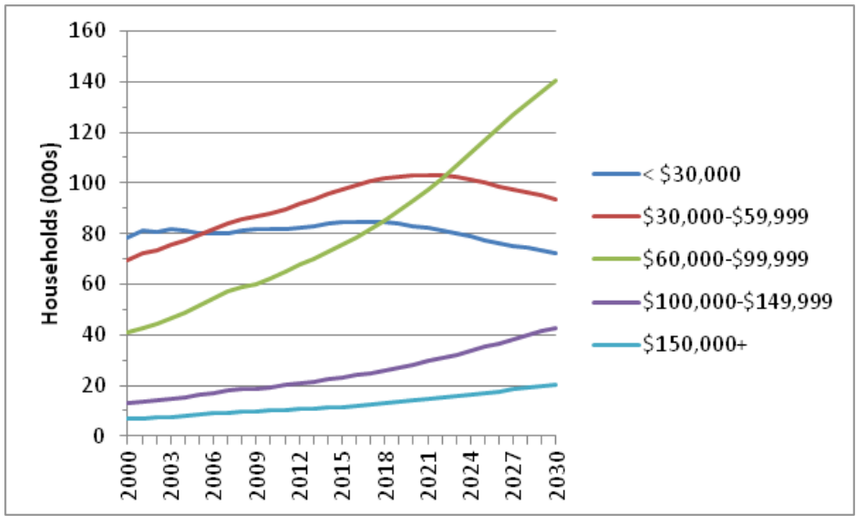


Figure 1.4 Regional Household Estimates and Projections by Inflation-Adjusted Income Category

trend indicates rising affluence in the region. While there is a persistent base of the lowest income households, this income category is mostly flat through 2020 and then begins decreasing. Households making $30,000-$59,999 per year are increasing during that time period, but also begin to decrease around 2020. The two highest income categories were increasing gradually before 2012, and that growth is projected to accelerate in the future.

Even as affluence increases, the presence and needs of low income households will still be significant. By 2030 the number of households making more than $100,000 per year will still be lower than the number making less than $30,000 per year. **Figure 1.5** presents the household income estimates and projections as the share of total households claimed by each income category. Even after 30 years of increasing growth in higher income households, one in five households in the region will still be earning an income that is often difficult to support a family on. But the overall increase in household incomes is a positive trend for the regional economy and market-driven prospects for redevelopment of the Neck area.

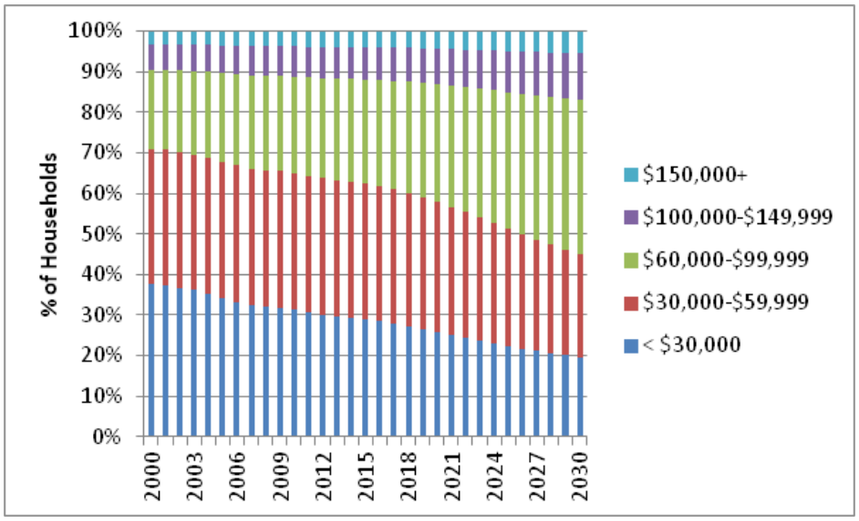


Figure 1.5 Share of Total Households by Income-Adjusted Income Category

Employment in the Charleston region grew steadily from 2000-2012, increasing at a 1.8 percent compound annual rate, and that pace of growth is projected to continue through 2030. This steady rate of growth, however, masks a significant difference between industry sectors that reflects the long-term shift toward service-based jobs in the American economy. Looking at broadly defined sectors, growth in the region during the 2000s was essentially flat in goods producing sectors (primarily construction and manufacturing), and transportation and trade sectors (including retail, wholesale, and warehousing). Meanwhile, service and knowledge-based sectors such as finance, professional/technical services, education, health care, and leisure services all grew at annual rates between three and four percent per year. **Figure 1.6** illustrates the recent and projected growth.

The recession of 2007-2009 and its aftermath are clearly visible in most of the trend lines in **Figure 1.6**. Over the past decade the Finance, Management & Professional Services sector has become the primary driver of the regional economy by virtue of both its size and its rate of growth. That leadership position is projected to continue. Leisure & Other Services emerged as the second-largest

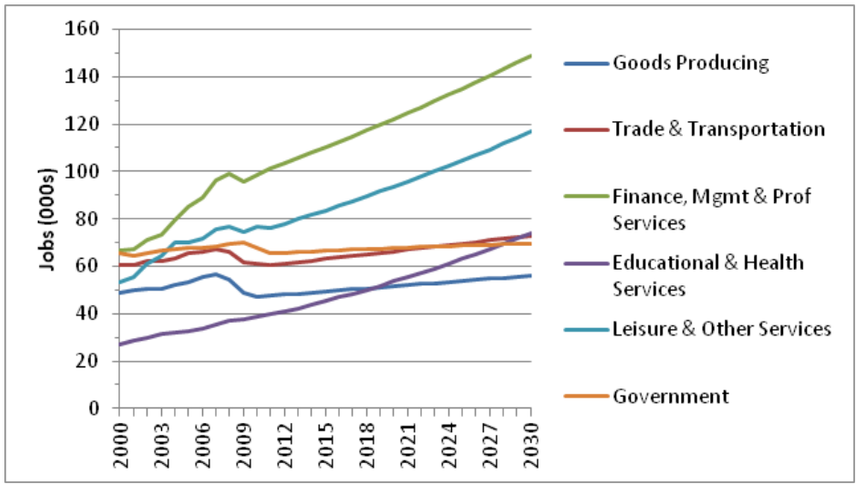


Figure 1.6 Regional Employment Estimates and Projections by Broad Industry Sector

sector in the region during the mid-2000s, and its future growth is projected to largely parallel that of finance and professional services. The primary components of this sector are lodging and food service, traditional Charleston strengths due to the tourist trade, and a variety of personal and household services whose demand increases with a growing population. Educational & Health Services is the only industry that did not experience a noticeable decrease in employment during the recent recession, and its historic growth rate rivals that of finance and professional services.

From 2012-2030 employment in all industry sectors is projected to grow, but the rate of increase will continue to vary by sector. The Goods Producing and Trade & Transportation sectors will return to modest growth of around one percent per year, which is a positive trend for the regional economy. The growth in Finance, Management & Professional Services will moderate a bit as it becomes larger, declining to an annual rate of two percent per year. Growth in Leisure & Other Services, the other large sector, also will slow somewhat, though not quite to the same extent. Notably, the growth rate in Educational & Health Services is projected to continue at a nearly identical rate, meaning that it will easily be the fastest growing sector from 2012-2030. By 2030 it will have become the third-largest industry sector in the region, but its employment level will still be well below that of the top two sectors. In summary, long term trends in the Charleston region through 2030 suggest:

- Steady population growth
- A sharply increasing number of empty-nester and retiree households while the number of younger households remains flat
- Increasing affluence overall, with the number of households making $60,000-$99,999 per year growing sharply and the number of lower income households decreasing over time
- Steady employment growth driven primarily by increases in finance and professional service jobs, along with continued strength in the tourist trade and increasing prominence of education and health care

Employment Context

The Charleston region has a diverse economy with economic activity and employment spread across a range of industry sectors. As noted in the long term projections above, broad sectors of the economy are expected to grow at differing rates in the future and some are more prominent than others due to their size. An examination of trends and projections for the 15 major private industry sectors in the region plus federal government employment (including military personnel) highlights specific sectors that are central to the region's economic growth. Woods & Poole data on the number of jobs and inflation-adjusted total earnings in each sector from 2000-2030 were the foundation of the analysis. Each sector was evaluated for its current size, current average earnings per worker, past and projected employment growth, and past and projected growth in average inflation-adjusted earnings per worker.

Key industry sectors are those that have a substantial presence in the regional economy already and offer good-paying jobs with strong future earnings potential:

- **Professional, Scientific & Technical Services:** This sector encompasses many knowledge-based jobs focused on design, consulting, research, and analysis. Regional economic development strategies should focus on facilitating the strong growth that is projected.
- **Health Care & Social Assistance:** With several major regional institutions and a growing population, the core economic development strategy will be expanding upon an already strong presence in this sector.
- **Manufacturing:** Although employment growth in this sector is projected to be minimal, it still has a significant presence and offers good-paying jobs. Its current average earnings per worker are well above every other private sector industry and second only to federal government workers. Economic development strategies should focus on maintaining the base of quality jobs and finding opportunities to increase employment in this sector.
- **Federal Government:** Like manufacturing, federal government employment is not projected to grow much, but the high pay level and earnings growth of jobs in this sector mean that it is important to maintain the job base and seek opportunities to expand it.

These key industry sectors describe in general terms the most important sources of economic growth and quality jobs in the Charleston region, and they align

very well with the detailed economic development strategy being pursued by the Charleston Regional Development Authority (CRDA) and its partners. Opportunity Next focuses on four target industry clusters for employment growth and five core competencies for workforce and community development. The four industry clusters are Advanced Security & IT, Aerospace, Biomedical, and Wind Energy. The five core competencies are Advanced Materials, Creative Design, Drivetrain & Power Systems, Logistics, and Software. Additional detail is provided in **Figure 1.7.**

Advanced Security & IT	Aerospace	Biomedical	Wind Energy
• Defense Electronics • Network Communications • Cybersecurity • Military Command Posts • Data Centers & Cloud Computing • Web Applications	• Boeing Suppliers • Subassembly Operations • Advanced Materials Manufacturers & Fabricators	• Medical Equipment • Devices & Diagnostics • Health IT & Telemedicine • Bioengineering • Clinical Trials & Drug/Vaccine Research	• Component Manufacturers • Metalworking & Machining • Advanced Materials Manufacturers & Fabricators

Figure 1.7 Regional Economic Development Strategy – Target Industries

Housing Context

Like many areas across the country, the Charleston region experienced a major housing boom during the mid-2000s, with both development and sales activity reaching all-time peaks. The onset of the global financial crisis in 2008 and accompanying recession put an end to the boom, and the housing market is still in the process of recovering. As illustrated in **Figure 1.8**, data compiled by the U.S. Department of Housing and Urban Development show residential building permit issuance in the region has decreased to levels last seen in the early 1990s.

Overall home sales (not just new development) are also back to 1990s levels according to data obtained from the Zillow real estate web site. The Charleston regional market peaked in 2005 with just over 20,000 homes sold, but most recently recorded around 8,400 sales in 2011. This sharp decline in housing demand combined with the elevated prices paid during the boom years and challenging economic conditions for many households means that a number of homeowners are facing (or have already faced) foreclosure by their lenders and many other homeowners now owe more on their mortgages than what their properties are worth.

According to the RealtyTrac information service, in the 12 months ending in May

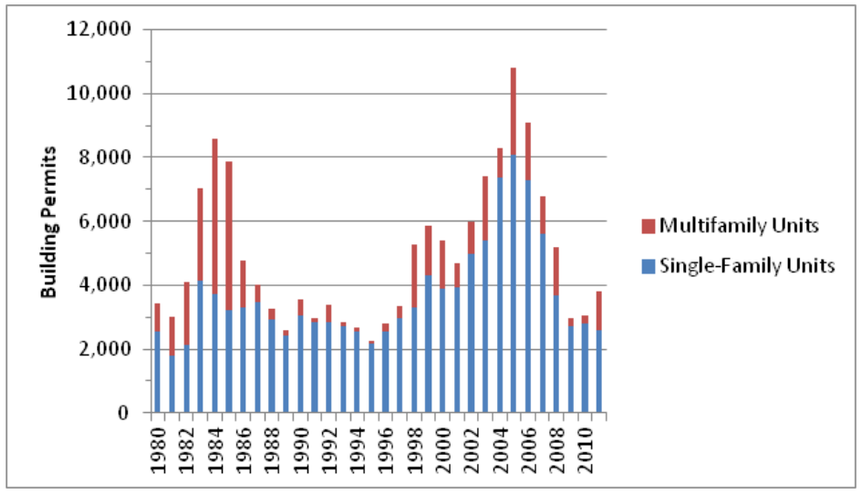


Figure 1.8 Residential Building Permit Issuance in the Charleston Region

2012, the Charleston region averaged 646 new foreclosures per month for a total of 7,753 homes newly foreclosed. Zillow also reports that in the first quarter of 2012 the percentage of homeowners who were "underwater" on their mortgages (owing more than the house is worth) was 32 percent in Charleston County, 39 percent in Berkeley County, and 44 percent in Dorchester County. (The Berkeley and Dorchester figures put them in the top 20 percent and top 10 percent, respectively, of all counties nationwide.) While various indicators and market observers have pointed to a slowly emerging recovery in the housing market, the extent of its challenges suggests that residential growth will be modest at best in the near term and activity is unlikely to return to the levels seen during the boom for some time, if ever.

A notable outcome of the housing boom in the Charleston region was the emergence of a significant market for condominiums. Starting from fewer than 500 units sold per year in the mid-1990s, condominium sales reached a peak of just over 5,000 in 2005 – which represented 25 percent of all home sales in that year according to Zillow. While sales have since decreased in parallel with the broader market downturn, they still numbered almost 1,400 in 2011 or 17 percent of all home sales. Since 2008, the condominium segment's share of total home sales has been roughly twice as large as it was in the late 1990s. The increasing market acceptance of higher density, multifamily housing product, even if it initially is primarily in beachfront locations, is a positive trend for redevelopment of the Neck area because such housing is very appropriate for select locations given the Neck's urban character, water views and development opportunities.

Regional housing prices rose and fell as the market went from boom to bust, but Charleston homes were notably higher-priced than those in other comparable regions throughout the previous decade. The CRDA tracks demographic and economic indicators in eight other regions to measure Charleston's performance

(see the Competitiveness section below for further details). The Federal Housing Finance Agency (FHFA) uses data from federal mortgage guarantees to create regional home price indexes for metropolitan areas across the country, similar to the widely followed Case-Shiller home price index that tracks only the 20 largest regions. Charting the FHFA index for Charleston and its eight comparable regions since 2000 in **Figure 1.9** shows how Charleston's prices have consistently exceeded its peers, most by a substantial margin.

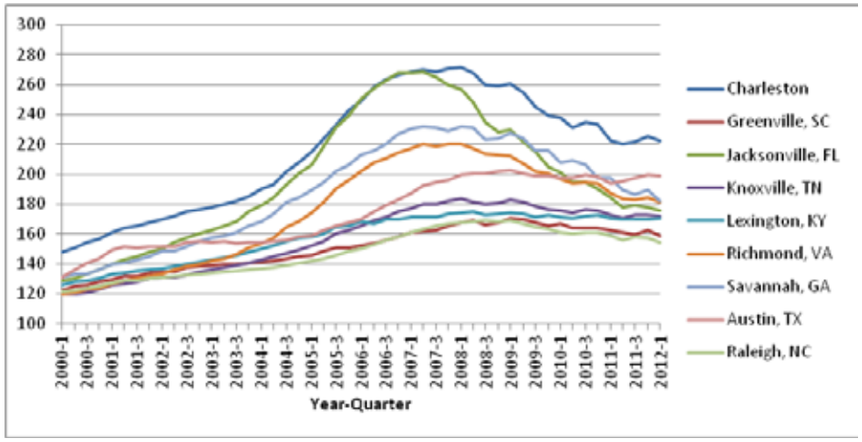


Figure 1.9 Home Price Indexes – Charleston and its Peer Regions

In the first quarter of 2012 Charleston's price index exceeded its peers' by an average of 28 percent, even after a decline in the index of 18 percent from its peak. While a few of the peer regions experienced greater declines, most saw only modest declines that were less than half that experienced in Charleston. The source of the region's price premium is probably a combination of its coastal location, desirable historical neighborhoods, and recreational and other amenities. But the size of the difference suggests that the availability of affordable housing could be a weakness in Charleston's competitive position relative to its peers in attracting talented workers and business investment. Redevelopment of the Neck area may provide an opportunity to provide more housing options at a range of price points to meet future market demand.

The current housing situation in the Charleston region can be summarized as follows:

- Building permit and sales activity are around 20-year lows in the aftermath of the mid-2000s housing boom and bust
- The inventory of foreclosed homes and proportion of underwater homeowners suggest that near-term residential growth will be modest at best
- A significant market for condominiums emerged in the regional market during the recent boom, and seems to be persisting
- Home prices in Charleston have been, and continue to be, significantly higher than prices in its peer regions

Comparison and Competitiveness

The CRDA publishes an annual Regional Scorecard that measures the Charleston region's progress in delivering economic prosperity compared to six similar and two leading regions. The comparative regions are Greenville, SC; Jacksonville, FL; Knoxville, TN; Lexington, KY; Richmond, VA; and Savannah, GA. The two leading regions, which provide examples of superior outcomes, are Austin, TX and Raleigh, NC. The 2011 scorecard tracks four indicators of economic performance:

- **Gross Regional Product:** The total economic output of the Charleston region grew significantly faster from 2005-2009 than all of the comparative regions (which mostly declined) but the rate was well below the growth in the leading regions.
- **Regional Employment:** Employment in Charleston grew rapidly (13.2 percent) during the 2003-2008 economic expansion, exceeding the nationwide average and five of the comparative regions. But during the subsequent recession employment in the region declined by 4.6 percent.
- **Earnings per Worker:** From 2005-2009 Charleston regional earnings per worker grew at a faster rate than the U.S. but the final amount was still below the U.S. average and fifth among the comparative regions.
- **Per Capita Income:** The overall wealth of the Charleston region is growing rapidly, but it is still below the national average, four of the six comparative regions, and both leading regions.

The performance indicators suggest that the Charleston regional economy was growing at a healthy rate prior to the Great Recession and like most regions is now in recovery mode. But that growth has not yet translated to wages and per capita income on par with the U.S. and most of Charleston's peers. The goal of the regional economic development strategy is to promote job growth, improve wages and incomes, and create an overall increase in the region's economic output. The ability to accomplish all of these interrelated objectives is dependent on the region's competitiveness, which is measured through four key inputs.

The Regional Scorecard tracks four separate indexes that measure various aspects of the Charleston region's competitiveness for attracting economic development versus the comparative and leading regions. The indexes measure human capital, innovative activity, entrepreneurial environment, and quality of place through a variety of elements that compare each region's performance against the U.S. average. The regions are ranked for each element and the rankings are blended within their relevant index subject areas to create four overall index rankings for each region. **Figure 1.10** summarizes how Charleston scored in the most recent scorecard.

Human Capital Index: 6th	Innovative Activity Index: 7th	Entrepreneurial Environment Index: 3rd (tie)	Quality of Place Index: 5th
• Knowledge workers: 9th • H.S. graduates: 5th • College graduates: 5th • Employment rate: 7th	• Patents: 8th • Employment in technical positions: 6th • Science related grad students: 7th	• Concentration of small to mid-sized businesses: 1st • Business churning: 5th • Proprietor's income share: 4th • Business services: 5th	• Climate: 1st • Air quality: 1st (tie) • Crime rate: 7th • Travel congestion: 6th • Health care access: 3rd (tie) • Culture and recreation: 2nd

Figure 1.10 Charleston's Competitiveness Ranking from the 2011 Regional Scorecard

Stakeholders across the region are working to improve Charleston's competitiveness at the national and global levels, in conjunction with the CRDA's ongoing efforts to attract new jobs and investment to the region. The recent results of those efforts show that the region already is an attractive location for economic development with a very capable recruitment operation. Even in the face of a financial crisis and severe recession, Charleston has continued to attract significant business investment. Since 2008, there have been 35 announcements of CRDA-facilitated transactions that have brought 7,300 new jobs and over $1.6 billion in new capital investment to the region.

Economic Position

The economic position of the Neck area within the Charleston region is very strong, and supports major redevelopment and revitalization opportunities because of the value the market places on its excellent location, access, and assets. Equally important, this strong position means that the Neck area is relevant and important to the region's future.

The key elements that contribute to the Neck area's economic position are:

- **Central location and regional accessibility.** The presence of the I-26 and I-526 interchange at the northern end of the Neck area, along with several other major arterial roadways, provide a level of access to points across the region that is difficult to match at other locations. This access, combined with a central location and proximity to downtown Charleston and other existing and emerging activity centers, makes the Neck area an attractive location for businesses and organizations that serve the entire region. Building height limits and other constraints on development mean that downtown Charleston has limited capacity to accommodate future growth. The Neck area is well positioned to compete with suburban fringe areas in attracting development that might otherwise have occurred in the downtown area.
- **Adjacent to a national/global logistics hub.** The multiple terminal facilities that make up the Port of Charleston are located within or adjacent to the Neck area. The port is one of the busiest on the east coast, handling almost $60 billion worth of goods in 2011, which ranked it eighth among all U.S. ports. Charleston International Airport sits at the northern edge of the Neck area, and offers more than 100 daily flights, with non-stop service to/from nearly 20 major airports. I-26 links the Neck area directly to other major interstate highways serving the southeastern U.S. and the east coast, including I-95, I-77, I-20, I-85, and I-40. More than 150 trucking firms serve the Charleston market. The port and other Neck area businesses are served by two Class 1 railroads.
- **Heart of the region's employment corridor.** Thanks to its central location and excellent transportation access, the area running from downtown Charleston north up the peninsula through the airport is the region's primary employment center. The four zip codes that make up this area contained 42 percent of the jobs in the region in 2010. The bulk of the Neck area (zip code 29405) has a fairly diversified employment base that is distinctive for its significant share (30 percent) of jobs in Goods Producing industry sectors. The north airport corridor along Rivers Avenue (29406) and downtown Charleston (29401) are also fairly diversified, but have job bases primarily oriented toward service industries. The mid-peninsula area (29403), which includes the far southern end of the Neck area, is heavily weighted toward educational and health services, which make up 72 percent of its employment base.
- **Adjacent to a major tourism and entertainment destination.** Historic downtown Charleston is a major tourist destination and a center of entertainment and cultural activities for the region. Numerous restaurants, hotels, and retail shops serve both local and out-of-town patrons. The Neck area is located directly between the airport and downtown Charleston, and the region's only Amtrak train station is located in the heart of the Neck area. Tourism is a major economic driver for the Charleston region, with almost $1.8 billion in domestic traveler spending in 2010 directly supporting $370 million in payroll and 21,000 jobs, and generating $62 million in local tax receipts. In 2011, Charleston was voted "Top City in the U.S." in the Conde Nast Traveler Readers' Choice Awards.
- **Location of major employers and development projects.** As part of its overall employment base, the Neck area is home to major employers from a variety of industry sectors. Many are part of the area's traditional strength in goods production and transportation, such as the Boeing assembly plant, Port of Charleston, and Kinder Morgan coal facility. Others represent professional and technical services such as SPAWAR-Atlantic and the Clemson University Restoration Institute. But other major employers are focused on local markets and activities, such as the big box retailers at the Centre Point shopping center and local government offices for the City of North Charleston and Charleston County. The economic base of the Neck area is poised for expansion through a number of major development projects already underway or awaiting improved economic conditions to proceed. The Navy Yard at Noisette redevelopment has already transformed parts of the former navy base into

new work spaces and residences, and has more land and buildings available. On the west side of the peninsula the Magnolia and Ashley River Center projects together represent 275 acres of riverfront land approved for a mix of residential, commercial, and civic/institutional uses. Development activity was halted due to adverse economic conditions, but eventual recovery and the repositioning of these projects will bring new activity and investment to the Neck area. Various other development projects and proposed sites are found throughout the Neck area that focus on residential, commercial, and industrial land uses.

- **Location in a business-friendly state and region.** South Carolina and the Charleston region are both frequently recognized as business-friendly places that are attractive sites for investment. South Carolina recently was ranked #7 on Chief Executive magazine's list of the best states in which to do business. The state has climbed in the rankings, having been rated #8 in 2011 and #10 in 2010. Charleston was recently ranked by Forbes magazine as the #5 small-midsized metro area in the U.S. for job growth, and #29 among metro areas of all sizes. The region also was ranked #11 in the Milken Institute's 2011 list of best-performing cities, up from #19 in 2010. With relatively low taxes, right-to-work status, and active public sector economic development initiatives at all levels of government, the Neck area is located in a place where significant resources are devoted to encouraging growth and development, and that has received positive recognition for the results.

Taken together, these advantages mean that the Neck area should continue to be one of the economic engines for the Charleston region, if not South Carolina as a whole. As the U.S. economy recovers from the Great Recession, national and global commerce expands, and local growth continues, the Neck area will be at the center of it all. A sampling of some of the recent and anticipated happenings and ongoing programs in and around the Neck area demonstrates that its future potential remains strong.

- In perhaps the biggest economic development news for the Charleston region in years, **Boeing** has built a second assembly facility for its 787 Dreamliner aircraft in North Charleston, on the north edge of the Neck area adjacent to existing Boeing facilities and the airport. This investment represents a $750 million capital investment and over 3,800 new jobs just from Boeing, and numerous suppliers and supporting firms have opened both in the Neck area and elsewhere in the region.
- A major economic engine planned, located in the heart of the Neck area, is the **Clemson University Restoration Institute (CURI)**, which is developing a research park devoted to fostering innovations and investment in the "restoration economy" – the revitalization of urban and natural areas through a variety of technical disciplines and public-private partnerships. Planning for the research park of around 100 acres on the former navy base is underway. One of the first projects is a Clemson school of engineering and manufacturing technology, offering technical training and graduate education, which will open in 2014. The research park complements Clemson's wind turbine drivetrain testing facility that is already under construction nearby and expected to be the world's most advanced facility of its type.
- **The Port of Charleston** has plans for nearly $1.3 billion in capital improvements over the next 10 years. These include a new terminal operating system and improvements to existing facilities, plus a new container terminal on the former navy base that will increase the port's container capacity by 50 percent. The first phase is expected to be complete by 2019. The Charleston Harbor is already the deepest in the Southeast and a deepening project is underway to ensure that it is fully able to accommodate the new mega-ships that will be traveling through the newly expanded Panama Canal to East Coast ports in the coming years.
- The **Charleston Digital Corridor** (www.charlestondigitalcorridor.com) is an initiative of the City of Charleston focused on expanding and enhancing its "knowledge economy" through a wide array of activities and support to member companies. The organization operates technology incubators where startup firms can find work space and interact with other companies while growing their businesses. The Digital Corridor also promotes development of technology-oriented facilities within several defined corridor areas, including the Gateway District, which is located along I-26 in the southern portion of the Neck Study area. With exceptional interstate access, this area is quickly becoming a choice business location. Blue Acorn and Boomtown, two firms located in the Gateway District, were recently named to Inc. Magazine's 2013 Inc. 500 list, an exclusive ranking of the nation's fastest growing private companies.
- **Charleston Life Sciences** is another City of Charleston initiative that focuses on biotechnology industries and capitalizes on links with the Digital Corridor initiative. Nineteen member companies currently share ideas and experiences and receive access to support and networking opportunities. The life sciences initiative also promotes lab space that is available in a facility recently developed by the South Carolina Redevelopment Authority (SCRA) that is located in the Neck area.
- With Southwest Airlines initiating service in 2011 and Jet Blue adding flights in 2013, the **Charleston International Airport** now services six domestic carriers. The result of this added choice is that ticket prices have dropped and passenger volume increased by more than 30 percent. Besides lower prices, travelers can look forward to a planned renovation of central hall and ticketing hall, new TSA consolidated screening checkpoint, terminal renovation of Concourse A, expansion (5 new gates) and renovation of Concourse B, a third baggage claim carousel and renovation of baggage hall, and a new rental car pavilion. Plans are also being considered to extend both of the airport's runways.

The Neck area is located at the heart of a growing region that has made economic development a priority through ambitious organizations and innovative programs

and facilities. The Charleston region is on the rise, and it is well-positioned to benefit from a recovering national and global economy. With its central location, multimodal accessibility, and concentration of employment and economic activity, the Neck area is poised to be a key engine for regional growth. With this context supporting it, the primary challenge for this Master Plan is to define opportunities and actions that can most effectively tap the area's potential and bring prosperity to its residents, businesses, and other stakeholders.

Chapter 2

Overview of Master Plan Process

This chapter describes the planning process that was used to engage the public and stakeholders in an exploration of values and concepts that helped identify the community's vision of the future.

Planning and Organization

GENERAL

Understanding a community's history, its current conditions, and where it wants to go are key ingredients of good planning that create a lasting legacy for future decision-making. Storytelling brings these pieces together and illuminates the visioning and master planning path through the identification of economic opportunities, development of catalytic projects, and revision of existing policies. The story about the Partnership for Prosperity project evolved through community dialogue and prior plans that identified key themes and messages. Supporting analytical evidence related to these key themes and messages was developed through subsequent evaluation, research and data analysis. The elements of the vision and Master Plan were developed by the community and agency staff, which brought a diverse range of perspectives to the table.

These representatives developed consensus on study area vision and goals that were mutually desirable, and where and why other goals and priorities were not shared. The value of this approach was that it brought all stakeholders along in the process of narrowing down a wide range of possible outcomes to a single set of Master Plan recommendations.

VISIONING STEPS

The Partnership for Prosperity vision emerged through a multi-phase planning process (see **Figure 2.1**) that allowed stakeholders to tackle complex planning challenges facing the Neck area. The process led stakeholders through an iterative exploration of different design and story concepts as a way of better understanding context, issues and opportunities. Reactions of stakeholders to these concepts helped identify what mattered to the community. Values are an important part of the story of the Neck area and directly influence the community's vision of the future, which will guide actions by the BCDCOG, the cities of Charleston and North Charleston and other important agency partners with a stake in the future of the Neck area.

The first component of the vision and master planning process established the context for the plan. The context, or background story about place, guided the development of the plan and laid the groundwork for establishing goals and recommendations in areas such as economic development, neighborhood revitalization, and community connectivity. This first step of the process answered the question ***"Where are we now?"*** Understanding the context required not only

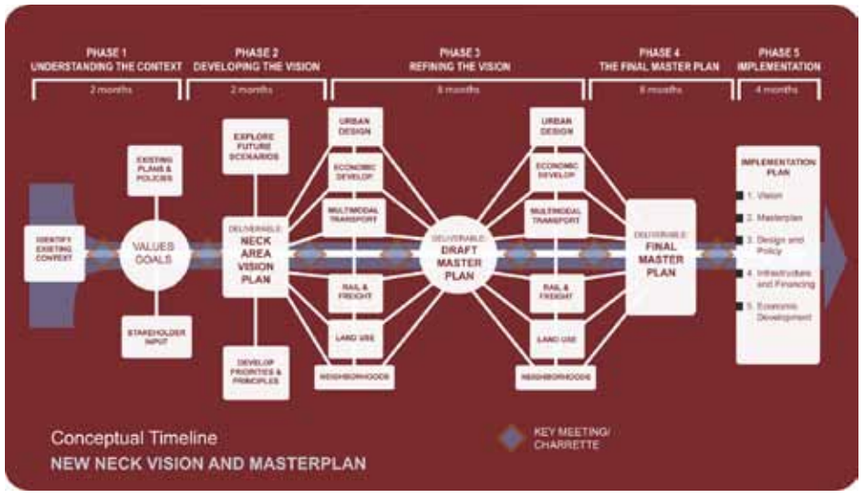


Figure 2.1 Planning Process

an understanding of the physical conditions within the Neck and surrounding areas, but the policy, social, market and financial opportunities and limits as well. Initial research and exploration expanded the stakeholder's understanding of the context and helped identify future possibilities.

The second component of the visioning process answered the question ***"Where are we going?"*** A working vision map and analysis were used to present ideas to the community and explore options that helped generate enthusiasm, interest and support for a more diverse and economically viable community.

The third component of the visioning process answered the questions ***"Where do we want to be?"*** and ***"How do we get there?"*** Achievable outcomes, supported by evidence, were developed along with design, policy and program solutions that support the outcomes. Community design concepts making it through the initial explorations of this study became the scenarios that were developed in more detail and compared in the analysis task of the study process and during the community design charrette.

COMMUNICATION AND OUTREACH

Several formats were used to keep stakeholders informed about the planning process. While they were also a way to gather information from the community, their primary purpose was for sharing information during the course of the project.

WEB SITE

Information on the project was posted on the Partnership for Prosperity web site, www.neckprosperity.org, which was launched at the outset of the process and managed by the consultant team staff. The web site included general

Partnership for Prosperity web site

information about the project and visioning process, as well as contact information for managers and notices of upcoming meetings. It also provided interested parties with project progress, links to surveys, meeting summaries and presentation materials, and opportunities to provide comments and to sign up to receive communications and announcements about the project and the visioning process.

Plan Information Network

At the beginning of the project, the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG) staff and the consultant identified an extensive list of community groups and interested citizens with whom to share information about the visioning process. These contacts became part of the Plan Information Network (PIN) that served as a key means of communicating with the community. This list of contacts was updated throughout the project as more people expressed interest in the plan. The PIN served as a two-way conduit of information and increased participation in the planning process by cultivating contacts who were in a position and agreeable to share information with their own networks. PIN contacts were encouraged to communicate the concerns and ideas of their networks with the BCDCOG and consultant team.

The PIN was used to announce public meetings and direct people to the project web site when substantive updates occurred. The PIN grew over the course of the study as contact information was added from various community events and from people who requested information through the web site sign-up form. However, the size of the contact list was of less importance than the quality of those contacts. A core group of PIN contacts committed to sharing information with their own networks proved more valuable than a large list of people who do not help distribute information or share feedback with the BCDCOG. The PIN was supplemented as a means of communication and outreach by mailing lists maintained by the BCDCOG, press releases, signage, flyers, and other means of communication.

Newsletter

Information and updates on the project were presented to the community through a project newsletter, which was distributed in print, web and email formats. Updates and links to the project web site were also included in the monthly BCDCOG e-newsletter.

Public Participation

Public participation was a significant component of the vision development process and occurred throughout the planning process. The consultant team worked with BCDCOG staff to create a comprehensive public engagement process that fostered a broad conversation about the future of the Neck area, set a foundation for a vision with a lasting legacy, and clearly blended the public process with analytical work.

The tools described below were used to engage the community and develop a set of plan recommendations based on their desires for the future of the Neck. Public input was incorporated into the master plan process each step of the way, leading to a truly community-based vision.

Steering Committee

The BCDCOG established a Steering Committee comprised of representatives of various boards and commissions, business and civic organizations, and homeowners' associations to ensure that a broad-based perspective guided the visioning process. The Steering Committee was able to understand cross-over issues and assess tradeoffs as the vision was developed and capital project priorities were identified because of the diverse representation from geographic areas and interests within the Neck area. In addition to providing guidance, the Steering Committee served as a group of "champions" for the process and resulting vision who were able to both share important information and ideas to their respective boards and constituencies and also help broaden the base of participation and support for the vision.

The Steering Committee met approximately 10 times during the process to review analytical information and proposed vision and Master Plan elements, and provided guidance regarding the desirability of various suggestion, before they were presented to the community at public meetings. The Steering Committee also served as a sounding board for design concepts and philosophies that were being considered by the consultant team as a result of public input at various presentations and open houses.

Focus Groups and Stakeholder Interviews

A series of individual stakeholder interviews and focus group discussions with various organizations and interests in the Neck area were held to establish the foundation for the visioning study. These interviews and focus group discussions supplemented data collection and review of existing plans and policies. They were designed to obtain perspectives and observations from a diverse array of interests with a defined role in shaping the future of the Neck area. The meetings helped to set the stage for a broader community dialogue (through public meetings and a charrette) about growth and development needs, challenges, and opportunities facing the Neck area over both the short and long terms.

Focus group meetings help to establish the foundation for the plan.

The purpose of the focus group discussions was to listen and gather the community's values, and learn about issues and opportunities from the perspectives of different interests within the area, including merchants, property owners, neighborhoods, boards, and special interest groups. The discussions provided an opportunity to generate ideas and feedback on various policy and development-related issues. Each meeting typically involved seven to 15 people and lasted between one and two hours, entailing a free-flow discussion facilitated by the consultant using a discussion guide. The meetings were not formally recorded, but a written summary of each discussion served as the official minutes of the meeting (summaries are included in **Appendix B**).

The stakeholder interviews entailed more informal conversations with key property owners in the Neck area who are not members of a local board or interest group. These one-on-one conversations offered an opportunity to hear their perspectives on development related issues in the Neck area, and were used for overall context, similar to the focus group discussions. A summary of the key themes, community values, and issues and opportunities that arose in the focus group meetings and interviews is provided later in this report.

Public Meetings and Events

Three public meetings and a five-day community planning charrette were held during the visioning process to give the public opportunities to provide input. These events served as key milestones in the visioning process, allowing the consultant team to present ideas and draft work, receive feedback, and modify project activities based on the input received. The public's input was incorporated into subsequent vision concepts and elements and was provided to the Steering Committee to assist with its discussions. An overview of each event is provided below, and detailed results for each are included in **Appendix B**.

Community Forum

The Community Forum workshop was held May 19, 2011 in the Military Magnet Academy cafeteria. The purpose of the meeting was to familiarize the community with the visioning process, the project objectives and schedule, background data regarding the project, current local planning efforts, and to get feedback from participants on their ideas, concerns and vision for the future of their community.

Community Forum participants identify their vision for the future of the Neck.

Group working together to identify issues and opportunities within the Neck area.

After an overview presentation, participants were divided into small groups for facilitator-led activities. The Community Values exercise asked each participant to identify their vision for the future of the Neck area in regards to economic freedom, community vitality, connectedness, and environmental health. The Mapping exercise asked each participant to identify places in the Neck area that provide opportunities for change. On maps of the study area, participants were asked to highlight important community places, pathways that connect people and places, and barriers and/or problems to transformation and change. At the end of the exercises, each group identified their most important ideas and presented their findings to the larger group.

The results of these exercises guided the consultant team in identification of key areas on which to focus for further discussion and conceptual design advancement.

Key ideas voiced by the community, if the values listed below were achieved, included:

- Economic Freedom
  - Greater home ownership and a variety of affordable housing choices/types;
  - Job training and job opportunities; and
  - More transportation choices.
- Community Vitality
  - Outdoor gathering opportunities;
  - Historic/cultural preservation; and
  - Increased access to community services.
- Connectedness
  - Additional east/west corridors;

- Well defined signage and wayfinding; and
- Walkable streets with a mix of uses.

- Environmental Health
  - Redevelopment of brownfield sites;
  - Environmental conservation; and
  - More green spaces in neighborhoods.

Key areas of community interest and concern listed in the mapping exercise included:

- Important Community Places
  - LAMC neighborhoods;
  - Downtown old North Charleston; and
  - Schools and Community Centers.

- Key Connections and Pathways
  - Rivers Avenue;
  - Shipwatch Square; and
  - Spruill Avenue

- Barriers and Problems
  - Environmental health concerns;
  - Railroad lines; and
  - Industrial uses adjacent to residential neighborhoods.

- Additional Comments – Community Places
  - Reynolds Avenue;
  - Stromboli Avenue; and
  - Naval Yard.

- Additional Comments – Community Concerns
  - Safety and lighting;
  - Access to Ashley and Cooper Rivers; and
  - Noise and light conflicts between industry and residential.

Detailed results of these exercises are included in **Appendix B**.

Community Design Charrette

The Community Design Charrette was held September 26-30, 2011 in Sterett Hall, located in the heart of the Neck area near the former Navy Base. The weeklong planning exercise included a series of public workshops, meetings, and design sessions, affording the community the opportunity to provide input on both big picture ideas and more detailed design concepts.

Each day of the charrette built from the previous day's work and input received from the public and stakeholders. People who attended multiple events during the week could see the progression of work and how their input had been incorporated. An overview of the charrette activities is summarized below:

- Day One (Monday, Sept. 26)

Consultant team site tour of key locations within the Neck area.

The charrette began in the afternoon with a site tour of community locations including Shipwatch Square, Chicora Elementary School, Gussie Greene Community Center, Stromboli Corridor, Joseph Floyd Manor and the area of Morrison, Meeting, Mount Pleasant and Huger Streets. A kick-off public session was held in the evening that included an overview presentation on the design process, the charrette process, anticipated outcomes, and work products. Issues and Opportunities maps of the study area were on display for public comment and attendees were also asked to participate in a "Talking Wall" exercise, where questions or comments could be left regarding the results they would like to see come out of the charrette and/or Master Plan.

- Day Two (Tuesday, Sept. 27)

The consultant team spent the day creating concept plans for both study-area wide systems and site specific urban designs, utilizing information from the Community Forum exercises, the "Talking Wall" comments, current plans and projects, field data, and the draft vision map. A stakeholder feedback briefing was held from

Consultant team discusses the economic generators within the Neck area.

11:00 AM to 1:00 PM and an informal public drop-in session was held from 3:30 PM to 5:30 PM where the community was invited to view concepts and share their thoughts. Representatives from South Carolina Department of Transportation (SCDOT) Office of Public Transit, South Carolina Department of Health and Environmental Control (SCDHEC), Charleston Area Regional Transportation Authority (CARTA), Charleston Digital Corridor, Low Country Local First, Creative Corridor and Low Country Housing Trust were in attendance during the sessions and the consultant team was able to speak with them about current projects and how the Neck area Master Plan could work with those projects. The day ended with an internal pin-up session where the different design groups within the consultant team were able to share information and ideas and coordinate work efforts.

- Day Three (Wednesday, Sept. 28)

The consultant team and City officials discuss possibilities of catalyst site designs.

Work continued on refinement of the study-area wide and site specific plans, building from both the internal and external discussions and feedback from the previous day. There was also a stakeholder feedback session in the morning. Several representatives from the trucking industry stopped in to discuss freight and goods movement in the Neck area and the associated challenges of balancing transportation needs with community livability. Representatives from the City of Charleston and Metanoia (Chicora renewal project) also dropped by to discuss the project and share their thoughts. The day ended with a public pin-up session from 5:00 PM to 8:00 PM, where the public was able to review and comment on the work-in-progress plans. Study-area wide plans illustrated the major framework systems throughout the Neck area. Site-specific plans illustrated catalyst areas, which are places where change can best catalyze future opportunities for the Neck area.

- Day Four (Thursday, Sept. 29)

The consultant team spent the day and evening working on plans based on feedback from the previous night's public pin-up session. Although there were stakeholder feedback and informal public drop-in sessions in the morning in which more valuable comments were provided, the majority of the time was spent refining and revising designs, coordinating multimodal systems, and creating graphics to illustrate design intent and urban form. Several members of the team spent time in the field looking at specific site conditions in an effort to address community comments and concerns. The day ended with another internal pin-up session to share information and ideas across disciplines.

The consultant team listens to feedback from a stakeholder group.

Local residents attending the closing presentation at the Open House.

- Day Five (Friday, Sept. 30)

The last day of the charrette started as a continuation of the previous day, with designers working to complete plans for the Open House, scheduled for 5:00 PM to 8:00 PM. All draft maps of study-area wide framework systems and catalyst sites were displayed at the Open House, as well as an economic framework diagram that identified regional economic anchors, community business centers and neighborhood centers. The closing presentation provided an overview of these draft documents, the results of the charrette work and next steps for the project.

The charrette gave the consultant team multiple opportunities to present initial design concepts to the community for their comment. Based on the interaction and responses during the week, the consultant team left the charrette needing to further research and refine catalyst area concepts, develop a list of potential projects, and evaluate different improvements to the area, including:

- Freight and livability strategies for highly conflicted areas;
- Freight mobility strategies;
- Transit strategies, including station spacing;
- Street assessments, including proposed cross sections;
- Street connectivity options; and
- Program refinement for catalyst areas.

Detailed results from the charrette mapping exercise and community comments are included in **Appendix A**.

Neighborhood Updates

Several neighborhood update meetings were held in December 2011 and January 2012, including meetings with the North Charleston Planning Commission, with LAMC representatives, and with neighborhood representatives at the Burke

High School Media Center. These meetings were designed to bring the public up-to-date with the project progress, current concepts and strategies being developed, and next steps toward completion of the Master Plan. The target audience included neighborhoods in the southern part of the Neck study area, although people from all over the study area and region were invited.

Community Open House

The Community Open House was held March 1, 2012 in the Military Magnet Academy cafeteria. The meeting featured the unveiling of the draft recommendations for the Neck area and all elements of the Master Plan were on display for the public to view and comment on. Study-area wide systems framework plans included:

Attendees rank potential project priorities for each catalyst site.

- Circulation,
- Thoroughfares,
- Transit,
- Transportation/Goods Movement,
- Parks and Open Space, and
- Bicycle/Pedestrian Networks.

The catalyst plans included conceptual short, intermediate and long term phasing plans to illustrate the possible transition from existing to future urban forms. Site-specific catalyst areas included:

- Intermodal Station/Convention Center,
- Gateway District,
- Amtrak Station,
- Olde North Charleston,
- Shipwatch Square,
- Stromboli Corridor, and
- King and Meeting Streets (both north and south of Mount Pleasant Street).

After a short overview presentation, attendees were asked to participate in two exercises. The first was a survey that asked for comments on the Master Plan recommendations and an overall rating (from "plan exceeds expectations" to "plan does not meet expectations"). The second asked which projects in the Master Plan were the most important. A list of projects was posted next to the associated plan map and attendees were given colored dots in which to indicate project priorities (from "most important" to "don't like"). Detailed results of these exercises are included in **Appendix B**.

The results of these exercises guided the consultant team in their determination of final project and policy priorities. For the Master Plan recommendations, the community provided the following input:

- Draft Master Plan
  - Exceeds Expectations: 29%
  - Meets Expectations: 54%
  - Partially Meets Expectations: 17%
  - Does Not Meet Expectations: 0%

- Ranking of Individual System Elements Receiving Positive Responses (Exceeds Expectations and Meets Expectations, per X of responses)
  - Bicycle/Pedestrian Network: 87.5%
  - Transit Network: 87.5%
  - Freight Movement: 83.3%
  - Catalyst Areas: 79.2%
  - Parks/Open Space Network: 79.2%
  - Roadway Network: 75.0%

In terms of individual projects, Catalyst Areas were paired based on proximity. The following proposed concepts received the highest number of "Most Important" or "Important" marks:

- Network Systems Concepts
  - Create a bicycle and pedestrian spine and connected network; and
  - Provide a layered network of transit systems to serve different travel markets.

- Intermodal Center and Mall Drive Catalyst Areas
  - Establish mixed use activity centers as catalyst for new development; and
  - Provide multiple transportation options to a variety of destinations.

- Amtrak Station and Olde North Charleston

- Create enhanced pedestrian connections to adjacent neighborhoods; and
- Provide community access to the Cooper River.

- Shipwatch Square and Stromboli Corridor
  - Establish grocery and drug store catalyst sites; and
  - Revitalize Shipwatch Square as a community focal point.

- North of Mount Pleasant and South of Mount Pleasant
  - Develop a "Creative Corridor" along Meeting Street; and
  - Redesign the Mount Pleasant Street/Meeting Street intersection.

Detailed results of these exercises are included in **Appendix B**.

Chapter 3
Vision Development: Setting Context

This chapter explores the economic, social, and environmental background that defines and influences the Neck area and surrounding region. Exisiting plans and studies have been reviewed to provide background guidance from previous planning efforts in the Neck area.

Setting Context

GENERAL

The economic, social and environmental context of the Neck area was an essential foundation for defining the vision for the Partnership for Prosperity Master Plan. This context not only included the physical conditions that define and influence the area, but the policy, historical, and socio-economic conditions in the study area and surrounding region as well. There were numerous plans and studies that also provided guidance for the vision and master plan, either prepared solely for sites or neighborhoods within the Neck area or with the Neck area as a component in a larger regional plan. That detailed knowledge base helped answer the questions "Where are we now?" and "Where are we going?"

EXISTING PLANS, POLICIES, AND PROJECTS REVIEW

A variety of planning documents were reviewed to help understand existing conditions and community issues within the project area. These documents provided area context, reference data, and systems level inventories. The goal of this review was two-fold; first, to become familiar with key initiatives, and second, to find themes and integrating elements among these documents.

Several common themes emerged from these documents that helped form key guiding principles important to the development of a vision and Master Plan for the Neck area:

The Park Circle Butterfly Garden is located in the center of historic Park Circle in North Charleston.

Heritage – the area's unique and treasured cultural resources need to be an integral part of land use decisions and should be preserved and protected from the potential negative impacts of growth and development, such as displacement of established lower income residents (gentrification) and further division of neighborhoods with transportation facilities. Residents should be able to take pride and ownership of a cohesive community.

Growth – Blighted conditions, a lack of locally-oriented services or other elements that detract from the area's character and image need to be eliminated. Urban infill and redevelopment consisting of mixed use development with a variety of housing, jobs, recreation, neighborhood services, and civic amenities needs to be encouraged along existing and proposed transportation corridors.

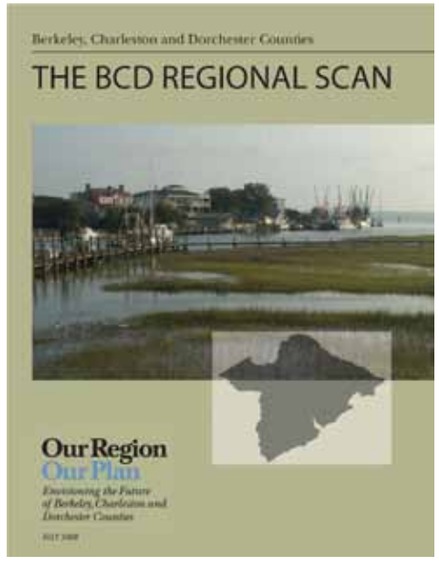
Transportation – Major transportation corridors need expanded travel choices – from regional freight service to better organized freight rail and trucking operations. Access to jobs, retail and transit service depends on eliminating gaps and overcoming barriers in the bicycle and pedestrian network. Vehicular traffic should be dispersed and walking made easier by creating smaller scale streets running parallel to the north-south central transportation spine and creating more east-west street connections similar to older neighborhood patterns. Key intersections should become distinctive gateways that provide economic opportunities to attract new business, industry, and residential uses.

Natural Systems – to the greatest extent possible, protect, preserve, and enhance the environment and existing natural resources. Integrate and connect green spaces and parks at all scales, including regional, community, and neighborhood projects. All families should be able to enjoy and benefit from these spaces, using them for both recreation and health.

The summaries below briefly describe the documents reviewed and highlight some of the key material relevant to the vision:

The BCD Regional Scan (2008)

The BCDCOG created an initiative to outline a blueprint (Our Region, Our Plan) for future growth and conservation within the Tri-County region. The goal of the initiative is to develop a vision to serve as a strategic long-range planning guide for the economic, environmental and social health of the region.



As the first part of this initiative, the BCD Regional Scan presents an overview of key regional trends and drivers affecting the future of the region. These key elements include land use and development, environment, transportation, public services, economics, and other aspects that have regional importance or need to

be addressed on a regional basis.

The BCD Regional Scan serves to make the public aware of these elements and the regional patterns of change that currently influence or in the future will influence the quality of life in the region.

As the Neck area sits squarely in the middle of the Tri-County area, its location alone made the BCD Regional Scan information relevant to the project. Maps of "Development in the New Neck," "Existing and Proposed Port Terminals," and "Existing and Proposed Transit Corridors" were all useful information incorporated into systems analysis base maps.

City of Charleston – Neck Plan (2003)

The Neck Plan provides a framework for development in the southern portion of the Neck study area. It includes three primary sections – an Urban Plan, a Zoning Strategy, and an Implementation Strategy – as well as a preliminary infrastructure assessment that describes public investments that will be needed to support the plans.

The primary goals of the Neck Plan address the physical plan – provide quality development opportunities, create synergistic activities, eliminate blighting conditions, maximize private sector leverage of public infrastructure, create additional affordable housing opportunities, and mitigate or eliminate conflicts between residential and non-residential uses while enhancing community viability.

The design guidelines included in the Neck Plan generally mirror those of the larger Neck area encompassed in this Master Plan – preserve and protect existing assets, capture lost value of the transportation spine, disperse traffic and make walking and bicycling easier, create mixed-use service centers, and maintain a variety of opportunities.

There were several specific areas mentioned in the Neck Plan that were noted and subsequently considered in the project issues and opportunities analysis, including Laurel Island development, Magnolia development, and Rosemont expansion and redevelopment.

LAMC Area Revitalization Plan (2010)

The LAMC (Low Country Alliance for Model Communities) Area Revitalization Plan is a grass-roots comprehensive planning effort led by seven environmental justice neighborhoods (Accabee, Chicora/Cherokee, Five Mile, Howard Heights, Liberty Hill, Union Heights, and Windsor) in the City of North Charleston. Its goal is to develop a unified community vision and implementation strategy for long-term growth and equitable redevelopment within the study area.

The first part of the LAMC Area Revitalization Plan is a community profile, which lays out current conditions and challenges facing the LAMC neighborhoods. The following subjects are covered – overview, demographics and economics, transportation and infrastructure, environmental, housing, commercial real estate, urban design and land use, education, public safety, and policing. Each subject is summarized by a SWOT analysis covering the major strengths, weaknesses, opportunities, and threats.

The second part of the LAMC Area Revitalization Plan is the final plan, which presents major recommendations and conclusions developed from the community profile and subsequent public meetings. The following subjects are covered – overview, study area analysis, community vision and goals, redevelopment priorities, and implementation plan. The final plan presents different scenarios for community reinvestment, housing, mixed-use, and recreational development that would be accessible across the LAMC communities, including major corridor improvements to facilitate that accessibility. A work plan is included that identifies the priority, responsibility, schedule, and resources for the plan's key elements.

The LAMC Area Revitalization Plan is relevant to the Neck Master Plan because it creates a community profile and introduces values and concerns for large residential areas. In doing so, it provides a strong planning foundation for developing framework and implementation strategies for the Master Plan project as a whole. The LAMC Revitalization Plan is considered a completed planning document, and thus, the Neck Partnership for Prosperity work will be coordinated to help advance key actions and strategies that serve to implement elements of the LAMC plan.

There were several specific areas mentioned in the LAMC Area Revitalization Plan that were noted and subsequently considered in the Neck project issues and opportunities analysis, including maps and text of prior planning efforts (naval complex, ports, Noisette, Mixson, Magnolia/Ashley River Center, and neighborhood revitalization studies), port-related roadway improvements, public amenities, environmental and industrial sites, proposed redevelopment projects, existing and planned schools, model block programs, and network improvements

summary.

Charleston County Comprehensive Plan (2008)

The Charleston County Comprehensive Plan is the guide for public decision-making and the future vision for preservation and development in Charleston County through the year 2020. The various elements of the Plan are designed to accomplish this vision by articulating goals for the future regarding the pattern, quality, and intensity of land uses, the provision of public facilities and services, economic development, availability of housing, and preservation of natural and cultural resources.

The Charleston County Comprehensive Plan also establishes strategies, actions, and implementation tools to enable the County to achieve the vision set out in the Plan. The components of the Plan focus on real actions the County can achieve given the appropriate time and resources. The strategies of the Plan elements are tied together in a comprehensive manner and are executed through both land use and priority investment strategies.

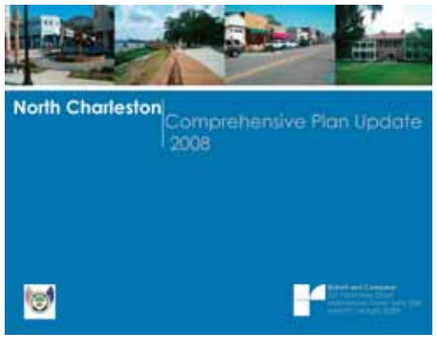
While the maps and policies associated with the document address planning in a larger scale, there are several positive takeaways for the Neck area. The maps not only indicate community facilities and economic development sites in the project area, but show how those facilities fit into a larger network that services the County. The maps also indicate where more detailed planning may be needed. By showing these relationships and information, local jurisdictions can ensure coordination and consistency in prioritizing investment strategies. Many of the listed strategies such as "coordinate land use patterns with transportation, housing, employment and retail development to provide communities and neighborhoods where people can live and work" are relevant to the goals of the Neck Area Master Plan and were used as building blocks throughout the project.

City of Charleston Comprehensive Plan (2011)

The City of Charleston Comprehensive Plan contains the future vision for preservation and development in the City through the year 2020. It is a document created by the citizens that articulates the values and goals of the City and serves as a guide for decision makers and a tool for managing community change to achieve a desired quality of life.

The Plan is a statement of community values and goals, and the 2010 Plan update was prompted by several factors, including new trends and opportunities (growth and sprawl, redevelopment and infill, and planning trends), sustainability (in planning and in natural resources), changes in the community (from new U.S. census Bureau information), and accomplishments of the previous decade (providing improvements in the quality of life).

The maps and policy associated with the Plan are larger in scale and the information included on them has also been included on a smaller scale in studies specifically of the Neck area. However, maps of "Peninsula Land Use," "Commuter Rail Study," and "Bike/Pedestrian System" were all useful information incorporated on systems analysis base maps.



City of North Charleston Comprehensive Plan (2008)

The City of North Charleston Comprehensive Plan will help guide the City in its arrangement of land uses and transportation systems so that it can continue its role as a strong, regional economic leader, while also retaining its natural resources and cultural assets. In addition, the Plan will help the City meet housing, public service, and facility needs as it continues to grow and develop. Equally important, it sets guidelines and strategies for redeveloping older areas of the City that have declined in population and investment over the years.

The components of the Plan focus on actions the City can achieve given time and resources. It is a policy document for future development in the City and is based not only on planning principles but extensive public participation.

The maps and policies associated with the Plan are larger in scale and the information included on them has also been included on a smaller scale in studies specifically of the Neck area. However, the map of "AICUZ Impact Zones" (clear zones adjacent to the airfield) was useful information incorporated on systems analysis base maps.

Charleston Area Transportation Study Long Range Transportation Plan (CHATS LRTP) (2010)

BCDCOG in its role as the metropolitan planning organization (MPO) for the Tri-County Region urbanized area, initiated the update of the CHATS Long-Range Transportation Plan in 2010 for the horizon year 2035. The vision of the Plan was to retain the BCD Region as a special place while providing accessibility and mobility for people and goods by developing and maintaining an adequate, safe, and balanced transportation system.

The Plan identifies transit strategies that seek to enhance mobility options, ease traffic congestion, and mitigate transportation impacts for all residents of the region. Strategies related to transportation are as follows:

- Existing Transit Service Enhancements
  - Continue to enhance commuter service from outlying areas
  - Continue to expand service oriented special generators
  - Expand community-based services in low-density areas
  - Implement Intelligent Transportation Systems (ITS) enhancements at major transit stops and investigate the potential of designated rights-of-way for fixed guideway service
- Existing Roadway Improvements in the Neck area
  - I-26
  - I-526
  - I-26/I-526 Interchange
  - Dorchester Road
  - International Boulevard
  - Montague Avenue
  - Micheaux Parkway
- Facilities, Equipment, and Amenities
  - Complete the North Charleston Regional Intermodal Center
  - Examine the role of Transit Oriented Development (TOD) as a transit hub to support nodal land use plans
  - Provide transit amenities throughout the region
  - Further coordination of opportunities between CARTA and Tri-County Link
  - Stronger coordination of land use and transportation planning
- New Modes and Technologies
  - Develop dedicated park-and-ride facilities
  - Study the potential implementation of fixed guideway service
  - Continue discussions and preserve rail corridor capacity for potential commuter rail service
  - Examine critical corridors for Bus Rapid Transit (BRT)
  - Explore potential water shuttle connections
- Institutional and Funding Strategies
  - Maintain a comprehensive marketing program
  - Actively participate in promoting transit-supportive land use

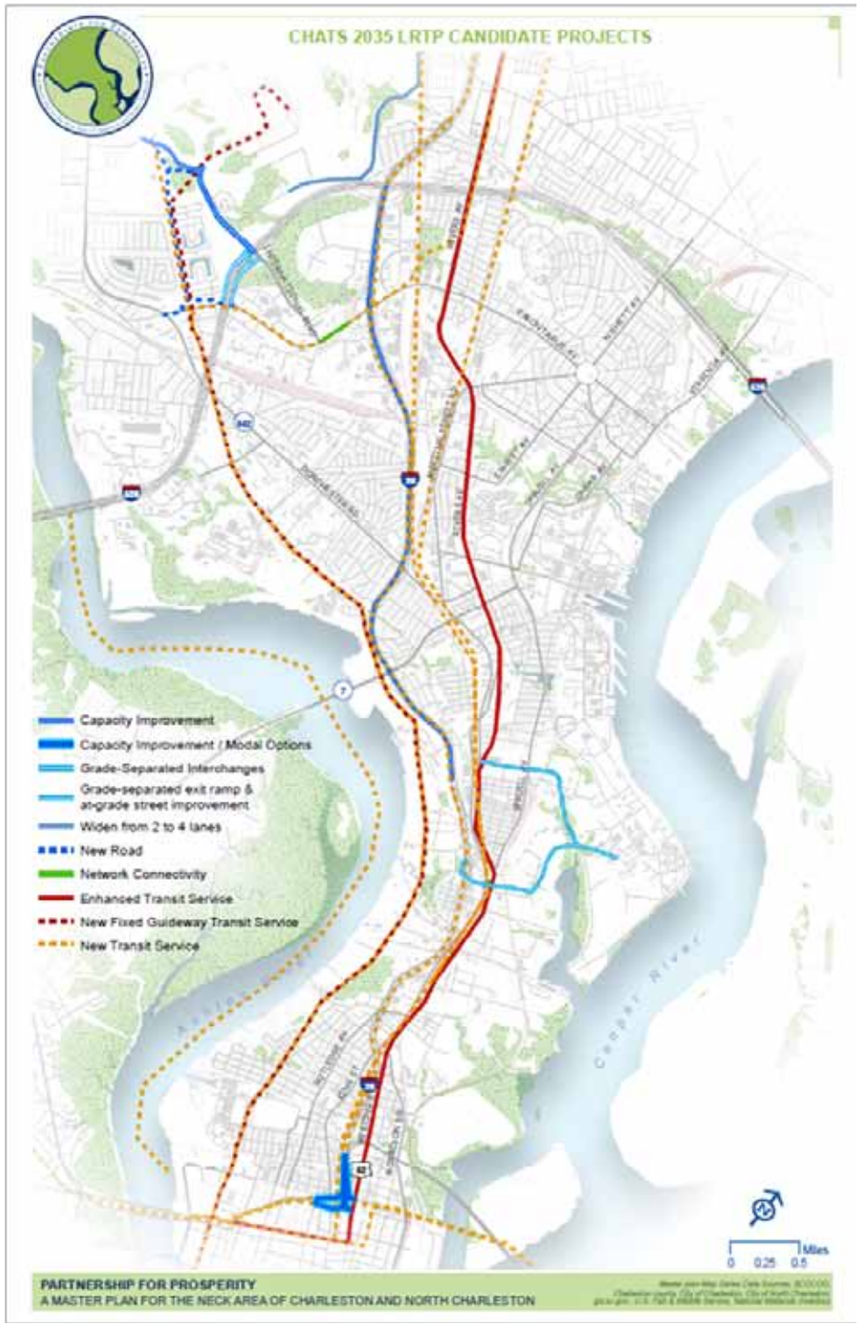


Figure 3.1 CHATS 2035 LRTP Candidate Projects

  - Pursue local funding outside of Charleston County
  - Enhance security as needed

The vision for the Neck area is consistent with CHATS' long-range plan (see **Figure**

3.1). Some of the concepts presented in this Neck Area Master Plan directly support a number of the recommendations made by the CHATS LRTP, including progressing plans for BRT and commuter rail, along with completing the North Charleston Intermodal Center. The strategy to enhance existing transit services is taken and expanded upon in the Neck vision.

BCDCOG Alternatives Analysis (2012)

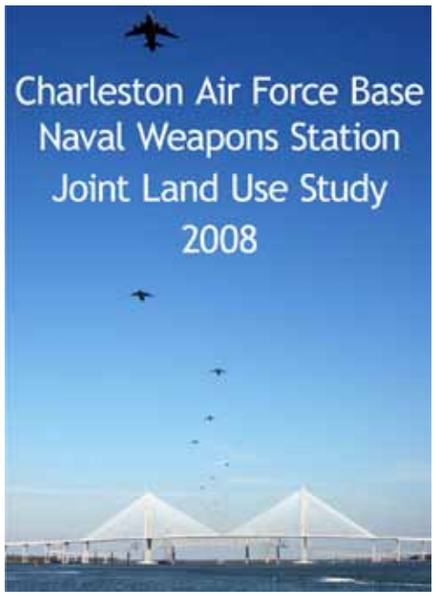
As a follow-on to earlier commuter rail planning efforts, BCDCOG initiated an Alternatives Analysis (AA) process in 2012 for the US 52 and I-26 corridors to comply with federal requirements for making major transit investments. The merits of various transit alternatives will be weighed against study goals, and various data will be used to compare the alternatives. A locally preferred alternative (LPA) will be established and the study will provide decision-makers with the information and next steps needed to pursue potential New Starts and Small Starts funding. The LPA may consist of a no-build or Transportation Systems Management alternative, or it could entail some form of fixed guideway transit. The AA will likely consist of a more detailed engineering study that includes some of the transit concepts presented in this Neck Area Master Plan.

Charleston Metropolitan Area Commuter Rail Feasibility Study (2006)

Two commuter rail corridors have been identified for further study – Summerville/Charleston (predominantly along the Norfolk Southern corridor) and Moncks Corner/Goose Creek/ Charleston (predominantly along the CSX Transportation corridor). The BCDCOG initiated the first phase of the Charleston Metropolitan Area Commuter Rail Feasibility Study in 2006 to investigate the potential for a future commuter rail service stretching from the peninsula to Summerville along existing Norfolk Southern rail lines. The study outlined the framework that continues to guide policy decisions.

Building upon the 2006 study, the Charleston Metropolitan Area Commuter Rail Feasibility Study - Phase 2 analyzed potential technologies, forecasted future ridership, developed a financial strategy, and determined the feasibility of a potential passenger rail service along the CSX Transportation main line along the US 52 Corridor through the Goose Creek and Moncks Corner areas. The study identified the following next steps: encourage transit supportive zoning and design standards in the rail corridor; perform an Alternatives Analysis to address the concerns over each type of mode and location of the service, and provide the ability to pursue federal funds; and support regional participation in CARTA Express bus service.

Joint Base Charleston JLUs (2008)



The Charleston Air Force Base (AFB) - Naval Weapons Station (NWS) Joint Land Use Study promotes communications with tri-county municipalities and provides land use recommendations to local governments in an effort to promote compatible civilian development near military installations and reduce operational impacts on adjacent civilian lands.

The primary study area extends one mile from the Air Installation Compatible Use Zone (AICUZ), with a one-half mile buffer around the boundaries of the NWS. The study area includes the horizontal surface flight area of the AFB, which extends 30,000 feet from the runways. The AICUZ area extending from Runway 33 (referred to as the SE quadrant) overlays a portion of the Neck study area in the Mall Drive catalyst area and the recommendations from the study should be considered for both accident and noise potential when developing conceptual designs.

The study recommends certain types of development within the flight area, including no development within the Clear Zone Surface; industrial and manufacturing uses, communications, wholesale, and recreation within the Accident Potential Zone I; and low density residential, personal and business services, and low intensity commercial/retail uses within the Accident Potential Zone II. The study recommends that the City of North Charleston adopt an AICUZ overlay zone to implement these development restrictions, and although the study is referenced in the Comprehensive Plan, no corresponding overlay district has been adopted in the zoning code.

While it is clear that other uses than those listed above have been developed within the Mall Drive AICUZ, recognition of these recommendations and restrictions will be important as concept plans for this portion of the Neck study area are developed.

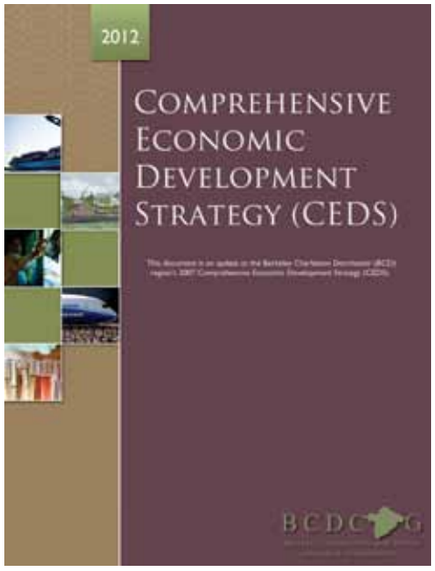
Our Region Our Plan (2012)

Our Region Our Plan is the BCDCOG vision plan for the tri-county region for the next thirty years. It provides a broad context for infrastructure improvements, growth, and development that can be used by both public and private entities as they contemplate decisions that will shape the future of the region.

The vision is formed around a framework of centers and open spaces, with corridors providing connections between the two. It draws upon placemaking principles, such as unique character of place, the natural environment, historic preservation, landscaping, variety of place, public realm, transportation options, affordability, walkable streets, low-impact parking, human scale, and economic development to provide a sustainable future with choices and opportunities for all residents.

Although the vision maps cover the tri-county region, the peninsula is a main focus within the larger networks and it is easy to see how the Neck area plays an important role in the future of the region. The Plans Scenario map, which indicated a variety of transit routes and ferry service along the Ashley River, and the Green Infrastructure map, which indicates new centers adjacent to The Neck area, provided useful information during the project analysis.

Comprehensive Economic Development Strategy (2012)



The Comprehensive Economic Development Strategy (CEDS) for the tri-county area is part of a process developed by the United States Department of Commerce to assess economy trends and infrastructure needs. The strategy details progress made to date on economic development activities and outlines future goals, providing the BCDCOG with the opportunity to make adjustments, report on prior activities, evaluate effectiveness, and schedule achievable goals for the future.

The CEDs document contains a variety of background data including demographics, geography, environment, population, age, education, income, transportation access, and workforce development. It also contains an analysis of economic and community development issues and opportunities that serves as the basis for gauging progress and addressing identified weaknesses.

The strategy concludes with a narrative of vital projects, programs, and activities that can address the needs of the tri-county area. Initiatives discussed include the Charleston Regional Development Alliance's Opportunity Next and Regional Economic Scorecards, the Trident workforce Investment Board's five Year Strategic Plan, and the BCDCOG Our Region Our Plan. These initiatives should be integrated into the framework and development analysis done for the Neck study area.

EXISTNG CONDITIONS INVENTORY

This section provides a generalized summary of existing conditions within the Neck study area. This information served as part of the foundation for the planning effort and helped ensure that all opportunities and challenges for future change were considered as part of the development and evaluation of alternatives.

The information below was generated through on-the-ground field reconnaissance and research, use of published documents and data, and discussion with local government and agency staff. Refinements were made using community input and recommendations. While every effort was made to be complete and accurate, some inventory categories may not reflect all field conditions.

Land Use and Zoning

Land use is designed to guide future development and it acts as a master plan for a municipality to clarify expectations to existing and future landowners and development. Land use maps are a graphic representation of physical uses of the land and usually indicate both current land use and plans for future land use. Land use maps identify land uses by general category and typically include such categories as residential, industrial, commercial, conservation, and civic uses.

The basic purpose and function of zoning is to divide a municipality into residential, commercial, and industrial districts that are for the most part separate from one another, with the use of the property within each district being reasonably uniform. Within each of these three main types of districts there generally will be additional sub-districts (or zones) with specific restrictions that can be quite detailed. Regulations may restrict areas to single-family homes or to multi-family dwellings or townhouses. In areas of historic or cultural significance, zoning regulations may require that certain features be preserved.

Zoning maps are a graphic representation of the boundaries for which a certain set of standards or regulations have been adopted. Zoning maps typically provide predictability for the residents and development community as to what

type of land uses may be expected and allowed within each zoning district. Generally speaking, no building, land, structure, or premises shall be erected or used except in the conformity with the regulations for the use districts in which they are located.

City of North Charleston Zoning

In the City of North Charleston, the zoning districts below are located within the Neck study area, with the R-1 and M-2 districts being the most prominent (see **Figure 3.2**):

R-1, Single-Family Residential District. This district allows medium density single-family residential uses.

R-1A, Low to Medium Density Residential District. This district provides low to medium density single-family residential uses, including mobile homes.

R-2, Multi-Family Residential District. This district allows medium to high density residential uses, including R-1 uses and multi-family dwellings.

R-3, Mobile Home Residential District. This district allows medium density residential uses, including R-1 uses, mobile home parks, and a single mobile home on a lot of record.

OD, Office District. This district allows for infill office and institutional uses serving the neighborhood and citywide by allowing professional offices separate from the intensive development of commercial and industrial development.

ON, Neighborhood Office. This district permits business and professional offices and all R-1 uses.

B-1, Limited Business District. This district encourages the formation and continuation of a quiet and uncongested environment for compatible professional business offices together with certain residential and neighborhood commercial uses which will not adversely affect adjacent residential areas.

B-2, General Business District. This district is reserved for general business purposes with particular consideration for general commercial development.

B-3, Commercial, Recreational, and Highway Oriented Usage. This district allows suitable highway oriented uses and social and recreational facilities which may not be compatible within one thousand feet of a residential development.

CRD, Commercial Redevelopment District. This district allows for medium density business development.

M-1, Light Industrial District. This district provides areas for commercial, warehousing, transportation, and certain light manufacturing activities.

M-2, Heavy Industrial District. This district provides areas for commercial, manufacturing, storage, and transportation-related activities.

PD, Planned Development District. The intent of this district is to encourage flexibility in the development of land in order to promote its most appropriate use; to improve the design, character, and quality of new development to facilitate the adequate and economical provision of streets and utilities; and to preserve the natural and scenic features of open space.

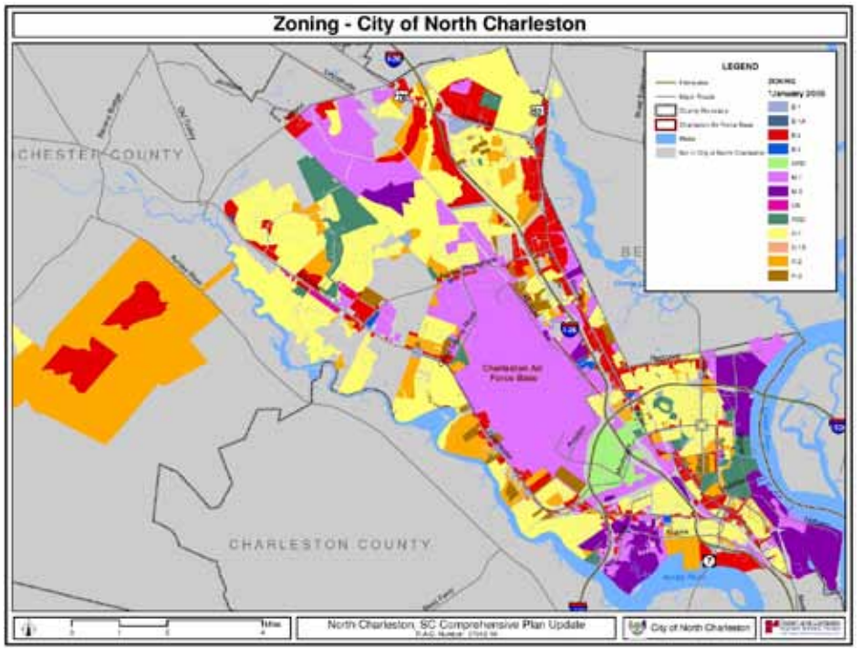


Figure 3.2 City of North Charleston Zoning Map

City of Charleston Zoning

In the City of Charleston, the zoning districts below are located within the Neck project area, with the HI and SR-1 districts being the most prominent (see **Figure 3.3**):

C, Conservation District. This district is designed primarily to protect and encourage the appropriate use of marshlands, forested areas, scenic areas, and agricultural areas that are not likely to be developed for urban purposes.

SR-1, Single-Family Residential District. This district allows one-family detached dwellings with a maximum density of 4.8 units per acre.

SR-2, Single-Family Residential District. This district allows one-family detached dwellings with a maximum density of 7.3 units per acre.

DR-1 and DR-1F, Diverse Residential Districts. These districts allow multi-family residential (3 or more) dwellings, one-family attached dwellings, and single- and two-family dwellings, with a maximum density of 19.4 units per acre. The BZA may approve fraternity houses, sorority houses, dormitories, and homes for the elderly as special exceptions.

DR-2 and DR-2F, Diverse Residential Districts. These districts allow multi-family residential (3 or more) dwellings, one-family attached dwellings, and single- and

two-family dwellings, with a maximum density of 26.4 units per acre. The BZA may approve fraternity houses, sorority houses, dormitories, and homes for the elderly as special exceptions.

DR-3, Diverse Residential District. This district promotes acceptable living environments for occupants of mobile home parks as well as occupants of mobile homes and manufactured dwellings on single lots outside of mobile home parks. The minimum lot size for a mobile home or manufactured dwelling on its own lot is one acre.

DR-4, Diverse Residential District. This district allows multi-family dwellings of 20 or more units for the elderly.

DR-9, Diverse Residential District. This district allows multi-family residential (3 or more) dwellings, one-family attached dwellings, and single- and two-family dwellings, with a maximum density of 9.0 units per acre.

LB, Limited Business District. This district provides a limited variety of commercial uses and services associated with neighborhood retail, financial, and office activities which are compatible with residential uses. The hours of operation for most permitted uses are between 7 a.m. and 11 p.m.

GB, General Business District. This district provides a broad range of commercial uses and activities. It is the most intensive commercial zoning district.

BP, Business Park. This district accommodates service type commercial, wholesale, storage, and light manufacturing uses with relatively limited external effects in a high quality environment. Uses which fit into this category are characterized by being low traffic generators, having no external environmental effects across property lines, and having all outdoor storage areas screened from adjoining rights-of-ways and properties.

LI, Light Industrial District. This district permits most commercial uses and low impact industrial uses which are compatible with surrounding commercial districts.

HI, Heavy Industrial District. This district provides a broad range of industrial uses. It is the least restrictive industrial zoning district.

GP, Gathering Place District. This district promotes mixed0use town, village, and neighborhood centers at major intersections or along traditional commercial streets. Diverse housing, mixed-use, pedestrian-oriented developments are permitted in this district.

MU-1, Mixed Use District. This district is intended to permit high density residential uses along with a limited variety of neighborhood commercial uses and services in urban areas of the city.

MU-2, Mixed Use District. This district is intended to permit high density residential uses along with a broad range of commercial uses and activities in urban areas of the city.

MU-1/WH, Mixed Use 1, Workforce Housing. This district is incentive based and is intended to permit high density residential uses with a mixture of housing opportunities, along with limited neighborhood non-residential uses and services in urban areas of the city.

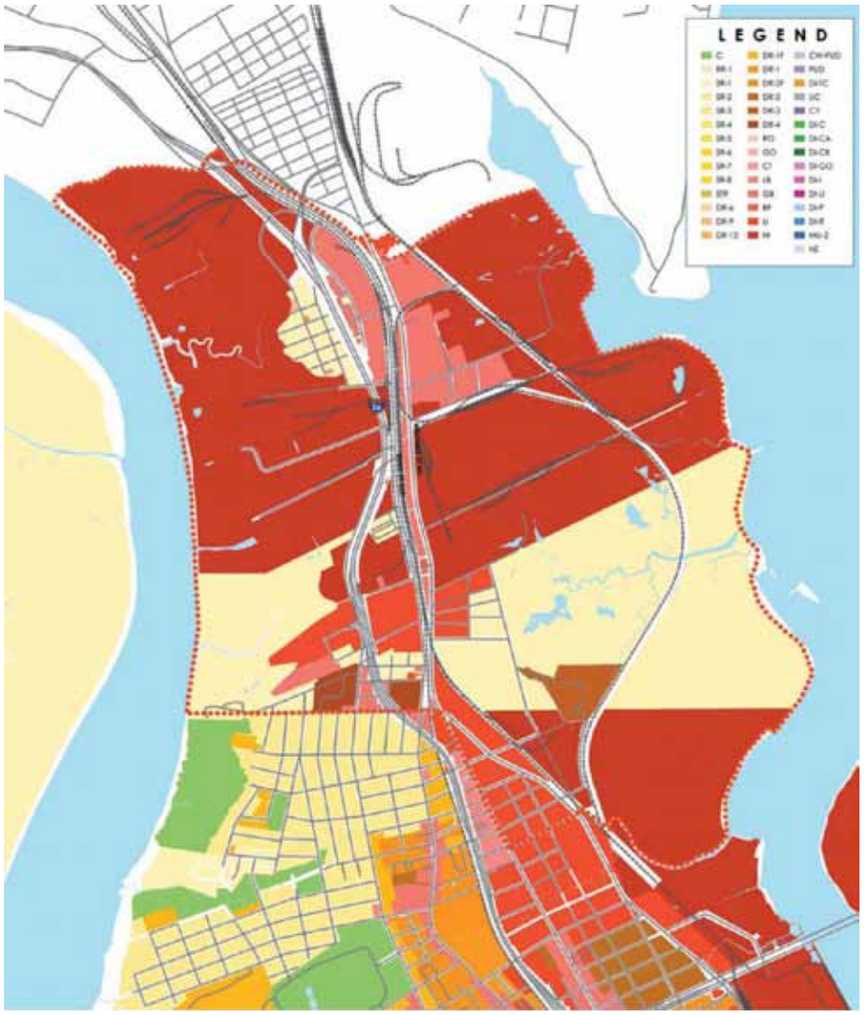


Figure 3.3 City of Charleston Zoning Map

MU-2/WH, Mixed Use 2, Workforce Housing. This district is incentive based and is intended to permit high density non-residential uses with a mixture of housing opportunities, along with a broad range of non-residential uses in urban areas of the city.

PUD, Planned Unit Development District. This conditional use district provides flexibility in the design of developments; to encourage comprehensive planning of major developments; to permit innovation in neighborhood design that includes incorporation of open space or other amenities; and to insure compatibility of developments with surrounding areas.

Charleston County Zoning

There are small pockets of unincorporated Charleston County land scattered throughout the Neck area, primarily within the City of North Charleston. The

zoning districts for these lands are identified as follows::

M-12, Mixed Style Residential 12 District. This district consists of small lot single family development, as well as forms of attached and multi-family development suitable for close-in, high access areas. Traditional neighborhood style developments including a mix of residential, commercial, institutional and office development characterize the mixed style development.

R-4, Single-Family Residential 4 District. This district consists of low-density residential uses and provides single-family development on typical suburban lots.

CC, Community Commercial District. This district provides for a range of commercial uses including professional and other office uses, institutional uses (civic or community uses), medical, hospital, hospitality, retail, wholesale, and flex space located along highways, at major intersections, and in other highly accessible locations.

I, Industrial District. This district includes major industrial uses and industrial parks and encourages high-tech industries. Appropriate uses include manufacturing, distribution facilities, flex space, industrial support activities, ports, and transportation related facilities.

NRM, Natural Resource Management District. This district is for conservation management and consists of natural resource areas - typically highland area surrounded by marsh or water, islands, or fragile natural land.

While there are many parcels or sites where revitalization within the Neck area can begin to occur through development and redevelopment under existing zoning districts, existing regulations do not lend themselves to the mix of land uses and densities/intensities proposed later in this Master Plan for transit-oriented design within catalyst areas. The opportunity may exist to revise planning policies to allow more horizontal and vertical mixing of uses to create core catalyst areas with densities supportive of these multimodal transportation options.

Urban Fabric

Urban fabric loosely describes the physical form of a place, emphasizing building types, roads, rail, open space, frontages, and streetscapes. It is often described by two typologies – the large scale or course grain network and small scale or fine grain network.

The Neck area, encompassing more than 25 square miles, contains examples of both topologies. These topologies are greatly influenced by the road and rail networks, which serve not only as framework pieces for accessibility and movement, but also as barriers to connectivity.

Course grain urban fabric consists of larger areas that do not provide many opportunities for connectivity. Typical features include oversized blocks, big box stores, multi-block projects, and manufacturing operations and associated services - uses that often do not feel integrated with the surrounding community, but instead seem imposed on the area. Areas of course grain urban fabric often act as barriers for all except those who are there for a specific purpose.

Areas of course grain urban fabric in the Neck area include a variety of industrial uses along the Ashley and Cooper Rivers, Centre Point, the former Naval base, and the Port.

Fine grain urban fabric consists of smaller blocks with a higher degree of connectivity. Buildings front the street and offer opportunities for social interaction. With more intersections, traffic is slower and safer. Fine grain urban fabric is not imposed on a community, but has evolved over time in a piecemeal fashion, responding and adapting to a variety of internal and external conditions, thus becoming a dynamic place reflective of the area's changing needs.

East Montague Avenue is a good example of fine grain urban fabric.

Areas of fine grain urban fabric in the Neck area include Olde North Charleston, Park Circle, historic LAMC neighborhoods, Oak Terrace, Horizon Village, and the Hampton Park area.

While there is no one ideal form of urban fabric, the preferable and most resilient choice is usually the fine grain system that adapts and evolves over time. The Neck area has many different networks and patterns that have the ability to be memorable places and pedestrian friendly areas that can help revitalize and connect the community.

Rail Network

There are three railroad track systems running north and south through the Neck area (see **Figure 3.4**). These track corridors and yards are owned and operated by CSX Transportation (CSXT), Norfolk Southern Railway (NS), and the South Carolina Public Railways (SCPR). CSX owns and operates the Bennett Rail Yard and Cooper Rail Yard. Norfolk Southern owns and operates the Seven Mile Rail Yard. The existing rail lines are the result of several consolidations over time that have removed redundant trackage.

As shown on **Figure 3.4**, three rail lines enter the study area in the northwest corner of the study area. The green line is the Columbia-Charleston main track of

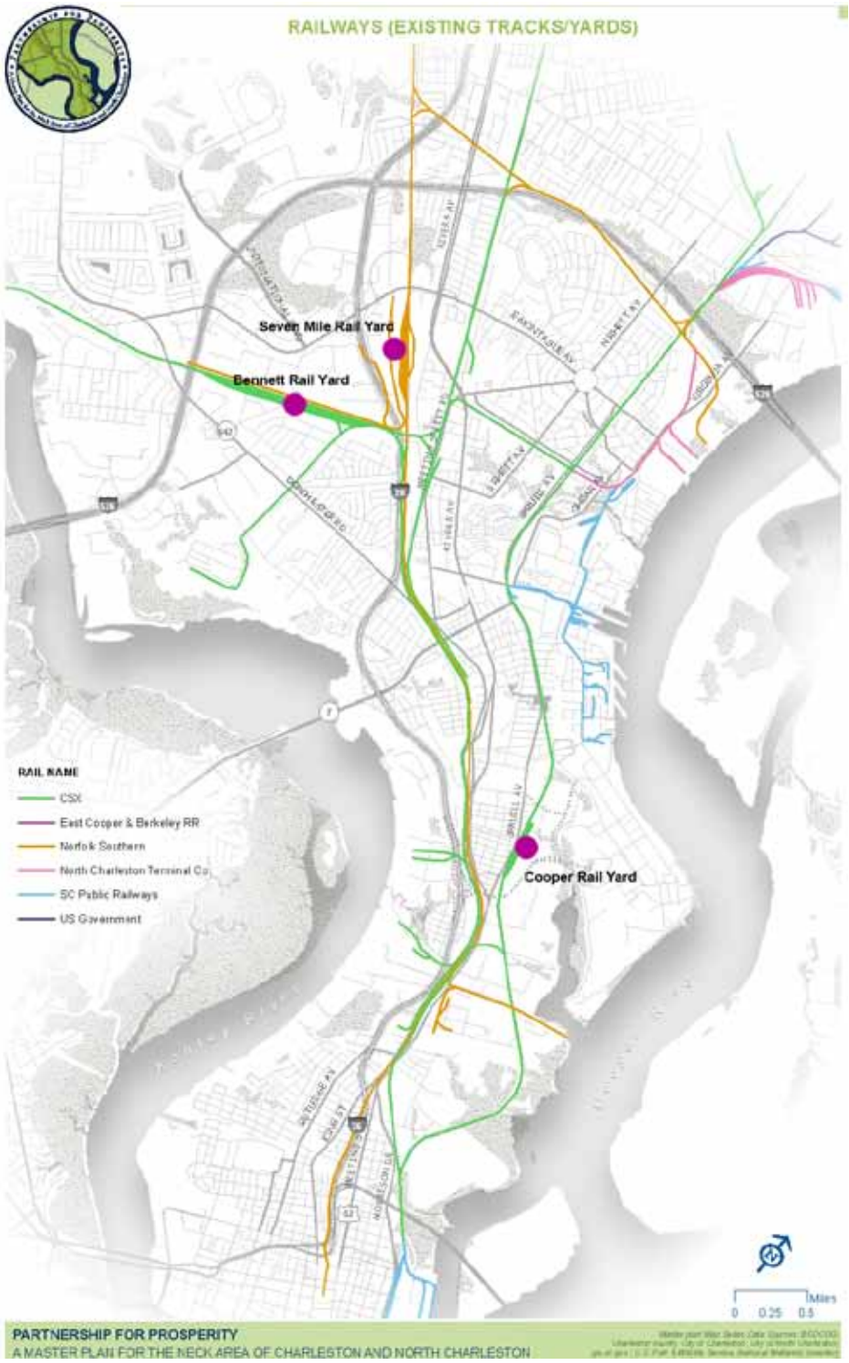


Figure 3.4 Rail Network through Neck area

the Norfolk Southern Railway. It continues through the study area and terminates in downtown Charleston. The westernmost red line is the CSXT "A Line," a primary track running from the Northeastern US to Florida. It passes through North Charleston turning west, crossing the Norfolk Southern main track and exiting the study area across the Ashley River. The location where the two main tracks cross is known as SY Junction. The easternmost red line is the CSXT "S Line" which runs from Hamlet, North Carolina through Dillon and Andrews and passes the former Naval Base area on the west in North Charleston before joining the CSXT port line and terminating just north of the Columbus Street Terminal in Charleston. It is a secondary freight line. The other rail lines on the figure serve local industries, marine terminals of the South Carolina Ports Authority, private operators, and governmental installations.

There are four lines running north and south through the Neck area. Three of the four lines spring from or cross the CSXT "A Line" at or in very close proximity to SY Junction. The westernmost is the CSXT Downtown Lead which originates at the eastern end of the railroad's Bennett Yard and runs parallel and adjacent to I-26 initially, eventually ending up parallel and adjacent to King Street on the west. This line serves a number of industries, the largest of which is Rhodia, Inc. This line terminates in the vicinity of Ford Ready Mix at Monrovia Street.

Lying between I-26 and Meeting Street initially are two rail lines, one belonging to CSXT (closer to Meeting Street) and the other to NS. The CSXT line is a remnant of predecessor Atlantic Coast Line's track to downtown Charleston and the docks of the South Carolina State Ports Authority. The line has been truncated in the vicinity of Hackermann Avenue before reappearing at Cherry Hill Avenue and continuing to a junction with the SCPR at the northern boundary of the Columbus Street Terminal. The northern end of the line is the location of the CSXT intermodal terminal. The NS line is the original route of the South Carolina Canal and Rail Road Company constructed in the early 1830s. The NS line ends up in between King and Meeting Streets in the Neck area and continues on between the two roadways until it terminates at Spring Street in downtown Charleston. Columbus Street Terminal and Union Pier Terminal bound NS trains cross over the CSXT line described above near Covington Street for interchange of traffic with SCPR at the Columbus Street Terminal. The NS main line from that point to its downtown terminus is out of service. The joint port line is used by the NS BMW unit train six days per week and other port-bound trains of both railroads less frequently. The CSXT line lying along the eastern side of the peninsula enters the study area running parallel and adjacent to Spruill Avenue and then Meeting Street until it diverges on a route closer to the Cooper River and finally joins the joint CSXT and NS line en route to the Columbus Street Terminal. This rail line was owned by CSXT's predecessor Seaboard Air Line and thus is designated the "S Line." It is out of service except for the segment from the end of the Cooper Rail Yard to Kinder Morgan.

The Charleston region is served by AMTRAK, which operates three interstate passenger trains per day each way through the area. Station stops for the Silver Meteor and Palmetto lines occur in North Charleston near the Rivers Avenue/

Gaynor Street intersection on CSX tracks. The Auto Train also runs on this same route but does not stop.

The principal public complaint in regard to rail service in the Neck area relates to interference with vehicular traffic on the area's principal roadways, namely King and Meeting Streets, and a lack of east/west connecting roadways due to the presence of the north/south rail lines.

The dominant heavy industrial use in the past along both rivers is rapidly disappearing; however, freight movement by rail will be an important component of the Neck area for many years to come. Although land use is evolving, with the Magnolia and Ashley River projects on the Ashley River and the Laurel Island and Noisette projects on the Cooper River, as well as many examples of smaller projects, historic neighborhoods and established residential areas, the need to provide separation of residential and rail uses remains as important as ever, and every effort should be made to mitigate for a variety of rail-related impacts and conflicts.

ROADWAYS

Navigating between point A and B in the Charleston Neck area is challenging, at best. While the roadway network is comprised of interstate highways, major US highways, primary and secondary state highways and a network of collector and local streets, all that provide several alternate routes parallel to the Interstates, its users also must face a slew of challenges. This includes an overall lack of connectivity across the Neck area, a lack of adequate rail crossings, and numerous safety and accessibility concerns for bicyclists and pedestrians.

There are numerous strengths to the overall roadway network located within the Neck Area. There is an excess capacity of non-interstate facilities with good access to the two interstates. Additionally, there are several alternate routes running parallel (north/south) to the interstates. The established roadway network is already being utilized by multiple modes of transportation, including auto, truck, transit, bicycle and pedestrian. In many areas, there is an excess of right of way, which would allow for either expansion or redesign of that roadway. Finally, there are already improvements planned in connection with the Port Access Road and Stromboli Corridor, which will help in providing better overall regional mobility and local connectivity.

With the strengths of the roadway system come challenges as well. There is a general lack of connectivity between the Cooper and Ashley Rivers (east/west) in the Neck Area as a whole. Pavement conditions of existing roadways are often poor. Other problems include potholes and poor drainage (primarily in the southern portion of the Neck area). The facilities provided for bicyclists and pedestrians are inadequate in many areas, with little or no buffer between sidewalk and travel lane, and create safety issues. Bike lanes and facilities are lacking in many areas and in many cases where sidewalks are present, they are not wide enough. Other challenges facing the roadway network are a lack of adequate access to existing and developable properties and a lack of safe access to transit stops.

With rail traffic continuing to be a major influence in the area, there is a definite need for safe, at-grade crossings. While the majority of major roadways have warning lights and gates at rail crossings, there are many crossings where neither is present.

The major north-south roadways throughout the Neck area are I-26, US 52 (Meeting Street/Carner Avenue/Rivers Avenue) and US 78 (King Street). Interstate 26 is the true "spine" of the Neck Area, connecting Charleston to North Charleston, as well as to I-95 and the rest of South Carolina. It is congested during peak hours of the day, although daily volumes have been decreasing through the Neck Area. There is some widening of I-26 in progress as a result of an Environmental Assessment, including the addition of one lane each way, the replacement of six bridges and the reconfiguration of two interchanges. Transportation on the US highways is in relatively low demand, with capacity generally exceeding measured traffic volumes. Conditions along many of the US highways, including US 52, vary as one travels along them. For instance, US 52 at I-526 is a divided, four lane roadway with good pavement condition, 12-foot travel lanes, occasional sidewalks, and suburban development; while US 52 at Stromboli Avenue is an undivided, four lane roadway with poor pavement condition, 10- to 11-foot travel lanes, sidewalks and industrial development.

Montague Avenue is one of the main east-west connections in the Neck area.

East-west connectivity is often lacking throughout the Neck area. Due to the presence of major north-south railroad corridors throughout the peninsula and their restricted number of crossings, there are not adequate east-west routes to provide sufficient options for local circulation. The main east-west connections are I-526; Cosgrove Avenue, connecting West Ashley to Spruill Avenue; and Montague Avenue, connecting Dorchester Avenue on the west to Virginia Avenue on the east. The lack of connectivity places greater traffic pressure on the interstate system, adds congestion with a mixture of truck and auto traffic on other roadways like Montague Avenue, and encourages cut-through traffic in neighborhoods when trains or traffic accidents disrupt the flow of the main roadway network.

While the roadway network within the Neck area has its share of challenges, there are also several opportunities that will help it rise above those challenges. The first is the excess capacity of non-interstate facilities and an excess of right of way along many roadways. Through the use of road diets, the addition of bike lanes, the widening of sidewalks, and in some cases, the expansion or redesign of the roadway, many roads will feel more comfortable to motorists, while providing needed facilities for those who rely on means of transportation other than a car. Improvements to facilities, such as fixing drainage issues and potholes, will make the roads easier and safer for all to use. Finally, the majority of future planning projects in the Neck area are in their early stages, which allows for a comprehensive approach to the design of new or improved roadways.

Transit

The primary public transportation provider in the Neck study area is the Charleston Area Regional Transportation Authority (CARTA), which operates approximately 20 bus routes and over two hundred miles of route service in the Tri-County area. CARTA is an independent authority organized under the laws of South Carolina, and is a designated recipient of federal transportation funds. Tri-County Link is the rural public transportation provider in the region, offering demand response service for those who are transportation disadvantaged due to age, disabilities, income or other factors.

Transit Challenges

Finding a sustainable funding source for public transportation has been challenging in the past. In 2004, CARTA experienced major service cuts in response to local funding constraints. A half-cent sales transportation tax in Charleston County was passed in November 2004, and proceeds became available in 2005. Subsequently, CARTA increased its level of service.

In recent years, transit funding has decreased due to lower sales tax revenue associated with the economic recession. CARTA has continued to work within its budget while continuing to search for additional funding sources from federal, state, county, local and non-traditional sources. The system continues to improve efficiency by evaluating non-performing fixed routes and making adjustments in service when necessary. CARTA recently completed a 5-Year Strategic Plan that established priorities for future system investments, projected near-term revenues and expenses, and provided a guide for the development of future annual budgets.

Tri-County Link faces the same fiscal challenges as other rural transit providers elsewhere in the country. The system is funded through a mix of federal grants (Section 5309, 5311, 5316 and 5317), Medicaid funding for Berkeley and Dorchester Counties, and contractual agreements with local businesses.

Existing and Planned Facilities

The existing Amtrak station in North Charleston could become site for Intermodal Transportation Center.

The site of the future North Charleston Intermodal Transportation Center is planned on Montague Avenue in the vicinity of Dorchester Road. This 30-acre site was purchased through funding from the Federal Transit Administration Section 5309, New Capital Investments. In 2010, CARTA constructed a park-and-ride lot consisting of 225 parking spaces for its express bus service. Ultimately, this Intermodal facility is envisioned to accommodate CARTA and Tri-County Link transit services, regional Amtrak and Greyhound service, as well as rental cars and taxi service to and from the Charleston International Airport.

There has been some discussion about moving the Intermodal Center to the existing Amtrak Station facility. In addition to a CARTA funding shortfall for development of the site, there have also been questions about whether trains stopping at the new station would block rail traffic at the CSX Bennett Yard. CARTA originally thought that trains could sit on the main line as they currently do at the existing Amtrak Station, but CSX has indicated that a spur would be needed for the trains, creating new questions about cost and additional land. No decision has been made at this time as to the final location for the Intermodal Center.

CARTA's SuperStop is located at Rivers Avenue near Cosgrove Avenue and serves as the major transfer hub for service in North Charleston. The SuperStop consists of a small building and a covered area where buses pull through and load and unload passengers. The site is conveniently located for ease of access, but is small and does not offer space for future expansion.

Current Services and Transit Travel Patterns

Intercity service is offered by Greyhound, with a station on Dorchester Road, and Amtrak, with a station on Gaynor Street near Rivers Avenue. CARTA and Tri-County Link are the transit providers operating in the Neck area

CARTA

CARTA provides a network of fixed routes, commuter express routes, and paratransit service (Tel-A-Ride) accommodating the needs of residents in Charleston and North Charleston (see **Figure 3.5** and **3.6**). Fixed route services are provided daily as early as 5:45AM and as late as 9:30PM on certain routes. The North Charleston to James Island Express service (Route 1) serves commuters during the peak morning and afternoon periods.

Route	Route Name	Hours of Operation	Frequency
1	North Charleston Express	5:00AM - 9:00AM & 3:00PM - 8:30PM	30 minutes
10	Rivers Avenue	6:00AM - 8:30PM	20 minutes
11	Dorchester/Airport	6:00AM - 9:00PM	60 minutes
12	Upper Dorchester	5:45AM - 9:34PM	45 minutes
13	Remount Rd.	6:30AM - 9:00PM	60 minutes
101	Spruill Ave.	7:00AM - 8:00PM	30 minutes
102	North Neck	6:30AM - 8:00PM	60 minutes
103	Leeds Ave.	7:00AM - 7:30PM	60 minutes
104	Montague Ave.	6:00AM - 8:00PM	60 minutes

Figure 3.5 Current CARTA service in the Neck area

A park-and-ride lot at the Super Kmart near the intersection of Rivers Avenue and Otranto Road in North Charleston provides an opportunity for regional commuters to drive to this location and ride the express route through the Neck into Charleston.

Route 10 - Rivers Avenue traverses the entire length of the Neck area and is the fixed route with CARTA's highest ridership, carrying 90,000 passengers per month. Additionally, CARTA's Route 11 – Dorchester/Airport serves more than 22,000 monthly passengers, and many more passengers use the other routes described in **Figure 3.5**.

Tri-County Link

Tri-County Link, formerly known as the Berkeley-Charleston-Dorchester Rural Transportation Management Association (RTMA), offers deviated fixed routes, commuter routes and contracted demand response services in the rural portions of Berkeley, Charleston and Dorchester Counties. Tri-County Link serves customers who reside in rural areas traveling to employment opportunities and other services. Tri-County Link service passes through the Neck area but does not stop. Passengers can transfer from Tri-County Link to CARTA at coordinated transfer points, including the North Charleston's Super Kmart park-and-ride lot.

Transit Markets and Travel Patterns

Due to its central location within the region, the Neck serves both local transportation needs (to and from activities within the Neck area), as well as regional needs (travel through the Neck area destined for downtown Charleston and other points elsewhere in the region). Travel patterns in the Neck area are influenced by the fact that Charleston's peninsula is a major employment center, institutional hub, and tourism destination for the region and southeastern U.S.

Transit Markets

An important consideration is the relative importance between transit needs at a neighborhood level (circulating within communities in the Neck), local level

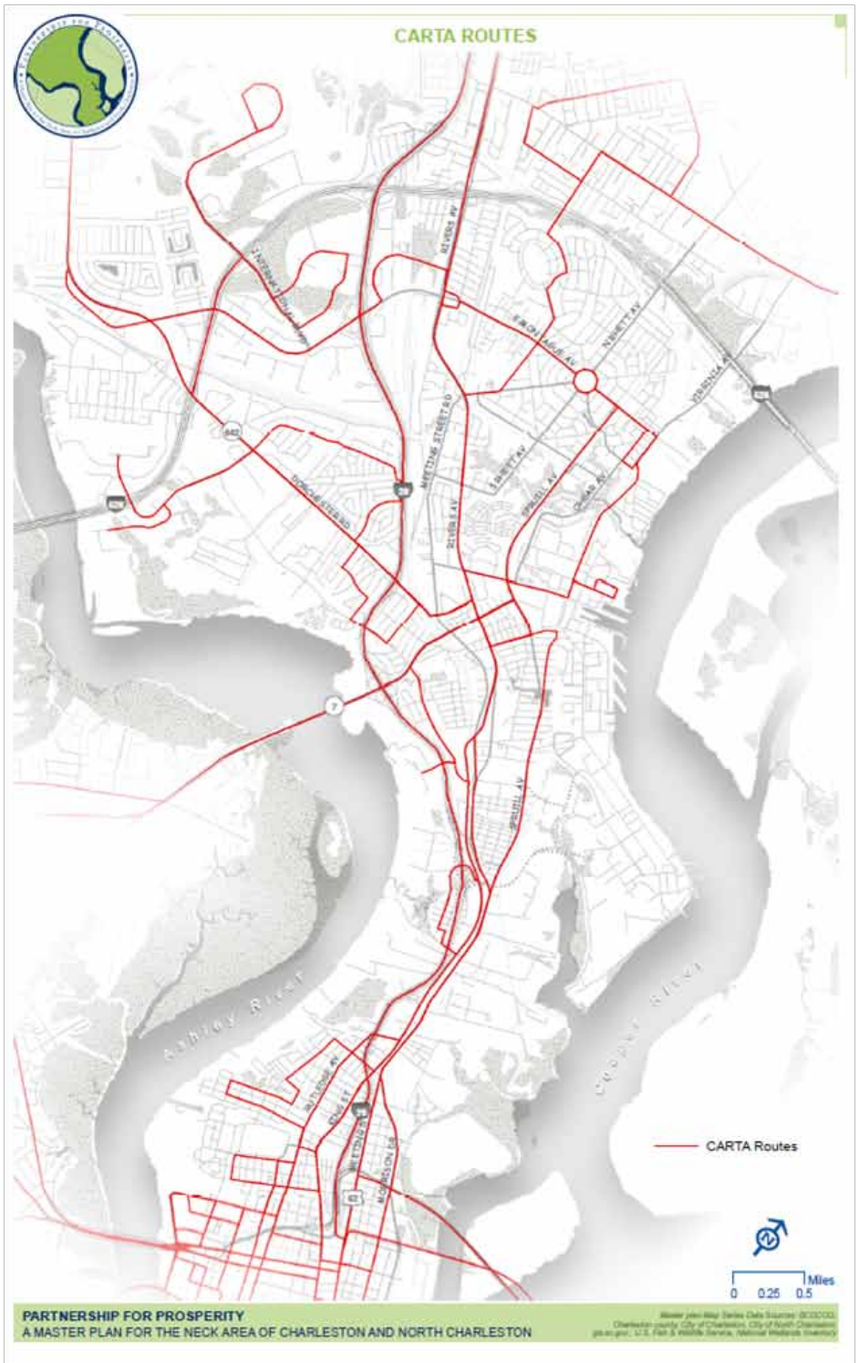
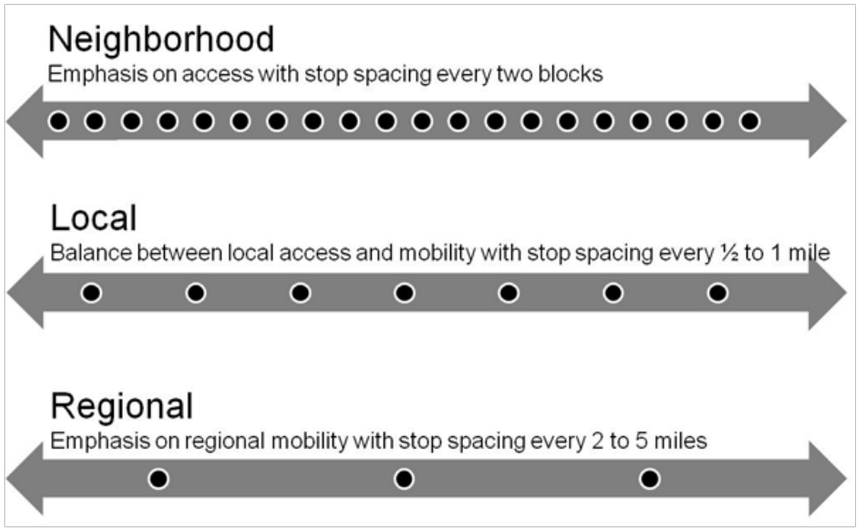


Figure 3.6 CARTA Routes

(connecting destinations within the Neck area), and transit needs at a regional level (traveling from downtown Charleston to destinations beyond the Neck area). Access and mobility set the parameters for these market types. When the availability of transit service is the most important criterion for the population, travel time and convenience are often secondary considerations. Likewise, when there is an emphasis on a quick travel time, access to the service is limited.

The following graphic illustrates the general balance between access and mobility at the neighborhood, local and regional levels.



The local market strikes a balance between access and travel time. By limiting access to key destinations only, travel time can be reduced. This type of service can be attractive to both transit-dependent customers and those who have a choice of using either a private automobile or public transit. This market serves destinations for work and non-work trips throughout the day. For the choice riders to value this mobility option, transit travel times must be competitive with automobile travel times. Providing more premium amenities also attracts passengers who have a choice. Providing visible shelters would be beneficial since fewer stops are needed to serve this market. The local market can coexist with the neighborhood market. For example, services can be overlaid within transit emphasis corridors and stop locations can be shared to allow for easy transfer.

Downtown Charleston offers a high concentration of traditional (8:00 am to 5:00 pm) jobs. The relatively high number of jobs in downtown Charleston and regional travel patterns warrant additional consideration of transit services oriented primarily around the commute-oriented regional market. As parking becomes more constrained in the peninsula and fuel costs continue to rise, more commuters will be encouraged to consider transit options. Focusing on a regional market limited to the typical peak-hour commute trip may provide a viable transit opportunity. To attract choice users on their way to work, transit service must provide an option with desirable travel times, such as the existing CARTA express routes. The frequency of stops is reduced so that trip times can compete favorably with automobile travel times. Centralized transit stations can be served by neighborhood bus feeder services.

Transit service with frequent access is the most important criterion for the Neck area market. A large portion of this market is made up of residents who depend on transit as their primary mode of transportation and often must adapt their daily schedules according to the availability of transit service. Thus, travel time and convenience can often be secondary considerations. For this type of transit-dependent population, a potential major transit investment needs to be justifiable first and foremost on the ability of the investment to meet a high level of transit demand, rather than creating a premium transit service that focuses on just speed and convenience.

INFRASTRUCTURE

The social, economic, and environmental well-being of the Neck area relies on a strong infrastructure that effectively delivers core services to the community. When residents, businesses, and visitors enjoy a safe, supportive, stimulating environment, they can feel secure and thrive, which in turn benefits the community as a whole.

Primary utility drivers have the strongest influence on development activities and include services such as drinking water, sanitary sewer, and stormwater drainage that are usually operated by public entities. Infrastructure upgrades can be very expensive and have long payback periods.

Storm sewers are used to collect surface runoff.

All drinking water (domestic, fire, and industrial) is provided by the Charleston Water System (CWS). CWS currently meets the water demands of existing land uses; however, future land uses will need to be modeled to the system's capacity and distribution capabilities.

Sewer service is divided into two providers - either the Charleston Water System or the North Charleston Sewer District. Both are large public entities with significant infrastructure within the Neck area, including wastewater treatment plants with current capacity. Infrastructure shortfalls are only expected to involve improvements to the local collection systems to get sewage to the trunk lines and treatment plants.

Stormwater is regulated by either the City of Charleston or the City of North Charleston, although development projects also require approval from OCRM-SCDHEC (Ocean and Coastal Resource Management, South Carolina Department of Health and Environmental Control). Stormwater issues are less about infrastructure and more about regulation. Land development is heavily influenced by the local governing regulations, which can control density, retention requirements, and water quality. While the regulations are complex and stringent, they should not be considered oppressive.

Secondary utility drivers include services such as electrical power, natural gas, telephone, and broadband that are usually operated by private, for profit companies. If services are not available to a development site, these utilities can generally be constructed or upgraded to meet the future capacity needs.

Electric power and gas are provided by SCE&G. Telephone is provided by BellSouth. There are multiple providers of broadband service. Because the Neck area is generally developed, it is expected that these utilities are available and will not significantly affect future growth plans.

Utility infrastructure is not anticipated to be a significant obstacle to potential catalyst development in the Neck area at this time, as the area is generally fully developed and has an extensive existing utility network to support previous development associated with the Naval Base, industry and the current land uses. However, research into network capacities will still be needed as future alternative scenarios are proposed to assess the capacity and condition of services.

OPEN SPACE

Open space contributes to the health and quality of life for residents, promotes community sociability, provides a variety of recreational and educational activities for all ages, and helps preserve and enhance the natural environment.

Passive-based open space emphasizes enjoyment of a natural resource or activity and not competition or

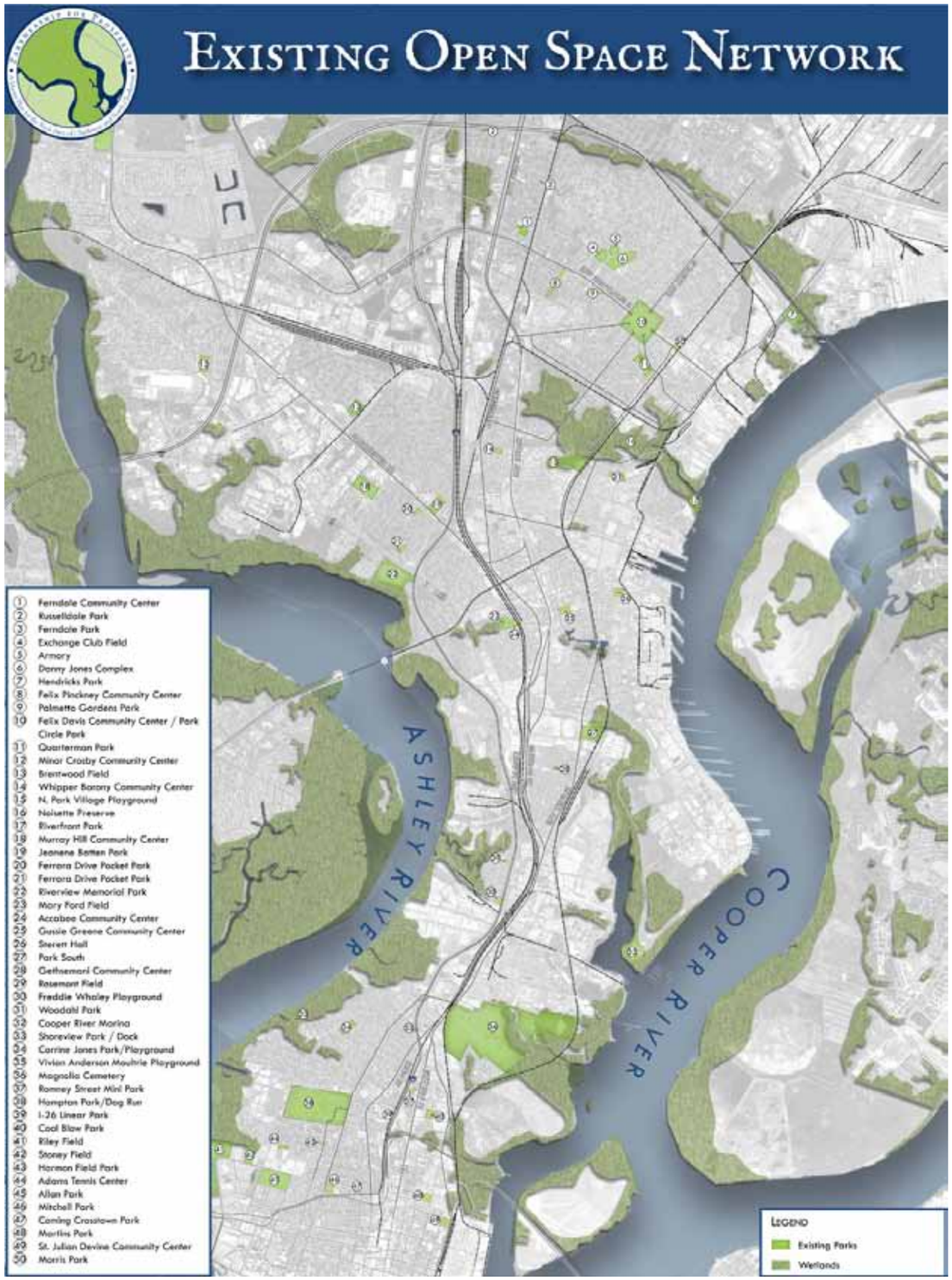


Figure 3.7 Existing Open Space Network (See Appendix A pg. 204)

participation. Facilities may include picnic tables, benches, observation areas, gardens, historic or cultural sites.

Active-based recreation uses promote participation and rely on the presence of facilities that enable certain activities to function. User-oriented activities may include baseball, football, soccer, basketball, and tennis. Resource-based activities include hiking trails and water-related pursuits.

A variety of open spaces exist within the Neck area (see **Figure 3.7**). These areas fall into several broad categories that have been described below. In order to fully understand how these open spaces function within the Neck area for planning purposes, facilities must not only be looked at individually, but how they connect and contribute to the system as a whole. A complete inventory of Open Space Facilities can be found in **Appendix C**.

Parks

Parks are the basic unit of the open space system and serve as the recreational and social focus of the community. Parks should accommodate a wide variety of age and user groups, with a focus on both informal active and passive uses.

Athletic Fields

Fields are areas prepared for the play of organized sports and games and include both grassed ground (such as baseball, softball, and football fields) and hard court areas (such as basketball, tennis courts, tracks, and hockey rinks).

Playgrounds

Playgrounds are designed to provide both active and passive uses, usually with distinct play areas and equipment for preschool (ages 2-5) and/or school age children (ages 5-12) and informal recreation for all ages. They are often located adjacent to an elementary school.

Shared Use Paths / Trails

For purposes of this inventory, trails (more accurately known as shared use paths) for recreational use include only off-road multi-use trails. On-street facilities are included in the bicycle/pedestrian network.

Community Centers

Community Centers are indoor meeting places used by members of the community for cultural, educational, social, or recreational (such as swimming pools, gyms, and weight training facilities) purposes.

Special Use Facilities

The Special Use classification covers a broad range of recreation facilities oriented towards a single-purpose use.

Natural Spaces

Natural open space areas consist of landscape set aside for the purpose of preservation or conservation of natural resources, natural features, buffering, or scenic/aesthetic value.

Schools

Schools also provide a variety of open spaces for recreational purposes and are usually available for community use during non-school hours.

Although there are a variety of routes to get from one open space area to another along the street network, as discussed below in the bicycle/pedestrian system section, there are gaps in the network that prevent clear and safe mobility options for many users.

Bicycle and Pedestrian Network

There are many important nodes and destinations within the Neck area such as schools, neighborhood services, libraries and other civic uses, churches, parks, recreational facilities, and employment centers that provide focal points for non-motorized travel. An on- and off-road network provides connections for people who walk or bicycle for transportation. Convenient and attractive routes for pedestrians and bicyclists form a major component of the transportation system, but are often viewed as an afterthought rather than as a priority. This is especially true in the Charleston Neck area, where a large share of the population often must rely on transit or non-motorized means of travel to reach their destinations. Mobility choice is not complete until a full range of safe and convenient routes and facilities are available to all parts of the community. Connectivity is the foundation of a pedestrian-friendly environment and a commitment to support alternative modes of transportation.

Overall, the sidewalk system within the Neck area lacks connectivity, even making the assumption that it is not necessary to have sidewalks on every street – there are some areas that pedestrians simply are unlikely to walk (see **Figure 3.8**). There are many gaps in the sidewalk network. Missing sidewalks force pedestrians to either cross the road back and forth or travel in the right-of-way or shoulder of the road. This situation further impedes people with disabilities, the elderly and children, who are the most vulnerable road users. The majority of residential streets do not have sidewalks and shoulder areas are limited due to narrow streets and open drainage systems.

Where sidewalks do exist, they are often in disrepair or lack regular maintenance.

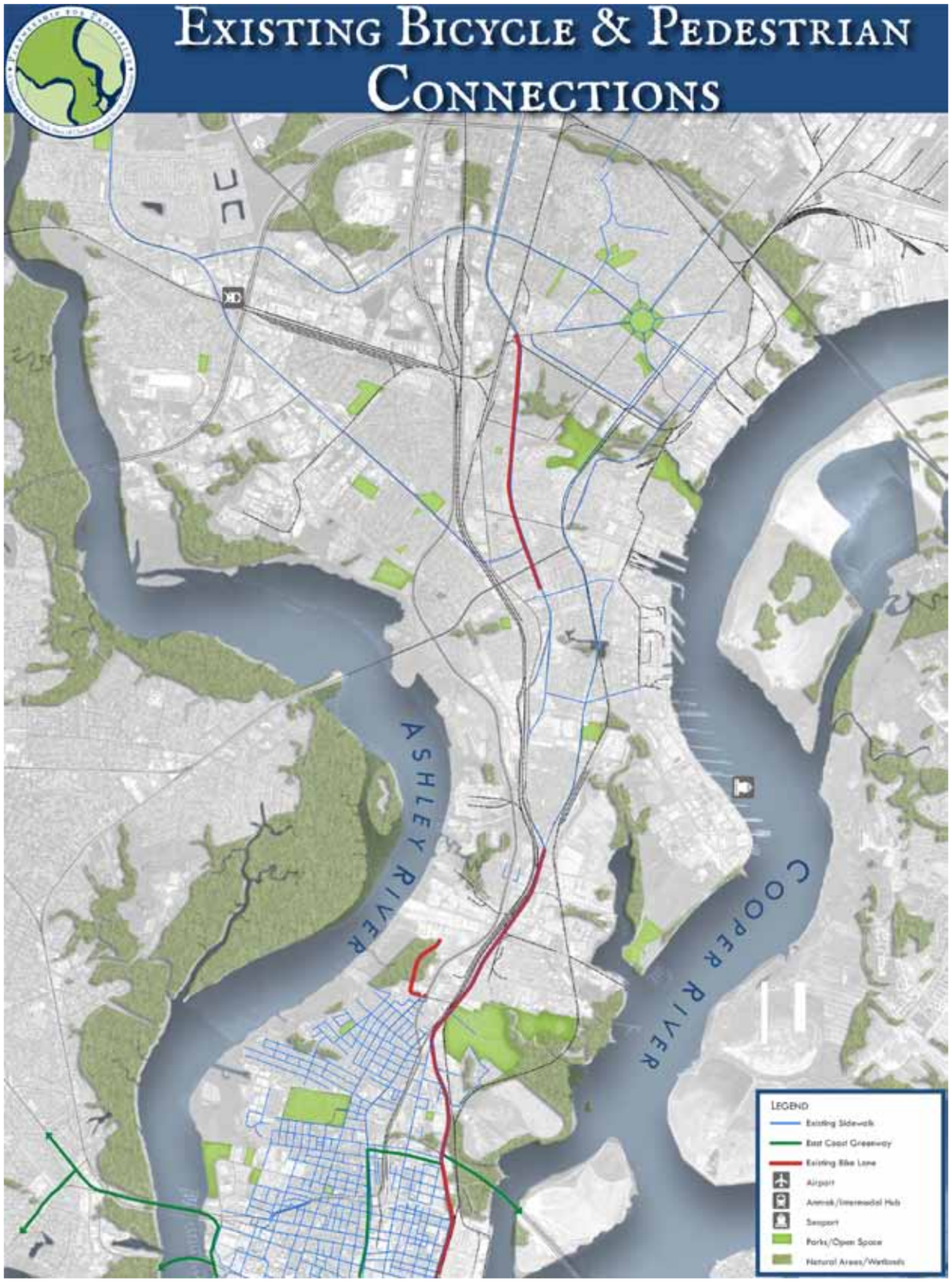


Figure 3.8 Existing Bicycle and Pedestrian Network (See Appendix A pg. 205)

Potholes, recessed manhole covers, poor repair work, curb damage, overgrown vegetation, and other hazards affect the safety of bicyclists and walkers. Factors that contribute to the comfort of users include the width of sidewalks, quantity of curb cuts, lateral separation from the travel lane and presence of buffers (street trees, parked cars, planting strip), adjacent roadway volume and speed, pedestrian crossings (markings and widths), road signalization, shade, and security lighting.

Facilities for bicyclists are not consistent throughout the area (see **Figure 3.8**). There are few bicycle paths or trails and only short segments of roadways with bicycle lanes, notably on Rivers Avenue near McMillan Drive. Safety and accessibility for bicyclists represents a significant challenge, given the volumes and high speed of traffic passing through the street network, the lack of east-west street connectivity, and the number of railroad crossings.

The bicycle and pedestrian network is most complete in the southern areas of the Neck where the established neighborhoods provide a more continuous local street network. Newer development in the northern areas has been designed to accommodate bicyclists and pedestrians with roundabouts, shorter crossing distances, and high-visibility crosswalks. However, in the older neighborhoods, the streetscape has generally been designed without sidewalks, bike lanes, pavement markings or other accommodations for bicycling or walking.

GOODS MOVEMENT

SIGNIFICANT ROADWAYS

The current highway system for freight, goods, and services (see **Figure 3.9**) consists of the same network open to the general traffic. The absence of a planned "commercial vehicle friendly" network has contributed to commercial vehicle usage of numerous roadways and conflicts between the motor carrier, community and residents.

These conflicts represent concerns over truck-automobile road sharing, safety concerns related to truck-pedestrian interaction, environmental aspects of truck traffic on communities, and the presence of trucks on multi-use corridors without appropriate design. This latter point

Figure 3.9 Roadway System by Amalgamated Designations

draws into conflict pedestrian and bicycle traffic, with trucks operating on roads with narrow lanes, no sidewalks, or other designated surfaces to either segregate or manage truck and other traffic. In contrast, a "commercial vehicle friendly" roadway design may include some or all of the following:

- Thirteen (13) foot lanes;
- Absence of roundabouts or adequately designed roundabouts;
- Intersections with adequate turning radii;
- Reduction or absence of signaling, or where present, appropriately managed for truck traffic;
- Wide shoulders or pullouts for commercial vehicle usage, and
- Reduced grades and elimination of super-elevated curves.

These designs may be reflected in specific functional class designs and constructed roadways. The Federal Highway Administration (FHWA) describes the general functional classes of lesser design than interstate and freeways, as:

Functional System	Services Provided
Arterial	Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control.
Collector	Provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials.
Local	Consists of all roads not defined as arterials or collectors; primarily provides access to land with little or no through movement.

Source: http://www.fhwa.dot.gov/environment/flexibility/ch03.cfm, *January 01, 2011*

The resulting mobility and access evolves as traffic is disbursed on the three functional types, with arterials providing the greatest mobility with the least amount of access, through local roadways with greater access though significantly reduced mobility.

Historical purpose and diverse land use patterns adjacent to roadways in the Neck area have led to a variety of multiple functional class attributes along the length of many roadways. An illustrative corridor commonly referred to as a route used heavily by trucks, Azalea Drive, contains:

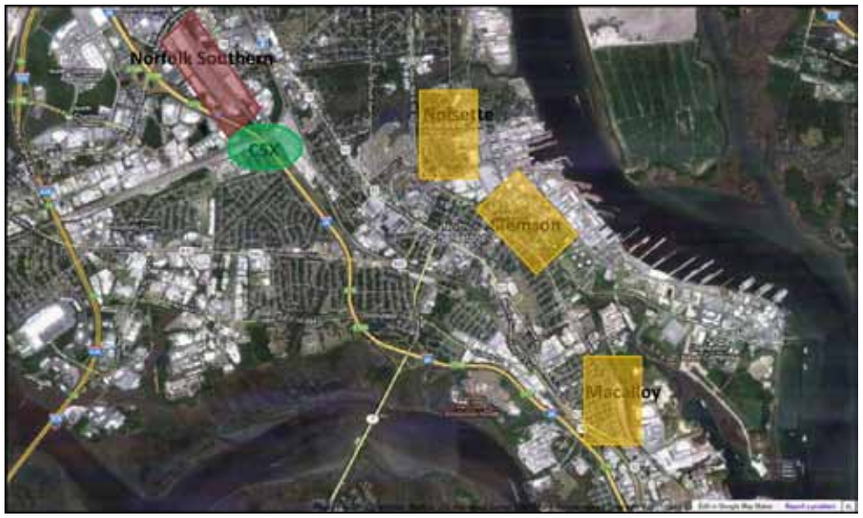
- Segments of two and four lanes;
- Presence and absence of shoulders;
- Lengths marked by greater and lesser distances between signaled and non-signaled intersections, and
- Flanked by adjacently assigned residential and industrial land use parcels.

With this combination of characteristics along the same roadway, its functional classification is not adequately described by a singular class designation. In recognition of this common occurrence, roadways are classified using a modified classification designation of interstate, a combination of freeway and arterial, and a combination of arterial and collector attributes, and local significant roadways.

The final class, local, is not illustrated. These segments are present in significant number in residential and densely built up areas, and their use in the Neck freight mobility plan would be expected to serve as the final "yard" access route.

Significant Railroads

Primarily servicing port traffic, both Class I railroads currently operate intermodal facilities, as shown on **Figure 3.10**. These provide the multi-modal movements between truck and rail. In all but Wando Welch, rail service is potentially available via the SC Public Railway. Many of the container movements to the existing intermodal terminals are performed by truck. The new Naval Base



Source: Google Maps, January 09, 2011

Figure 3.10 Intermodal Facilities

Terminal plan seeks a future location for an intermodal yard. Three potential sites are under consideration, though none have been selected (see **Figure 3.10**). These are Noisette, Clemson, and Macalloy. The Noisette and Clemson locations present some significant challenges with respect to land use compatibility and dispersion of truck traffic into more of the Neck area.

Significant Port Facilities

The South Carolina State Ports Authority (SCSPA) operates six facilities, five of which are located in the Port of Charleston, most in or near the study area. The sixth is located at the Port of Georgetown in Georgetown, SC, approximately 60 miles north of the Neck area. A new facility, the Navy Base Terminal, also in the study area, has been permitted and is under construction.

Commodity movement, by volume, through these combined ports is displayed in **Figure 3.11** and represents a variety of industrial and commercial supply chains. These supply chains are not solely driven needs within the state, but needs identified with ventures several states distant. The attractiveness of these ports is a combination of geographical proximity and the efforts by the port itself to capture individual freight flows. The number two import commodity, auto parts, is an example of both cases. A significant portion of the category supports the in-state automotive manufacturer, BMW, in the Greenville-upstate area. Another major segment supports Mercedes Benz assembly operations in Tuscaloosa, AL. Though other ports, e.g., New Orleans or Mobile may provide closer proximity, a partner effort by the SCSPA, local carriers, and supply chain professionals have produced a transportation service product that satisfies the operation's need for reliable service at a cost point that, in combination, exceed those services from other ports.

Charleston top 20 Export Commodities		
	Total Exports	100%
Rank	Total Top 20	63%
1	PAPER&PAPERBOARD,INCL WASTE	19%
2	WOOD PULP	8%
3	AUTO PARTS	4%
4	LOGS&LUMBER	3%
5	FABRICS,INCL.RAW COTTON	3%
6	GENERAL CARGO,MISC	3%
7	SYNTHETIC RESINS,NSPF	2%
8	MIXED METAL SCRAP	2%
9	UNCLASSIFIABLE CHEMICALS	2%
10	POULTRY,CHIEFLY FRESH&FROZEN	2%
11	AUTO&TRUCK TIRE&TUBES	2%
12	FOAM WASTE&SCRAP	2%
13	MACHNRY MISC,CASETTE PLAYERS	2%
14	AUTOMOBILES	2%
15	GRAPEFRUIT&LEMONS	1%
16	LAWN&GARDEN EQUIP	1%
17	PLASTIC PRODS, MISC	1%
18	FURNITURE	1%
19	MEDICAL EQUIP&SUPPLIES	1%
20	PLASTICIZERS	1%

Charleston top 20 Import Commodities		
	Total Imports	100%
Rank	Total Top 20	50%
1	FURNITURE	7%
2	AUTO PARTS	6%
3	SHEETS,TOWELS,BLANKETS	5%
4	FABRICS,INCL.RAW COTTON	3%
5	AUTO&TRUCK TIRE&TUBES	3%
6	GENERAL CARGO,MISC	3%
7	MENSWEAR	3%
8	APPARELS,MISC.	2%
9	WOMEN'S&INFANTWARE	2%
10	PAPER&PAPERBOARD,INCL WASTE	2%
11	HOUSEHOLD GOODS	2%
12	FOOTWARE	2%
13	YARNS,MISC.	2%
14	PLASTIC PRODS, MISC	1%
15	STAPLE FIBRES	1%
16	MACHINERY PARTS,MISC	1%
17	LOGS&LUMBER	1%
18	MEDICAL EQUIP&SUPPLIES	1%
19	HARD WARE,MISC	1%
20	ENGINES,MOTORS,&PARTS	1%

Figure 3.11 Top Exports and Imports for the Port of Charleston

Container traffic at the Port of Charleston has steadily increased as the world's reliance on this carriage type has grown (Figure **3.12** and **Figure 3.13**).

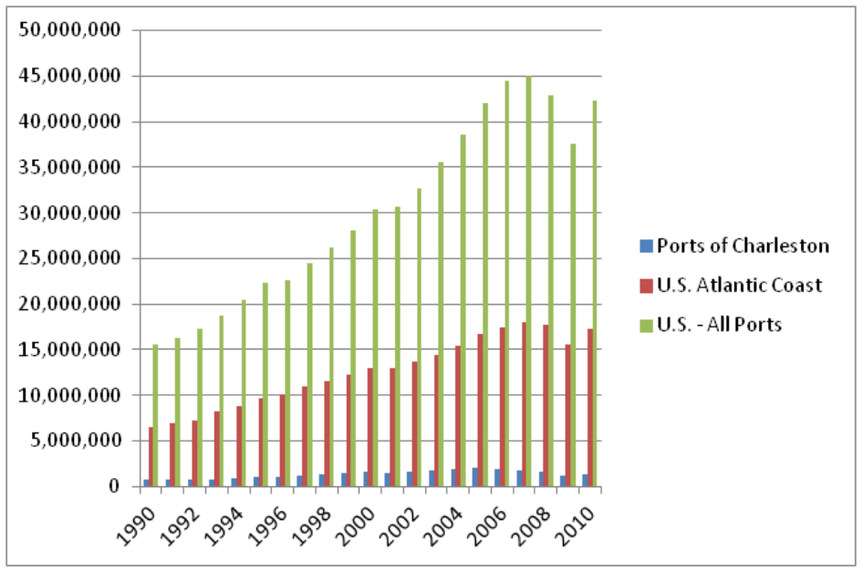


Figure 3.12 Port of Charleston, US Atlantic Coast Ports, and Total US Ports Container Volume

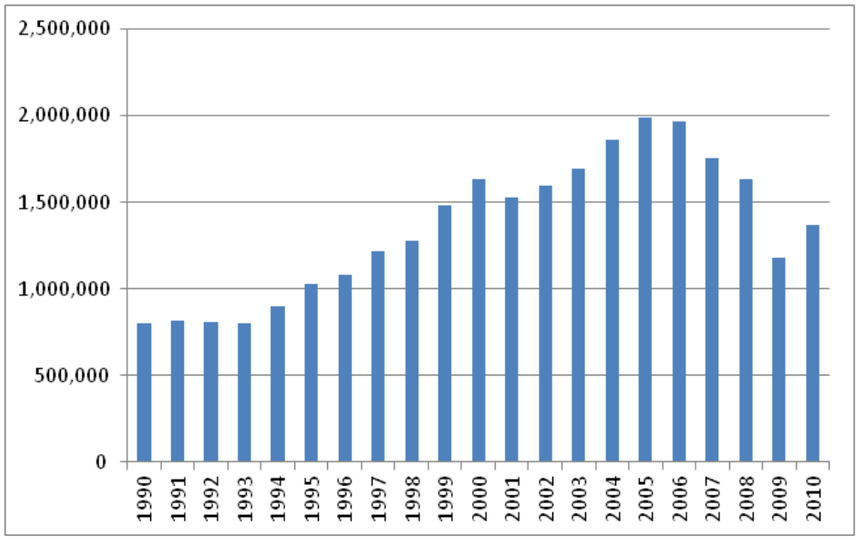


Figure 3.13 Port of Charleston Container Volume (Detail of Figure 4.12)

The drayage or truck trips associated with this increasing container movement will impact the study area.

The Port of Charleston is preparing for the growth of trade in the coming decades through four strategic priorities – infrastructure development, cargo growth, productivity and efficiency and financial sustainability – that provide the framework for the port's success. The location of the port facilities discussed below is shown in **Figure 3.14.**

Wando Welch Terminal

The Wando Welch Terminal is a common use terminal, primarily serving container traffic needs. The largest of the SCSPA ports, the terminal has 12 post-panamax cranes; four with 145 to 146 foot outreach and eight with 190 to 197 feet.

On-site rail service is unavailable. Not physically located on the peninsula, associated truck traffic with this terminal must funnel into the Neck area via I-526. Though traffic may subsequently exit the area by I-26, never accessing North Charleston's local roadways, the containers seeking rail movement must do so to gain access to CSX or NS intermodal yards. One way truck trips to the CSX and NS Intermodal yards are 14 and 13 miles, respectively. Other pertinent data is included in **Figure 3.15**.

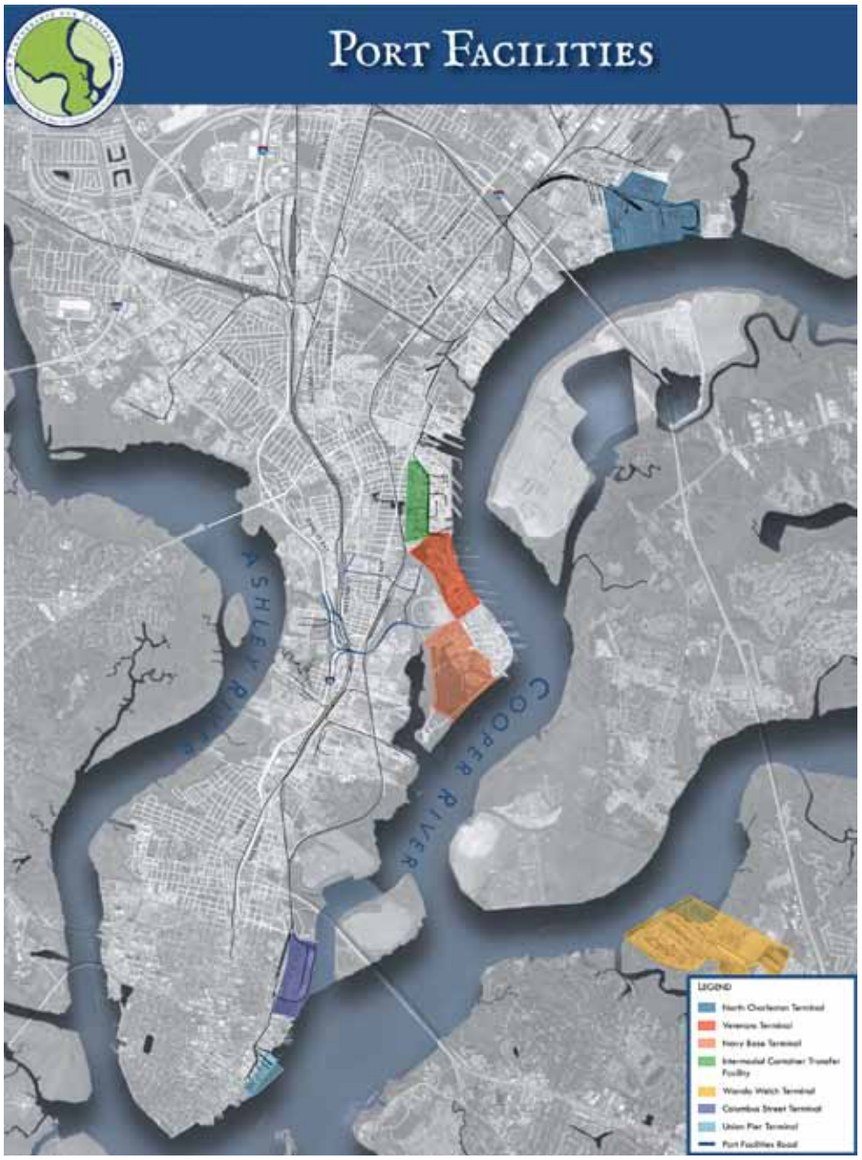
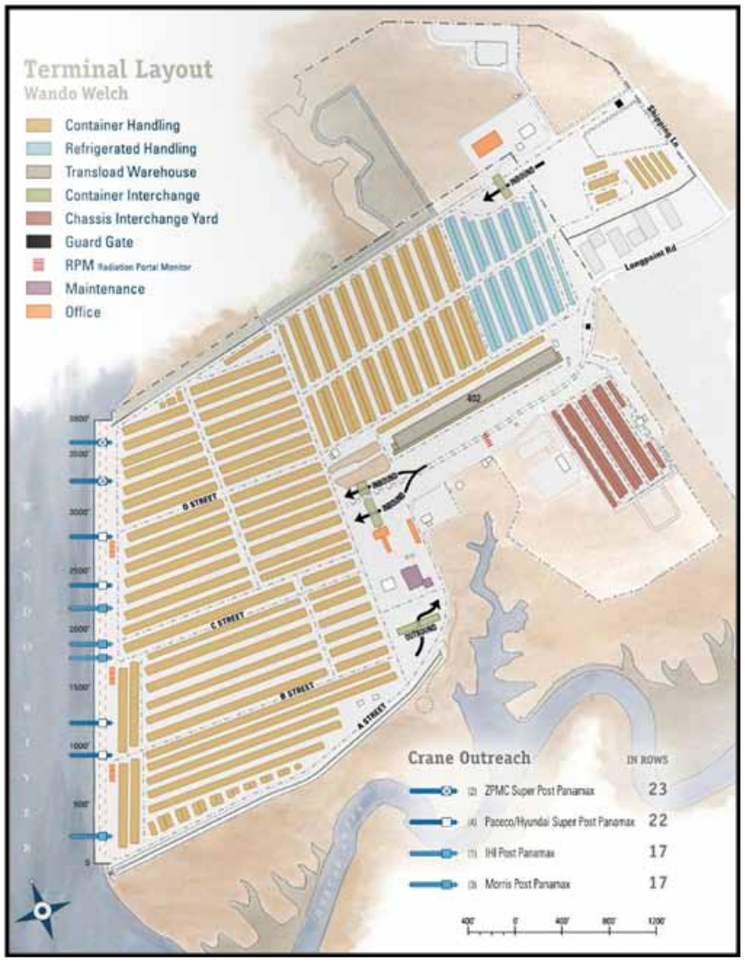


Figure 3.14 Mount Pleasant and Charleston, SC Port Facilities (See Appendix A pg. 251)



Source: http://www.port-of-charleston.com/About/publications/portguide.asp, January 09, 2011

Figure 3.15 Wando Welch Terminal Layout

Source: http://www.port-of-charleston.com/About/publications/portguide.asp, January 09, 2011

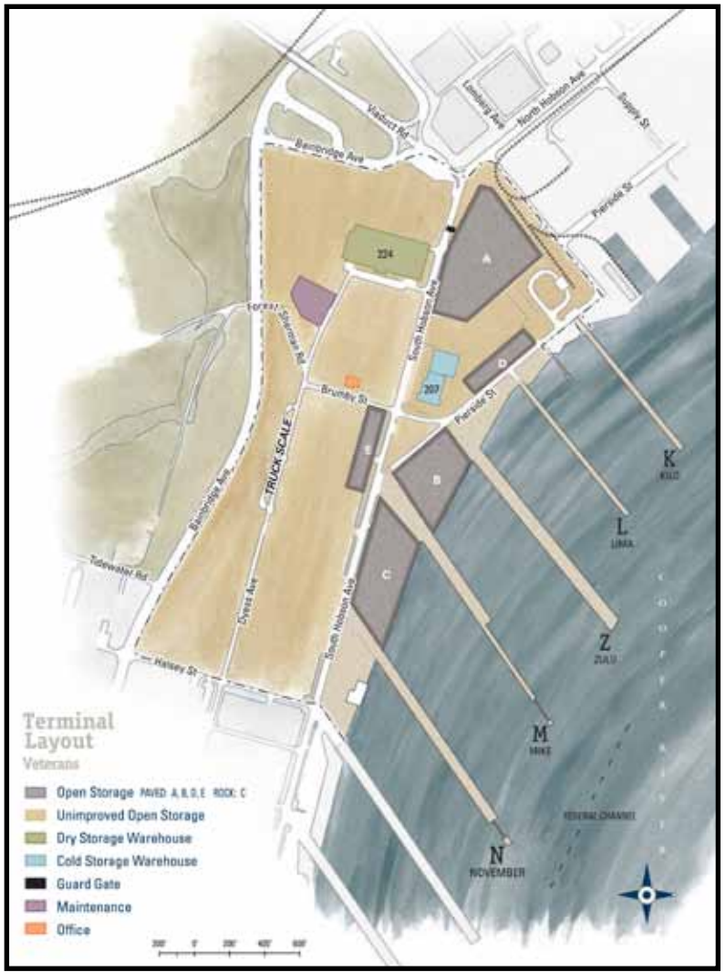
Figure 3.16 North Charleston Terminal Layout

North Charleston Terminal

The North Charleston Terminal is a 200 acre modern container handling facility with an on-terminal container freight station and rail yard. It has over 19,650 grounded and 2,300 wheeled container slots, as well as 380 refrigerated container slots and 14 interchange lanes/gates. The terminal's six post-Panamax designed cranes can each perform 40 moves per hour, creating a truck turnaround time of just over 20 minutes. Four of the cranes have a 145 foot outreach and the remaining two cranes have a 196 foot outreach. Additional terminal layout information is presented in **Figure 3.16**.

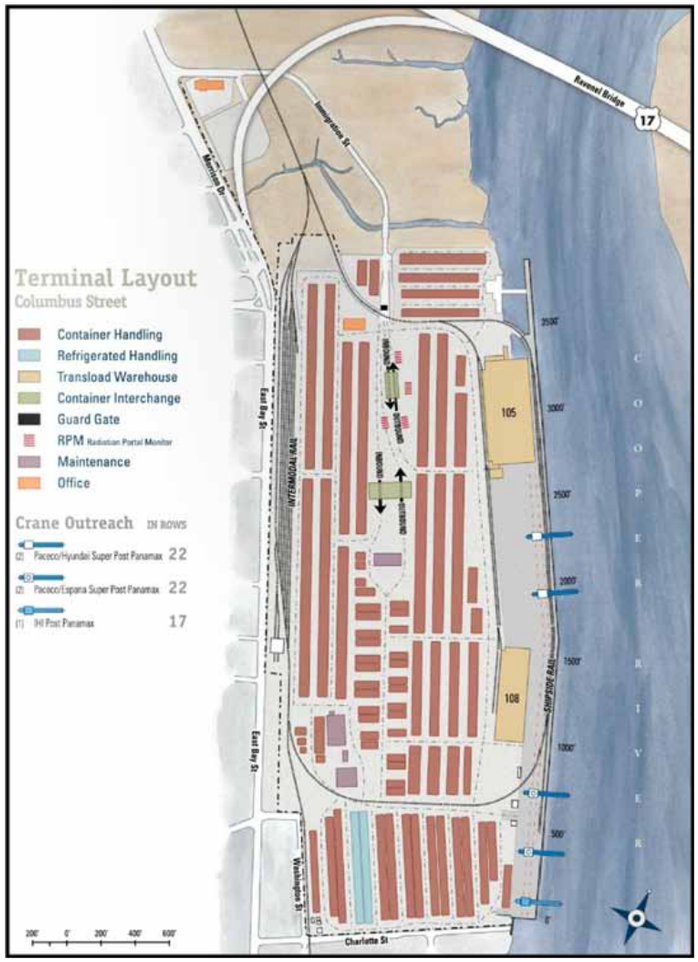
Veterans Terminal

The Veterans Terminal is a 110 acre fully secured dedicated bulk, breakbulk, ro-ro and project cargo facility. It can provide long term outside storage in dedicated yard space, both paved and rock base. It also has covered sprinkler protected warehouse space, with over 42,800 square feet of cold storage space and 54,200 square feet of dry storage space. The mobile cranes can provide truck lift directly to ship, rail to storage yard or truck to storage yard. Additional terminal layout information is presented in **Figure 3.17**.



Source: http://www.port-of-charleston.com/About/publications/portguide.asp, January 09, 2011

Figure 3.17 Veterans Terminal Layout



Source: http://www.port-of-charleston.com/About/publications/portguide.asp, January 09, 2011

Figure 3.18 Columbus Street Terminal Layout

Columbus Street Terminal

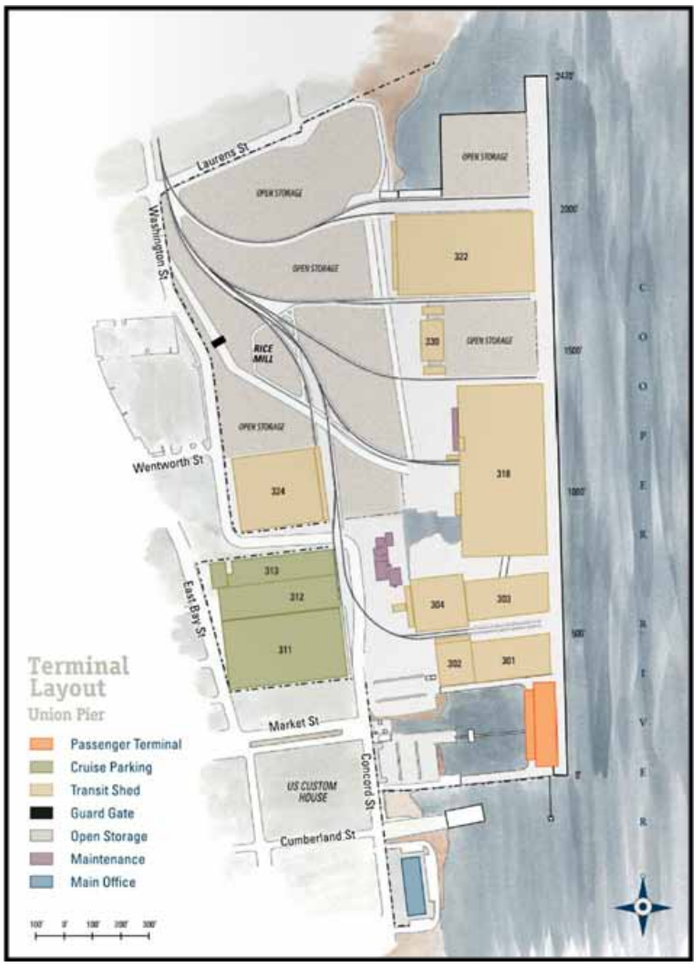
The Columbus Street terminal provides Ro-Ro[1], breakbulk, and services to handle project cargo. Operating on 135 developed acres, of the total 155, this terminal has approximately 44 acres for Ro-Ro staging, 25 for breakbulk, and 11 for rail yard activities. There are three total cranes, with 2 of post-panamax design. These two have a 145 foot outreach with the third at approximately 114 feet. There are two warehouses providing a total of 259,149 square feet, with each having covered rail access. Additional terminal layout information is presented in **Figure 3.18**.

1 Ro-Ro: Roll-on, Roll-off, service typically associated with automobile, rolling equipment, and other single unit cargo.

Union Pier Terminal

Though associated primarily with passenger service provided by the cruise ship industry, this terminal provides significant Ro-Ro and breakbulk capabilities. Serviced by SC Public Railways, much of the breakbulk and automobile traffic is served by a combination of truck and rail. It is set up to handle traditional non-container freight such as forest products, metals and equipment. Covered storage is available within the 500,000 square foot facility. This terminal is the closest to open sea sailing (less than one hour), though not significantly closer than Columbus Street. Additional terminal layout information is presented in **Figure 3.19**.

The City of Charleston and SC State Ports authority have created a conceptual plan for the redevelopment of Union Pier Terminal. The cruise terminal will move to



Source: http://www.port-of-charleston.com/About/publications/portguide.asp, January 09, 2011

Figure 3.19 Union Pier Terminal Layout

Source: http://port-of-charleston.com/UnionPierPlan/index.html

Figure 3.20 Union Pier Terminal Conceptual Master Plan

the north end of the site, which will improve traffic circulation and where parking, ground transportation and service areas can be accommodated adjacent to the terminal. The area will be reconnected with the historic downtown by extending existing city streets to the water, introducing mixed use and civic development, restoring the wharf and public landing, and creating a green natural shoreline. Current cargo operations will be relocated to other Ports Authority facilities. The proposed Concept Plan is presented in **Figure 3.20**.

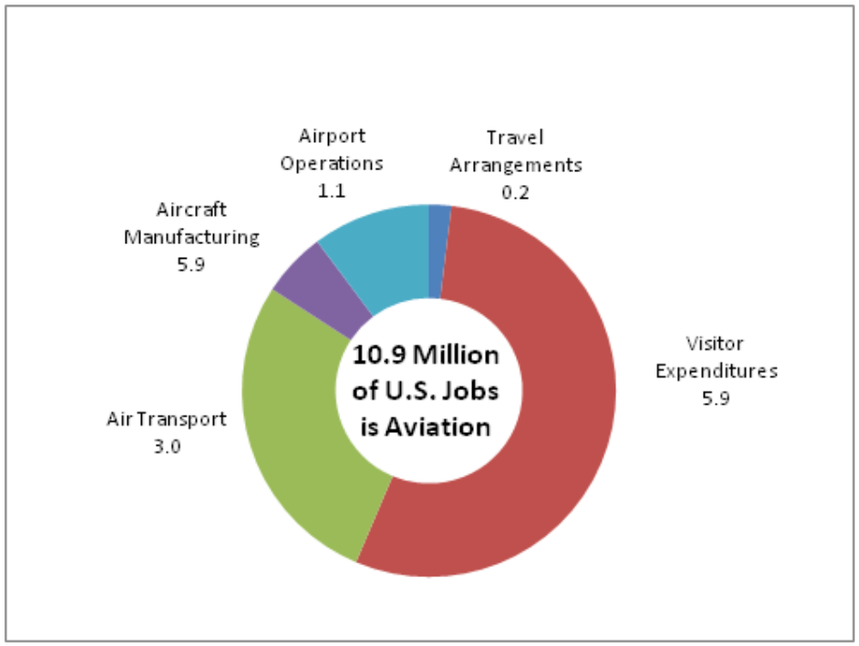
Navy Base Terminal

The SCSPA is building a new port facility on the southern end of the former Charleston Naval Complex. It is the only new container terminal currently permitted and under construction on the U.S. East and Gulf coasts. It is designed exclusively for container cargo and will have cargo support marshalling areas, processing areas, and handling facilities. At build out, the 280 acre facility will increase the total container capacity in the Port of Charleston by 50%. The first phase, approximately 171 acres, is scheduled for completion in 2018, although that date could be moved up if container capacity is needed earlier. The terminal will have a dedicated port access road connecting to I-26.

SIGNIFICANT AIR CARGO FACILITIES

In 2009, the aviation industry across all components contributed $731.5 billion to the national GDP[2] . The national aspects of aviation employment impacts are as significant, as shown on **Figure 3.21**.

2 Air Transport Association 2010 Economic Report, http://www.airlines.org/Documents/economicreports/2010AnnualReport.pdf, December 21, 2011



Source: Air Transport Association 2010 Economic Report, Air Transport Association,

Figure 3.21 Employment by Aviation Industry Component, U.S. 2009

The impact of just one component, aircraft manufacturing, is a key to the future economic growth of the Neck area.

Where airport operations service the needs of passenger traffic, an extension of that service provides transport for air cargo. Air cargo is used to accelerate transport times for high value or perishable items. High technology, e.g. computer components and cell phones can minimize capital investment by rapidly moving components and finished assemblies from the manufacturer or assembler to the consumer. In not simply presenting items for sale, these same entities employ air cargo to bring the latest technologies to the market quickly, meeting consumer demands more timely than water or other surface transport is capable. Perishable foodstuffs and flowers transported from one continent to another require timely service to minimize spoilage. Additionally, supply chain professionals utilize air transport to fulfill both planned transport of materials, assemblies, or finished goods to satisfy the overall supply chain plan, and to offset shortages until larger piece shipments may arrive by other modes.

This employment of air as a modal staple takes three distinct forms:

- True air transport: Goods are transported by aircraft from one airport to another, with a surface component providing first and final mile service. This may take one of two forms:
  - o "Belly" transported in the cargo or luggage area onboard passenger aircraft
  - o Dedicated, where aircraft is solely transporting goods
- Truck-air hybrid: Goods are transported for a segment of the total trip by truck, and then utilize aircraft for the remaining segment. Found in many of the common air carriers; FedEx, UPS, etc where transit time may still be met while engaging a lower cost alternative for a part of the total trip.
- Deferred air product: Not truly an air cargo type, by actual mode. This utilizes a schedule of truck movements to mimic high speed air transit, offering longer actual travel times, at lower than air rates, but overall, a transit time that is highly reliable and faster than traditional truck movement.

Lower Hold or "Belly" Cargo

Commercial airline service attracts and collects additional revenue through the taking onboard of goods transported in the luggage compartments. The reduction in overall passenger aircraft fleets, move to a more standard passenger airframe, and scheduled airfreight flights in the U.S. domestic market have a limiting effect on this overall market with about 10 percent of air cargo traveling in this manner.

The airlines serving the Charleston International Airport (CHS) as of June 30, 2011, include American Eagle, Continental, Delta, Southwest, Jet Blue, United Airlines and US Airways. Atlantic Southeast Airlines, Chautauqua, Comair, Compass, Pinnacle Air, and Shuttle America operate as regional carriers for Delta. Air Wisconsin, Chautauqua, Mesa Jet, PSA, and Republic Airlines are regional carriers operating as affiliates of US Airways. Atlantic Southeast Airlines, Express Jet, Mesa Jet, SkyWest, and Trans States are regional carriers operating as United Airlines. Continental Express Jet and Chautauqua are regional carriers operating as Continental.[3] All of these carriers transport passengers and cargo to an air hub, prior to flying to the destination airport. This lack of direct flights is also a limiting factor to using air cargo at CHS.

Dedicated

This segment is serviced by aircraft transporting goods solely on the given trip. This form of locally available air cargo has increased in volume with the transfer from passenger to air mail service. These may be divisions of larger passenger, components of truck-air hybrid, or charter air carriers.

3 Charleston County Airport District, Report on Financial Statements, For the Years Ended June 30,1011 and 2010, http://www.chs-airport.com/About-the-CCAA/CCAA-Reports/Financial-Reports.aspx. December 21, 2011

Truck-Air Hybrid

Although FedEx Express and UPS may be considered in the category of dedicated air carriers, these are also proponents of the hybrid model. Sold as air serviced cargo, within origin-destination pairings where the local station lacks shipment density, cargo is placed on trucks to be transported to the closest designated air hub. This network allows for near air transit times to be provided to all markets while maintaining a cost and invoice level that provides value to the provider and consumer.

Deferred Air

As noted, this is not a true air cargo product. Air forwarders, e.g. Forward Air, establish a more cost burdened schedule of truck movements to provide a highly reliable and timely product. Marketed as air, this is at the extreme margins of service oriented truck service. In the simplest form, this cargo is never placed aboard an aircraft.

Local Air Cargo Service

The North Charleston area is served by two airports; Charleston International Airport and the Charleston Executive Airport, as shown on **Figure 3.22**.

Source: Air Transport Association 2010 Economic Report, Air Transport Association,

Figure 3.22 Significant Airports Servicing Charleston Area

The latter is not located in the area, but provides air services for business aircraft and recreational flyers. No air cargo, charter or otherwise are operated from this field.

The Charleston International Airport maintains two areas in support of air cargo; a 21,000 warehouse for transload or storage and a concentrated area where air cargo and freight forwarders maintain individual operations. The airport is a joint base of US Air Force Airlift operations and civilian based aircraft. The USAF owns and operates all runways and associated taxiways, except where those taxiways are associated with the civilian terminal. The Charleston County Aviation Authority owns and operates these and the civilian terminal. As a result, this airport has extensive runway capabilities (see **Figure 3.23**).

Runway & Approach Info for KCHS

Rwy	Length	Land Dist Avail**	Rwy	Length	Land Dist Avail**	Approach*
03	7000x150	7000'	21	7000x150	7000'	
15	9001x200	9001'	33	9001x200	9001'	ILS 108.90 - 334°

* only ILS, LOC, LDA, and SDF approaches to a specific runway are shown
** For any Declared Landing Distance Available, please see A/FD or Approach plates

Runway Weight Capability (lbs.) more info on Runway Weight Capability

Runway ID	Single Wheel	Double Wheel	Double Tandem Wheel	Dual Double Wheel
03/21	125,000	275,000	350,000	775,000
15/33	125,000	275,000	350,000	775,000

These numbers are Advisory and are not limits. The Airport Manager should have more accurate Weight Limits
Please email Support@FltPlan.com for further information.

Source: www.fltplan.com, January 09, 2011

Figure 3.23 Runway Data for the Joint Base, Charleston SC

With these capacities, the airport can handle up to the AN-124 (see **Figure 3.24**), a Russian-designed cargo aircraft, which is the largest production aircraft in the world. Though not associated with the current Charleston Boeing plant, Boeing does contract a Russian-based air cargo company operating AN-124's to transport oversize aircraft components. This aircraft is also used to transport GE90 engines, turbofan engines manufactured by General Electric for Boeing's 777 Airliner.

US domestic air cargo activity has experienced a decrease over the past two years. Reported in Boeing's World Air Cargo Forecast 2010-2011, with maturity, air cargo markets find volumes relatively flat or slightly decreasing. The U.S. domestic market, as such a market, has observed a 9.7 percent decrease in 2008 and 12.4 percent decrease in 2009. These decreases have occurred in the face of a general decline in air cargo with the world economic downturn.

CHS, in addition to a significant decrease in mail cargo, as explained earlier, has experienced similar trends, as shown on **Figure 3.25**. Inbound, or deplaned, air cargo volumes have reflected an alternating history of annual tonnage gains, with 2011 projected to be somewhat less that the 2009 high of over 18 million pounds. Outbound, or enplaned, has continued to grow steadily with 2011 to be

Source: http://mediaarchive.ksc.nasa.gov/detail.cfm?mediaid=37693, NASA

Figure 3.24 AN-124, World's Largest Production Aircraft

	MAIL (LBS)		FREIGHT (LBS)	
	Enplaned	Deplaned	Enplaned	Deplaned
2011*	0	3,692	4,699,160	13,764,208
2010	400	1,703	5,948,163	15,592,909
2009	119	2,922	5,305,656	18,270,824
2008	201	2,311	4,366,232	14,942,868
2007	37	3,641	4,187,629	16,480,551
2006	18,621	25,636	2,720,105	13,005,222
2005	2,489	46,231	1,432,239	13,464,555
2004	115,393	147,903	1,329,988	12,127,778
2003	272,501	171,615	1,367,518	9,511,442

* 10mos, Jan-Oct 2011

Figure 3.25 Tonnage, Enplaned-Deplaned, Charleston SC

at or slightly below the high of 2010.

Excluding the expected drop in mail tonnages, the total air cargo trend is one of growth for CHS through 2010. **Figure 3.26** illustrates this trend with 2011 figures

Figure 3.26 Tonnage, Excluding Mail, Air Cargo for Charleston SC

for the first ten months. A project total is applied and will mark the first year of a potential reversal of this trend since 2003.

Significant Freight, Goods, Services Facilities

A working freight mobility plan provides not only local access to individual locations of freight intensive activity, but includes the travel needs of units moving into, out, and through the area. Commercial vehicles require access to the retail, wholesale, commercial and industrial facilities in the area to support the maintenance and growth of those jobs and revenues represented by these locations. As that activity may be concentrated in specific areas and along a finite set of roadways, a review of those roadways for greater significance is desirable. Where these roadways support freight activities, are characterized by reduced conflict with non-freight activities, e.g. residential, and are currently or easily converted to attract commercial vehicle transit, their use as cross region access routes may be desirable. This desirability follows that where truck activity is required for the pick-up and delivery activity, utilizing another roadway for access places the truck on two, where one roadway is sufficient. This minimizes the expenditure necessary to construct and maintain truck friendly routes, assists in siting of future economic pursuits, and creates a more efficient operational environment for the transportation provider. This efficiency reduces vehicle miles of travel (VMT) and the associated environmental impacts, and supports moderated transportation rates and coverage schedules.

Motor Carrier, Commercial Vehicle Terminals, Service Centers

Terminals or facilities operated by individual commercial carriers are typically located where travel distance to the majority of the expected shipping base, across the service area, is minimized. Over time, businesses relocate and new

businesses are located on older, and newly designated land use parcels. As terminal buildings are the largest single investment for most providers, these are typically not relocated to match this shipper migration. As distances increase between the carrier and the shippers, cost increases for the carrier and is passed onto the shipper through higher transportation rates. This increase may deter introduction of businesses, both industrial-manufacturing and retail-wholesale.

Of those companies listed as General Freight and Other Specialized Trucking in the NAICS description, for the Neck area, four distinctive locations exist, as shown on **Figure 3.27**:

- North Rhett, north of Remount Road
- West Montague, Michaux Parkway to Dorchester Road
- Area bordered by Dorchester Road (North), Leeds Dr (West), and Azalea Dr (South)
- Greater Stromboli Avenue Area

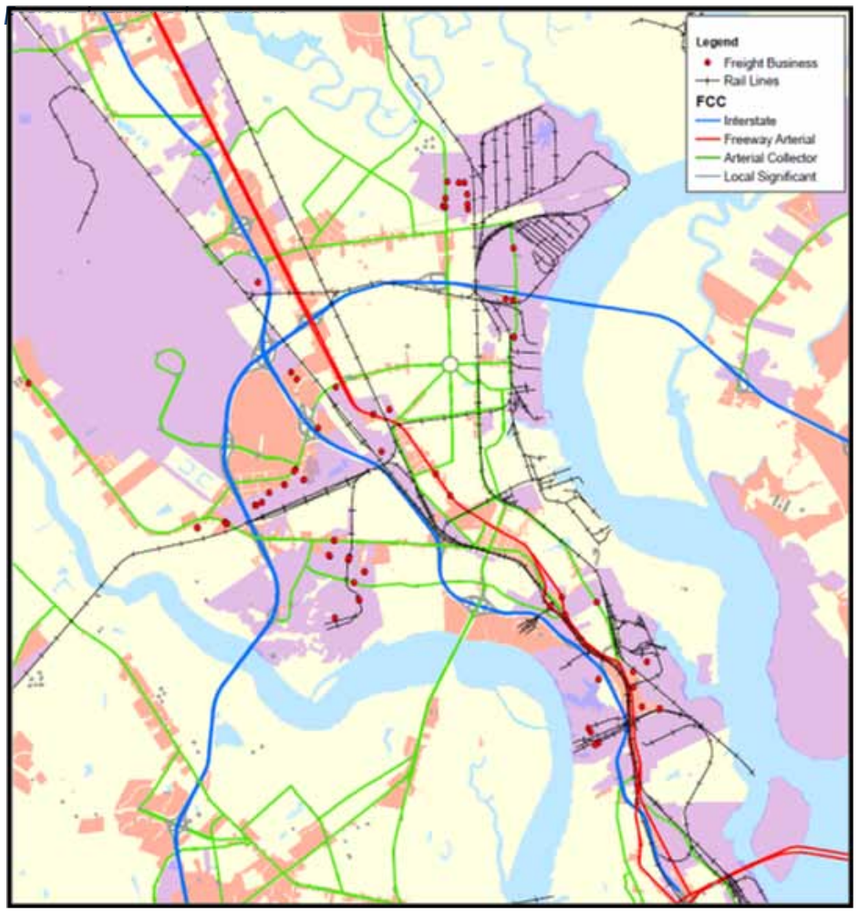


Figure 3.27 Motor Carrier Terminals, For Hire, Drayage, Significant Private Fleet

Within the general business environment all businesses, as well as residential land uses, require varying degrees of freight, goods, and services movement. Much of the routine truck traffic for residential and other low freight intensive activity is accomplished by Class 6 or smaller vehicles, as shown on **Figure 3.28**. These classes do not typically require special roadway design consideration, as their performance is similar to general traffic.

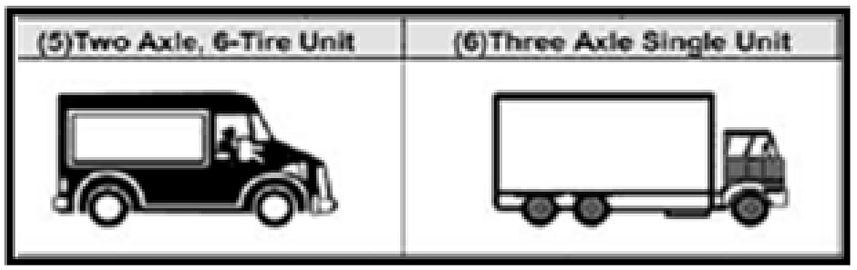


Figure 3.28 Class Five (5) and Six (6) Vehicles

Moderate to heavy freight intensive activity may utilize these same classes. The majority of activity at this level would expect to include Class 7 and Class 8 vehicles, as shown on **Figure 3.30**.

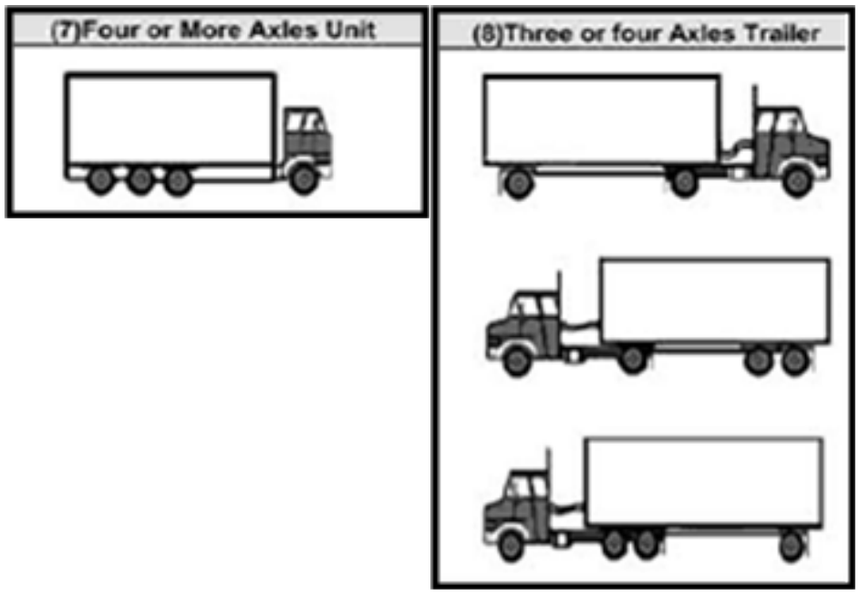


Figure 3.29 Class Seven (7) and Eight (8) Vehicles

All truck traffic must be considered in the plan. Special consideration must be provided to accommodate the larger classes. To account for this need, the locations of those facilities of moderate to high levels are illustrated. Beginning with a potential list of over 6,000 businesses present, this list is significantly reduced,

Figure 3.30 Freight Intensive Activity Locations, Northern Study Area

Figure 3.31 Freight Intensive Locations, Western Study Area

as service industry and other sectors are removed. Business sectors included warehousing and distribution locations, manufacturing and industrial based, retail and wholesale, and similar addresses.

Current locations of those identified businesses are illustrated in **Figures 3.30 - 3.32**. The four carrier oriented areas noted previously are highlighted.

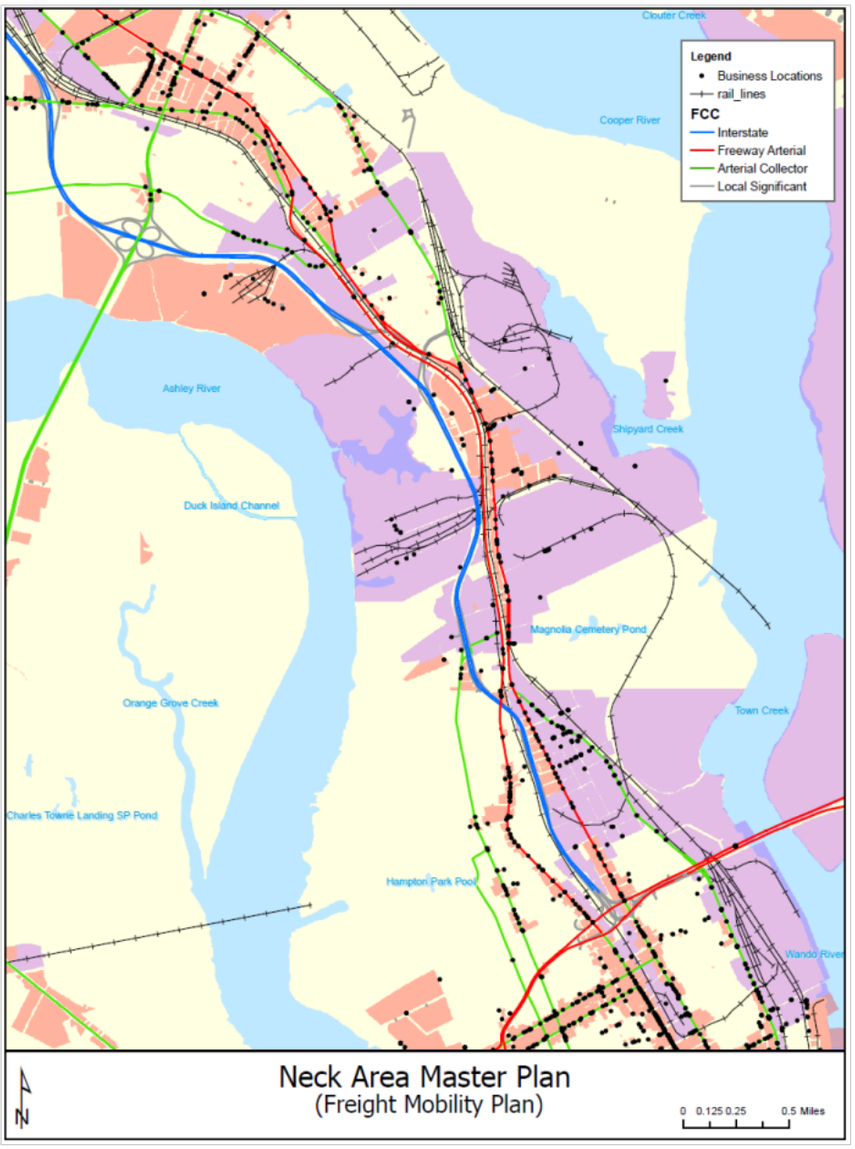


Figure 3.32 Freight Intensive Locations, Southern Study Area

ENVIRONMENTAL CONDITIONS

Most of the Charleston area is at or near sea level. Because of its low elevation, coastal location, and abundance of rivers and streams, it is subject to flooding or storm surges associated with hurricanes, tropical storms, and intense thunderstorm activity.

The Neck area is part of the peninsula bounded by the Ashley River on the west and the Cooper River on the east, each part of a watershed sub-basin for the greater Santee basin. Both rivers, as well as their tributary creeks, are tidally influenced, meaning they rise and fall with the tide and contain brackish water.

There are large areas on the peninsula that are designated as either floodplains or wetlands. These areas are generally adjacent to the larger water bodies and provide many important benefits, including flood control, water quality improvement, groundwater recharge, recreation, and ecological habitat (see **Figure 3.33**).

Figure 3.33 Environmental Conditions (See Appendix A pg. 206)

Floodplains are land areas susceptible to inundation by floodwaters from any source. The base flood elevation, the national standard for which management and insurance are calculated, is the 100-year flood. A 100-year flood is calculated to be the level of flood water expected to be equaled or exceeded once every 100 years on average. It is more accurately referred to as a flood having a one percent chance of being equaled or exceeded in magnitude in any given year. It is important to keep development out of the floodplain or above the 100-year flood elevation for the protection of life and property.

Wetlands are areas that are flooded or saturated by surface or groundwater often and long enough to grow vegetation adapted for life in water-saturated soil. They often occur within the floodplain; however, wetlands often become disconnected from the floodplain drainage system as a result of development activities. Because of the wide array of ecological benefits provided by wetlands, development should not encroach into these areas if at all possible.

The Charleston County Government has identified hurricane zones for the Tri-County area to help ensure timely evacuation and citizen safety during major storm events. The zones are listed "A" through "H" with evacuation, of all zones or some zones, occurring in alphabetical order based on storm specifics. The Neck area falls entirely within Zone "B".

Over the years, much of the watershed storage areas on the peninsula have been cleared, developed, or paved. Stormwater runoff is now conveyed by pipes and ditches, which have increased the total volume of water running off the land, altered the natural stormwater runoff patterns and increased flooding to downstream areas. Pipes are often undersized or poorly maintained, increasing water ponding during storm events. Runoff from developed areas and industrial activities has degraded aquatic habitat and harmed surface water quality.

Socioeconomic Factors

The socioeconomic conditions in the Neck area will shape the needs of its residents and influence the redevelopment opportunities that can be achieved through the Master Plan. This section presents an overview of key population, housing, and employment characteristics of Neck area residents and workers. Where available, the data were analyzed by census tract in order to identify geographic patterns within the area.

Population Characteristics

As the Berkeley-Charleston-Dorchester (BCD) region has grown over the past two decades, the Neck area's population has actually declined. Because the city populations of Charleston and North Charleston increased during this time period, there is a clear trend of depopulation in Neck area neighborhoods. **Figure 3.34** shows the population figures from the past three decennial censuses, with the Neck area and the two cities displayed on a chart.

Year(s)	Neck Area	Charleston	North Charleston	Charleston County	BCD Region
1990	52,832	80,414	70,218	295,039	506,875
2000	42,511	96,086	79,442	309,969	549,033
2010	37,591	120,083	97,471	350,209	664,607
Compound Annual Growth Rates					
1990-2000	-2.2%	1.8%	1.2%	0.5%	0.8%
2000-2010	-1.2%	2.3%	2.1%	1.2%	1.9%

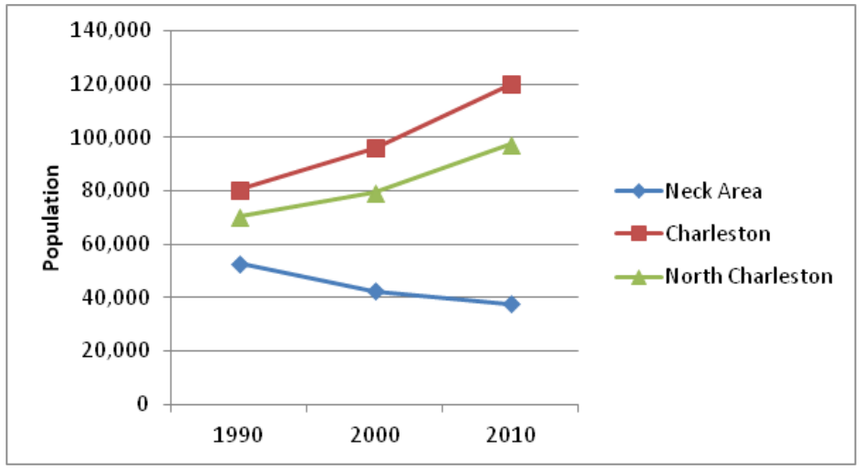
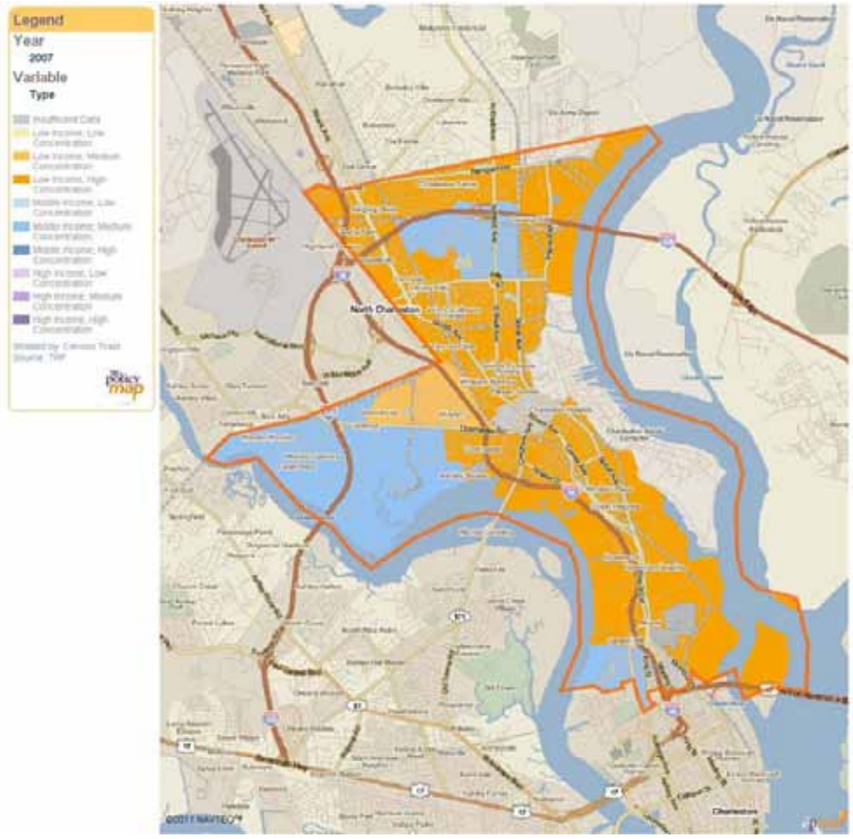


Figure 3.34 Population Trends

The population decline from 1990-2000 was primarily driven by the decommissioning of the Charleston Naval Base, which was the long-standing employment anchor of the Neck area. With the navy base gone, local neighborhoods lost a major source of employment and economic activity.

The current demographic profile of the Neck area is of a population that has predominantly low incomes and limited educational attainment. The average median household income across the area's census tracts is only $26,553, but individual tracts range from a low of $17,549 to a high of $50,268. This compares to $47,799 for Charleston, $34,955 for North Charleston, and $49,312 for the BCD region as a whole. Almost half of the census tracts show a college degree attainment rate of less than 10 percent, which means that finding a good-paying job is more difficult for Neck area residents in a regional economy that is becoming increasingly services-oriented. On average, 29 percent of the families in each census tract are living below the poverty line. This compares to 11 percent for Charleston, 20 percent for North Charleston, and 10 percent for the BCD region as a whole. **Figure 3.35** presents a map of the Neck area's income



Source: PolicyMap

Figure 3.35 Map of Neck Area Income Distribution

distribution obtained from the PolicyMap service of The Reinvestment Fund, which shows how most of the area reflects a concentration of low-income households, but with pockets of moderate-income concentration on the edges – generally in and around the Park Circle, Wando Woods, and Wagener Terrace neighborhoods.

Historical settlement patterns have left the Neck area with a racial composition that differs substantially from each of the two cities that encompass it. According to the 2010 Census count, two-thirds of Neck residents identified themselves as Black or African American, making it the predominant racial category in the area. **Figure 3.36** shows the racial composition of the Neck area compared to Charleston, North Charleston, and the BCD region as a whole. While African Americans are the predominant racial category in the Neck area, the percentage varies significantly across individual census tracts. There are two tracts that are more than 90 percent African-American, while the Navy Yard tract is at five percent and the northern half of the Park Circle neighborhood is at 35 percent. The area of greatest African-American concentration is in the southern half of the Neck area, primarily in the North Charleston neighborhoods belonging to the Low

Racial Category	Neck Area	Charleston	North Charleston	BCD Region
White	26.9%	70.2%	41.6%	65.6%
Black or African American	67.5%	25.4%	47.2%	27.7%
American Indian and Alaska Native	0.4%	0.2%	0.5%	0.5%
Asian	0.5%	1.6%	1.9%	1.6%
Native Hawaiian and Other Pacific Islander	0.1%	0.1%	0.2%	0.1%
Some Other Race	3.0%	1.0%	6.2%	2.5%
Two or More Races	1.6%	1.5%	2.5%	2.1%
TOTAL	100.0%	100.0%	100.0%	100.0%

Figure 3.36 Racial Composition

Country Alliance for Model Communities (LAMC). LAMC and these neighborhoods are working to improve economic conditions that are a legacy of years of environmental contamination, lack of investment, deteriorating housing stock, and limited job opportunities.

The age characteristics of the Neck area population are fairly similar to the areas that surround it, with one exception (see **Figure 3.37**). When compared to the Neck area, North Charleston, and the BCD Region as a whole, the city of Charleston has a lower percentage of children under 18 and young adults age 18 to 24. The higher proportion of young adults is likely due to the several colleges located in the city, while the lower proportion of children could be due to higher housing costs that make it more difficult for young families to live there.

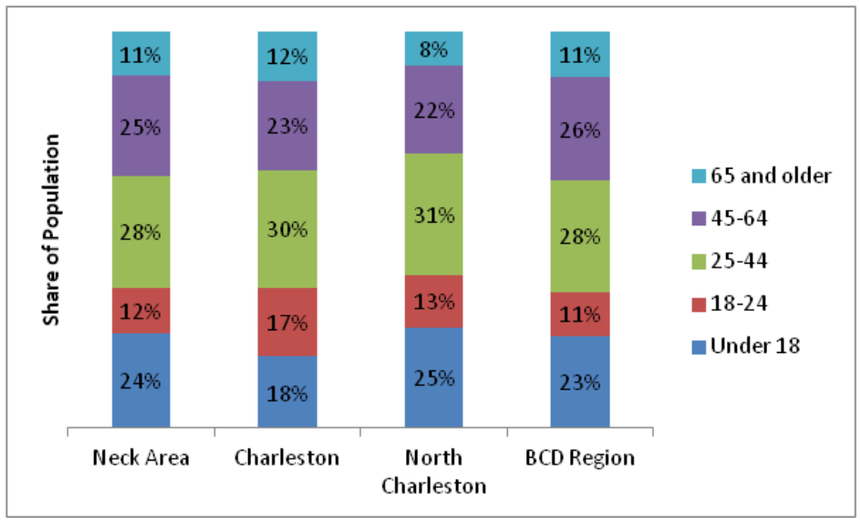
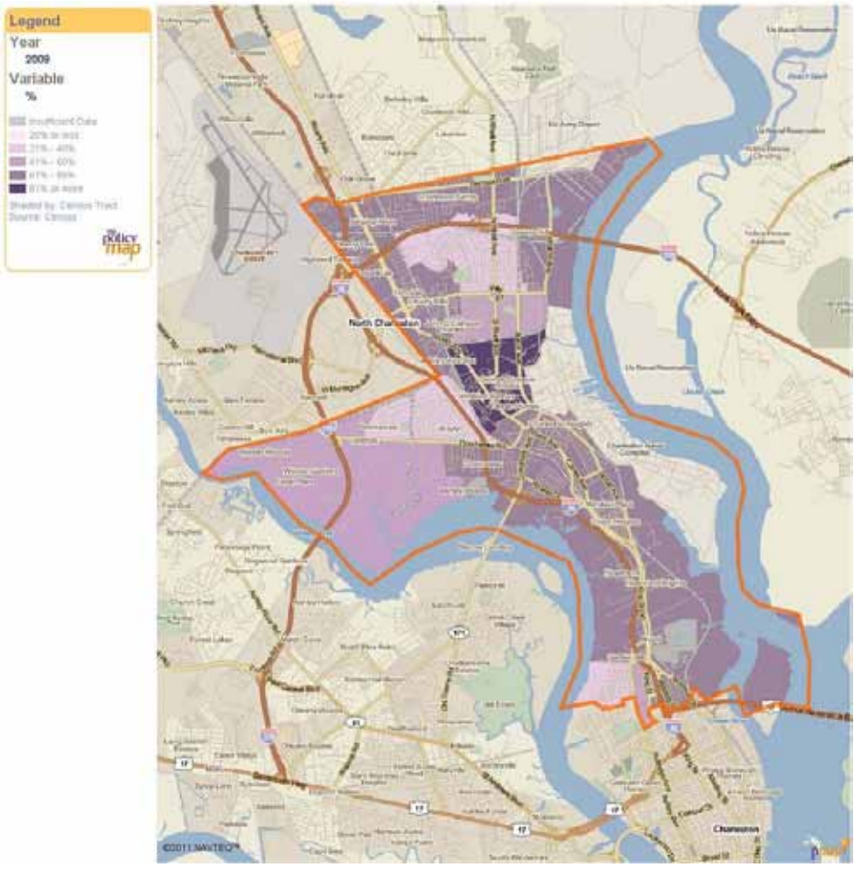


Figure 3.37 Share of Population by Age Group

Overall, 65 percent of the Neck area's population is between 18 and 65 years of age, meaning that around two-thirds of the population are in the typical working years and could potentially benefit from education and job training programs. Furthermore, 40 percent are between 18 and 44 years of age, with a number of prime working years still ahead of them.

Housing Characteristics

New housing development in the Neck area has been very limited, with only 12 percent of units having been built since 1990. In comparison, the share of homes built since 1990 is 34 percent in Charleston, 27 percent in North Charleston, and 37 percent in the BCD region as a whole. While there have been a number of new residential projects completed in recent years, primarily in the northern half of the Neck area in and around the Navy Yard project, just over half of Neck residents live in homes more than 50 years old. Thirty percent of the homes in Charleston and 22 percent of those in North Charleston were built before 1960, but in the Neck area the figure is significantly higher at 51 percent.



Source: PolicyMap

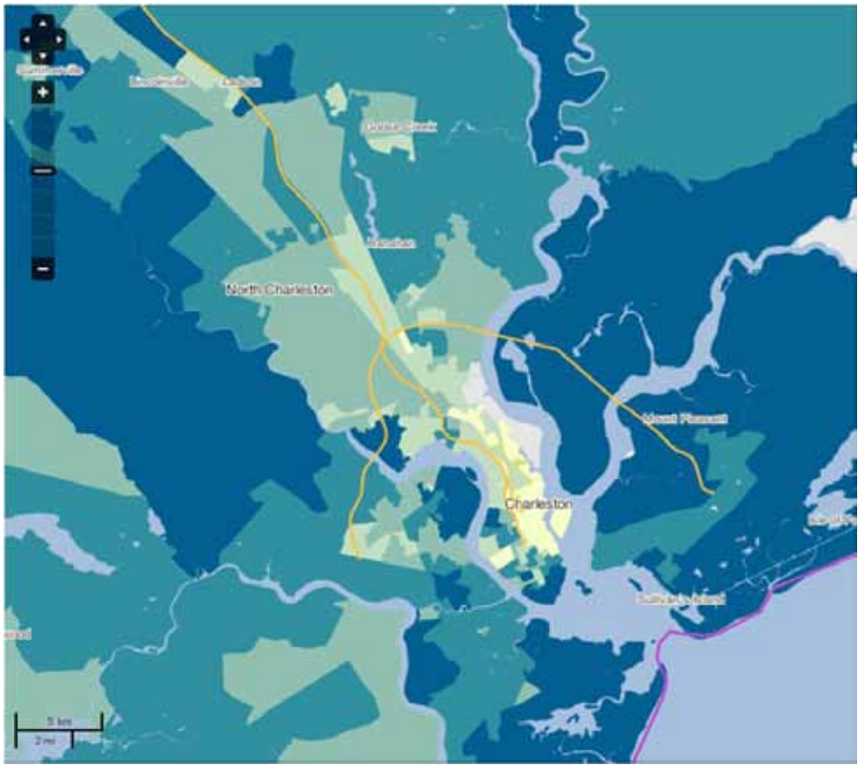
Figure 3.38 Map of Renter Household Percentage by Census Tract

A majority of Neck residents rent their homes, but like income levels, the percentage of renters varies significantly across the census tracts in the area – from as low as 20 percent in Park Circle to as high as 80 percent in the neighborhoods north and south of Shipwatch Square (see **Figure 3.38**). Despite the high percentage of renters, the proportion of multi-family housing is relatively low in most parts of the Neck area. On average, 22 percent of housing units overall are multi-family, and in only one census tract is the multi-family share larger than 50 percent. The tracts with larger multi-family shares are generally located in the southern half of the Neck area.

Home prices and rents in the Neck area generally parallel income levels, with higher values found on the edges of the area in Park Circle, Wando Woods, and Wagener Terrace. The central LAMC neighborhoods present the largest proportion of households that are paying more than 30 percent of their incomes for housing costs – the standard measure of affordability. Even though home prices are the lowest in these neighborhoods, their low incomes mean that many households are burdened by housing costs. Overall, 40 percent of home owners in the Neck area are paying more than 30 percent of their incomes for housing, and 15 percent are paying more than 50 percent, with burdened homeowners primarily concentrated in the two census tracts at the southern edge of the Neck area and in the Chicora/Cherokee neighborhoods. However, the Neck area's central location and excellent regional accessibility mean that for some households the higher housing costs may be balanced out by lower transportation costs. According to the H+T Index produced by the Center for Neighborhood Technology, the Neck area has some of the lowest combined housing and transportation costs in the region (see **Figure 3.39**). But for many Neck residents, affording even basic housing is a challenge. A significant share of the population lives in subsidized rental housing, particularly in the LAMC neighborhoods. Data from HUD indicate that there are five census tracts where at least one-fourth of the population lives in subsidized housing. Affording a car also may be a challenge, as nearly one in four Neck area households (23 percent) do not have a vehicle available to them for use. This compares to 11 percent of households in Charleston, 12 percent in North Charleston, and 7 percent in the BCD region as a whole.

Employment Characteristics

While the effects of the Great Recession have been felt throughout the Charleston region, the impact on residents of the Neck area has been considerably larger. Unemployment data are only available for small areas as a historical snapshot through the American Community Survey, but it illustrates the divergence in economic fortunes. The average unemployment rate in the Neck area from 2005-2009 was 13.3 percent, more than double the rate of the BCD region, which was 6.0 percent. African-American workers in the Neck area were much more likely to face difficult job prospects, as their unemployment rate was 16 percent – double that of white workers in the Neck. The white unemployment rate paralleled that for the City of North Charleston as a whole, which itself was 1.5 points higher than the City of Charleston. **Figure 3.40** presents the comparison.



Note: Lighter shading indicates more affordability as a percentage of household income.

Source: H+T Index, Center for Neighborhood Technology

Figure 3.39 Housing + Transportation Costs in the Charleston Region

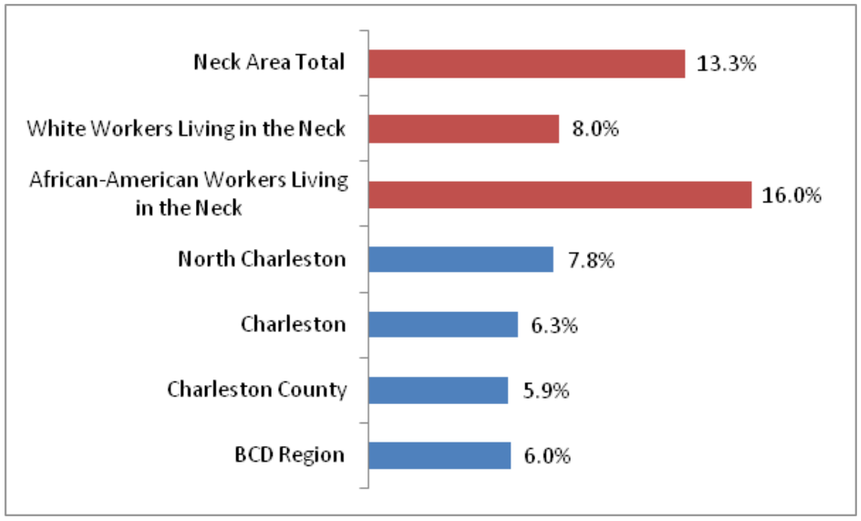


Figure 3.40 Unemployment Rate, Average 2005-2009

Because the rates in **Figure 3.40** are a historical average from 2005-2009, it should be noted that conditions will have changed since then. However, monthly unemployment rates are available only at the county and regional levels. The December 2012 unemployment rate (the latest available) for the BCD region was 7.1 percent, almost a point higher than the 2005-2009 average. The trend in the smaller areas probably moved in the same direction, meaning that the Neck area unemployment rate may have increased from what is shown in the chart.

Neck area residents tend to work in lower-paying industries. The predominant industry sectors are Accommodation & Food Services, Health Care & Social Assistance, Retail Trade, and Administration & Support Services. Just over 30 percent earn less than $15,000 per year, and half earn between $15,000 and $39,999 per year. More than 70 percent commute less than 10 miles to get to work, primarily to either Charleston or North Charleston. Based on the industry and wage profile data, many Neck area residents are working at retail stores, medical facilities, hotels, and restaurants in downtown Charleston and the airport gateway/retail corridor of North Charleston.

The employment base of people working at businesses in the Neck area is substantial. Just over 42,000 people worked in the Neck area in 2010, which was an increase of almost 2,000 jobs from 2009. During the recessionary period of 2007-2009 the employment base was flat, which is a notable achievement, considering the severe job losses that took place in many parts of the U.S. during that time. The largest industry sectors represented are Manufacturing, Professional, Scientific & Technical Services, and Administration & Support Services. Over 43 percent of the jobs earn more than $40,000 per year.

Neck area employees tend to live farther away from their jobs than do Neck area residents. Only 43 percent live less than 10 miles away, and 17 percent live greater than 50 miles away. Only around one-fourth of the employees live in Charleston or North Charleston, and only 40 percent live in Charleston County (inclusive of the two cities). The trend has been for an increasing share of employees to live farther away from their jobs. In 2003 the share of employees living in Charleston and North Charleston was 33 percent, and the share living in Charleston County was 50 percent. Because most of these employees are likely to be driving to work, the increasing commute distances contribute to worsening air quality, greater energy demands, and higher household spending on transportation as a share of income. All of these factors put the regional economy at greater risk from potential shocks such as rising gasoline prices or negative health impacts from increased air pollution.

Summary of Socioeconomic Conditions

Examining the population, housing, and employment characteristics of the Neck area reveals a number of significant issues, including:

- The Neck area population is in a declining trend.
- Unemployment is significantly higher than elsewhere in the region, especially for African-American residents.
- The industry mix between the resident workforce and local employment base does not match well. Residents are under-represented in the manufacturing and construction sectors, which tend to pay better than retail and tourism sector jobs.
- Most residents' commutes are relatively short.
- There is a high proportion of rental housing, including a major presence of subsidized housing. Not much new housing is being built. Even though there is a high proportion of rental housing, not much of it is in a multifamily format.
- The neighborhoods with the highest incomes and home values are on the edges of the Neck area, making potential linkages that could reinforce disadvantaged neighborhoods more difficult to achieve.

Community Focal Points

Community focal points are important places that are well known in the Neck area and accessible and treasured by residents. They can represent a variety of socio-economic destinations, including civic, religious, retail, wellness, service, education, culture, and/or recreation facilities. Focal points form an important part of the community fabric and usually act as gathering places or places where information and services can be obtained.

The map (**Figure 3.41**) shows that although there are a variety of community focal points scattered throughout the Neck area, primarily in the Park Circle and Shipwatch Square areas, there are areas without community facilities readily accessible to residents. Filling these gaps in community focal points helps connect the community and increase the quality of life for citizens in the Neck area.

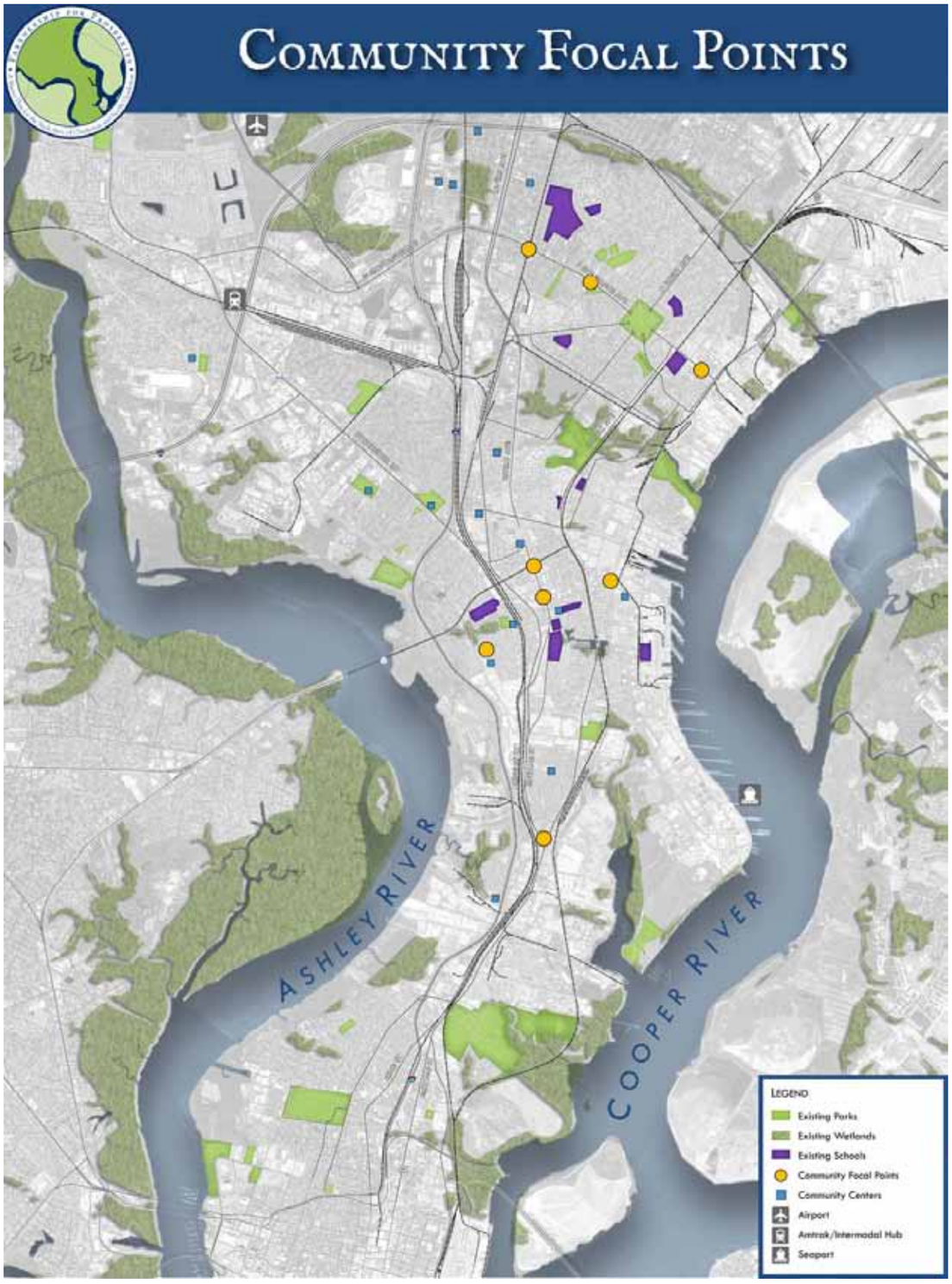


Figure 3.41 Community Focal Points (See Appendix A pg. 207)

ECONOMIC EQUITY

Despite living in the heart of the region's job corridor, a place that has a strong economic position and is continuing to attract investment, residents of the Neck area historically have not shared in the economic growth that is taking place around them. As this growth benefits the entire region, but the business activities impose costs on local neighborhoods, there is a question of economic equity that should be addressed when planning for the Neck area's future. ESRI, a national demographic data provider, estimates that in 2011 the median household income of the BCD region was $44,910. Meanwhile, the median income in the Neck area was $25,463 or 43 percent lower. Shrinking this gap will require a process of helping Neck area residents share more in the region's economic development – growth that is anchored by employment and investment occurring near their neighborhoods.

Many local residents have not been able to tap into this nearby economic engine. Of the 42,000 jobs in the Neck area in 2010, only eight percent were filled by Neck area residents and the average over the past nine years has been 11 percent. This represents 22 percent of the Neck area's employed residents. Of the Neck area residents with jobs, only 54 percent worked full time in the past year according to the American Community Survey and those full-time workers earned only 80 percent of the average wage of a job located in the Neck area. If part-time workers are included, the average employed Neck resident earns only 57 percent of the average wage of a Neck area job. That means most of the wealth produced in the Neck is outsourced to people living in other parts of the region, a situation that contributes to a donut-hole effect of declining prosperity and quality of Neck area neighborhoods.

Even the residents who work in the Neck area have not been able to capture a share of the area's economic activity to the same extent that workers who live elsewhere do. **Figure 3.42** shows how nonresidents are much more likely to hold the better-paying jobs in the Neck area (those paying $40,000 or more per year) than are residents.

While there is a wide range of possible factors that influence where people live and are able to find work, a key challenge that has been identified in the Neck area is a lack of sufficient educational attainment and/or job skills. While 40 percent of the Charleston region's adult population (excluding the Neck area) holds at least an associate's degree, in the Neck area the share is only 20 percent. National research has demonstrated the direct correlation between education level and income, and industry sectors that are central to the region's economic development are demanding workers with significant technical skills and the ability to handle complex tasks. While living in the Neck area gives residents proximity to the potential ingredients for prosperity, they must also have the tools needed to participate in the future growth. Redevelopment strategies will need to build connections between the places which attract investment and the people who already live in and near them.

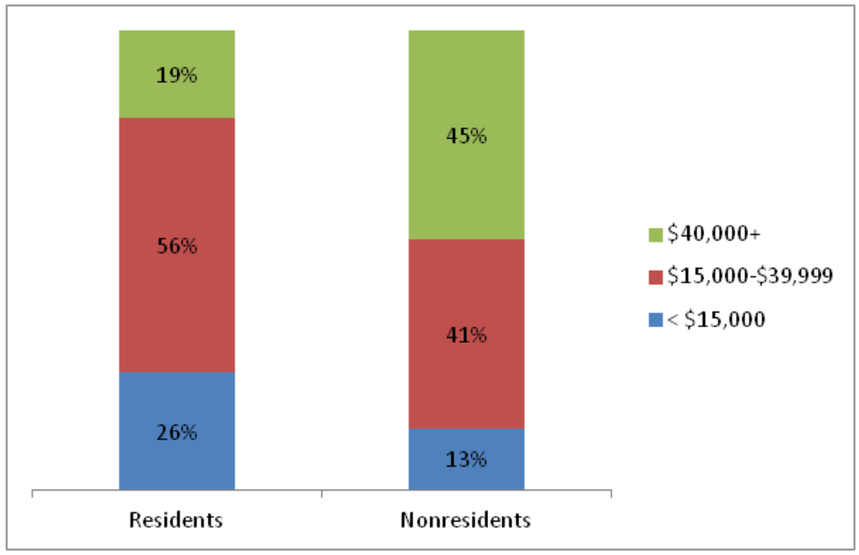


Figure 3.42 Annual Wage of Workers in the Neck Area

CONTEXT SUMMARY

The Neck is a key Tri-County and regional area that provides jobs and destinations for both local residents and visitors. While the peninsula is a tight strip of land with many competing demands and issues, opportunities exist for positive change that will help revitalize the area. Several plans have been completed or are underway that set in motion a series of expectations for improvements in the Neck area. This Master Plan strives to build and complement those efforts. Examining the area context set a foundation that guided the planning efforts that followed in this project, mainly balancing economic development with community sustainability and regional mobility with community livability. Context also helped develop an area place identity that will be used to attract economic investment, promote community involvement and ownership, and improve the overall quality of life for Neck residents.

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Chapter 4
Vision Development: Imagining Outcomes

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This chapter describes challenges and opportunities facing the Neck area, identifies the community values and goals, and establishes a vision statement that serves as guidance for future planning and development.

Vision Development- Imagining Outcomes

GENERAL

Focus group participants, interviews with stakeholders, and members of the community who attended public forums or workshops identified many different challenges and opportunities facing the Neck area. Those issues and opportunities provided a context that guided the development of scenarios and alternative strategies for consideration in the Master Plan process. **Figure 4.1** represents how different context elements interrelate and complement each other to provide a framework in the development of solutions for the challenges and opportunities presented below. The graphic depicts the three pillars of the Partnership for Prosperity vision and Master Plan for the Neck area.

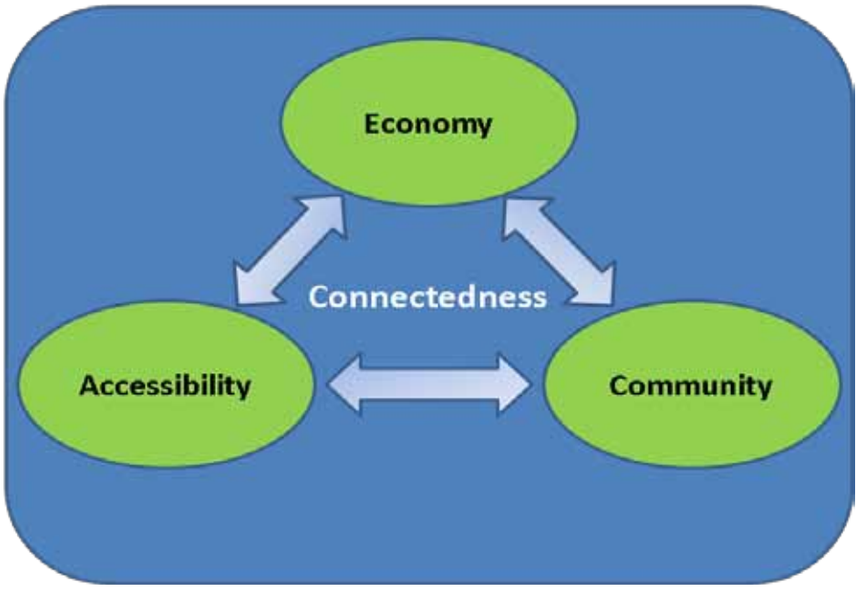


Figure 4.1 Context Relationships for Vision Elements

CHALLENGES

The key challenges or issues facing the Neck area reflect major changes in the recent past in land use, employment, and industry in the area, and the differing interests among various stakeholders in the area . The issue of rail service into and through the Neck area to access the Port of Charleston and other major freight users loomed as a large and controversial issue that placed a great deal of uncertainty on future plans for the location of intermodal facilities and related commercial vehicle movements. However, it is clear from the number of plans, economic development activities and projects described in a previous section of this report that the Neck area is poised to be the center of the region's employment growth when economic conditions improve. As such, the jurisdictions and agencies with responsibility for various aspects of the study area, including the two cities, Charleston County, the South Carolina Department of Transportation, the Ports Authority, SC Public Railways and others, will benefit greatly from a clearly-defined vision for the future, supported by detailed plans and strategies for moving forward to create a desirable future.

The following challenges were identified as consistent themes during focus group meetings, interviews, and consultant team research:

Rail access to the area. Even though there has been resolution regarding the competing plans for rail access to the Port and through the Neck area and old Navy Yard, there is still uncertainty about the future rail network and needs in the study area relative to increasing economic activity of key rail users like the Port, Kinder Morgan and others, passenger rail, redevelopment and revitalization of existing neighborhoods. However, it is generally recognized that freight movement by rail is expected to increase, as will commercial vehicle traffic between intermodal facilities, the Port and the interstate highway system.

Environmental Concerns. Many sites contain soil and groundwater contamination from past industrial activities; the extent of this contamination has not been determined for many sites in the Neck area. Additionally, freight traffic and industry uses create noise, odor, and vibration, which affect the quality of life in existing neighborhoods in the area.

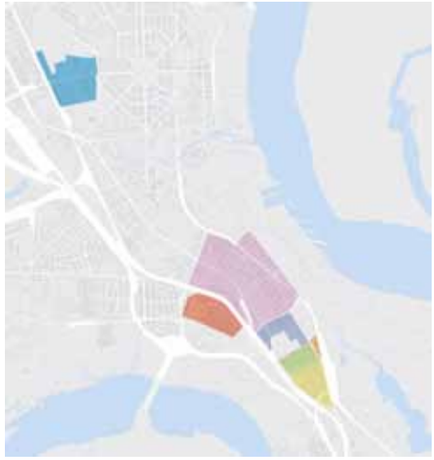
Stalled development plans. There are a number of planned developments in the area that have generally stalled because of the economy or development costs related to soil contamination. These developments include Noisette, Magnolia, and the Promenade, and they may provide an opportunity to reconsider development patterns, if appropriate, that are desirable for the future of the Neck area.

Freight movement and access. Both interstate and local corridors are needed for truck freight movement. Access to I-526 and I-26 is important, but these roads cannot handle all truck traffic. The I-26 corridor south of I-526 and the I-26/526 interchange represents major congestion points in the Neck area, and those congestion levels may force more commercial vehicle traffic onto surface roads, creating conflicts with existing neighborhoods and plans for transit and non-motorized transportation retrofits. The Stromboli corridor is planned for a local access connector as a complement to the planned Port Access Road, which is permitted as part of the Port's expansion plans.

Poor housing stock. There is a lack of quality housing stock at all income levels in the study area. There is a great deal of substandard housing and the City of North Charleston has a program underway to demolish unusable buildings (not just residential) and rebuild as necessary.

Lack of connectivity. Interstate and rail corridors running north/south through the Neck area have broken the network of east/west connectivity for both motorized and non-motorized travel, making access and mobility within the community more difficult. The lack of connectivity places pressure on key east-west roads, such as Montague Avenue, which results in congestion and unsafe conditions for vulnerable road users on foot or bicycle.

Other concerns include gaps and barriers in the bicycle/pedestrian network, lack of access to waterways, and inadequate open space facilities.



LAMC neighborhoods

Opportunities

While there are many challenges associated with recovery within the Neck area, there are many existing economic, physical, and natural resources in place that help put the Neck area in a position to take advantage of revitalization opportunities as they present themselves.

The following opportunities were identified as consistent themes during focus group meetings, interviews, and consultant team research:

Organized Transportation and Land Development. Much of the development activity in the Neck area has been haphazard, piecemeal or a legacy of decisions made long ago. Industrial uses and transportation activities have divided and encroached on residential areas; roadways lack consistent accommodation for non-motorized users; and coordinated decision-making between agencies has been difficult to achieve on a consistent basis. This Master Plan presents an opportunity to help define a more organized, integrated and complementary land use and transportation pattern that clarifies expectations and desired outcomes among many different partners in the process.

Unified plan. A unified Master Plan for the Neck Area that incorporates existing plans as appropriate and provides implementation strategies that the two cities and Charleston County can support and promote in their policies, decisions, programs, etc. is important to leverage public and private sector investments, provide direction and balance competing interests.

Neighborhoods. The neighborhood councils in Charleston and North Charleston are strong and active, taking pride in their communities and being involved in the decision-making processes that affect them. Several of the neighborhoods have undertaken a great deal of planning already for their future and are working to implement those plans. The neighborhoods in the study area generally want to be involved and are interested in the master planning process. Context-appropriate infill development can provide needed services and employment opportunities for existing neighborhoods, and create a new district with housing options and services.

Multimodal transportation.

- While CARTA provides fixed route transit serving the peninsula and Tri-County Link provides regional transit service, there has long been discussion of light rail or commuter rail service (or some form of premium transit) for the future. Elected officials from both cities are very interested in commuter rail, and the Coastal Conservation League has proposed a light rail line serving key activity areas. The Partnership for Prosperity Master Plan helps to provide an integrated land use-transportation focus to those ideas in ways that help strengthen the local fixed route transit service and complement the on-going study examining alternatives for passenger rail in the I-26/US 52 corridor.
- In addition to public transportation, much can be done to improve conditions for bicycling and walking in the area, where a large number of people already bicycle or walk for transportation, through on-street and off-road facilities, and program-related initiatives involving education, encouragement of the role of law enforcement and equitable consideration of the needs of people who are transportation disadvantaged.
- The surface roadway network in the Neck area is generally operating under capacity today, due to changes in development and traffic patterns since the closure of the Navy Yard. Some local government staff believe that the current excess capacity is needed to accommodate future growth (both residential and commercial/industrial) in the area, while others have indicated that not all the capacity is needed, even for future infill/redevelopment, and there might be an opportunity to modify some of the corridors to serve as more "complete streets" that better accommodate the needs of all users.
- A site has been identified for a future CARTA/Amtrak/Greyhound intermodal transit center that offers the possibility of supporting commercial and residential development. Given the funding shortfalls to develop the

site, the existing Amtrak location in the Liberty Hill neighborhood also offers a potentially lower cost option for such an intermodal transit center, if designed sensitively to fit in with the neighborhood and adjacent new development.

Land use/mixed use development. As previously mentioned, several developments planned for the area have been abandoned or delayed, and this Master Plan identifies the appropriate future land uses and development patterns for these areas. The City of Charleston is interested in increased residential development in the area, as is the City of North Charleston, though its focus may be more on preserving/strengthening existing neighborhoods and bringing in economic development and jobs. Reynolds Avenue is one of several corridors that provide a potential for mixed use/commercial development through redevelopment and infill development.

Environmental justice. The neighborhoods in the study area care about air quality, noise and visual blight, especially issues that arise from industrial development. These neighborhoods have mobilized successfully in the past to challenge development that they felt would negatively affect the quality of life and hinder opportunities for reinvestment. Other issues related to environmental justice involve keeping communities intact and not allowing them to be divided by transportation facilities., commercial vehicle routing and noise.

Green industry. With a large amount of vacant and under utilized industrial areas, the Neck area is a prime location for future green industry and light industrial uses involving research and development. In fact, the Clemson University wind turbine facility provides an opportunity to bring in a cluster of complementary businesses involving education, research, assembly and manufacturing.

Rendering of Clemson University wind-turbine facility.

Food and services. The Neck area is generally considered a "food desert," where there are lower income neighborhoods without convenient access to a grocery store. An agricultural center is now open on Morrison Drive to provide an opportunity for residents to purchase fresh produce from local farmers. In addition, a number of sites are being considered as retail centers with grocery stores.

Open spaces. Parks and natural areas are unifying elements that should be available for all people in the Neck area. With environmental areas, vacant lots, and new green spaces available as part of the redevelopment and development activities, the opportunity exists (in conjunction with the bicycle and pedestrian network) to create a connected network of green transportation modes and open spaces that connect and act as community destinations.

Community Priorities

Values

A vision for the future of the Neck area that transcends the status quo and has staying power beyond the short term must be based on core values within the community. The vision statement and master plan to achieve the desired outcomes must be aligned with these defined core values.

Values endure, and are not likely to change over the short term. Thus, they provide a good framework for guiding the community (including government, citizens,

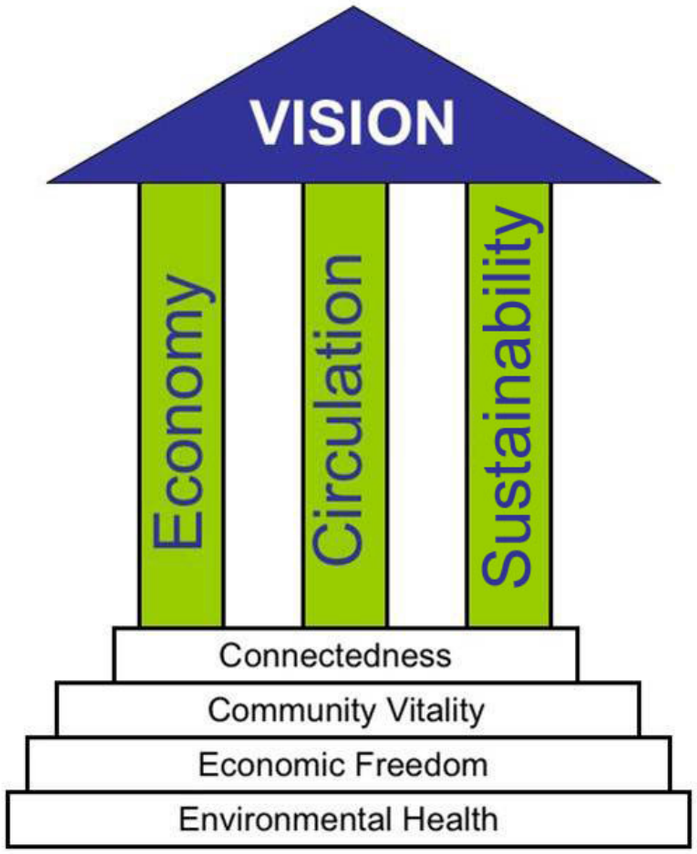


Figure 4.2 Community Values

businesses, and other organizations) as it moves forward to accomplish objectives identified in the Master Plan. The community values identified in **Figure 4.2** are the result of a thorough review of existing planning documents and thoughtful conversations with a series of focus groups, the Steering Committee, BCDCOG, and citizens at various public forums about what makes the Neck area a special place.

Connectedness – The identity of the area and neighborhood as a desirable place, with good transportation access for people of all ages and abilities to reach their destinations, socialize with friends and family, and enjoy a more livable community.

Community Vitality – A strong and resilient community that is welcoming to a diverse and growing population, with the housing, transportation and economic opportunities to sustain the community long into the future.

Economic Freedom – The ability to make a living through access to education and training, transportation choices and affordable housing options, enabling residents and businesses in the Neck area to pursue their aspirations.

Environmental Health – Reducing the pollutants to air, noise and water so that neighborhoods in the Neck area can prosper, while retaining their close-knit character with a renewed sense of civic pride and purpose.

From these core community values, the following principles supporting the values help form the foundation for the Master Plan:

- Healthy, safe, lifelong communities and neighborhoods;
- Community gathering spaces and destinations;
- Diverse economy and job opportunities;
- Multimodal transportation choices;
- Air quality and sustainability;
- Balance neighborhood needs with business and industry;
- Increased educational opportunities; and
- Housing choices and home ownership.

Defining the Vision

The vision establishes a concise statement of the Neck area's values and goals and provides a guide for future planning and development.

The Partnership for Prosperity vision that emerged from this process is to:

Strategically guide transportation investments and development activities to preserve and strengthen the historic, cultural and social character of the Neck area while encouraging new economic opportunities in targeted areas that benefit the region and local residents, and develop a robust multimodal transportation network that shortens travel time, reduces conflicts and environmental impacts, and improves access and mobility for all users.

The vision is meant to guide future planning and development activities by developing feasible transportation plans and preserving the beauty of the unique environmental features present along the peninsula. It is intended to clarify and confirm the direction of key redevelopment, revitalization, transportation, and economic growth opportunities that will enhance and sustain the quality of life for all Neck area residents and strengthen the economic competitiveness of the region as a whole. The elements of the vision will continue to evolve, but its overall direction and key recommendations spring from the values defined by the community.

Defining a Working Vision

Figure 4.3 shows a graphic composite of the input received during the map exercise at the first public workshop (summarized in Chapter 3 of this report). It represents important places, connections, and barriers/problems identified by the community. The map served as an information baseline as the team began to look at how different program elements within the Neck area were inter-related and it served as a basis for the Vision Elements Synthesis map that was developed later in the project.

The Vision Elements Synthesis map in **Figure 4.4** was developed as a working document that identified issues and opportunities, illustrated project concepts and relationships, and graphically depicted actions and strategies that helped move from the current reality to a preferred future vision. It was part of the foundation that guided the planning process. It was derived from data gathered from existing planning documents and through focus group discussion, stakeholder interviews, surveys, web site questionnaires, and community workshop exercises with public participation from hundreds of residents.

The Vision Map is a fluid document that provides guidance for achieving both short- and long-term community goals. It defines the future development direction of the area's existing and emerging centers, corridors and gateways, each with a distinct identity and development form, yet well-connected to the existing community fabric and focal points. However, it is a framework resource only and leaves specific project development to the appropriate jurisdictions, private enterprise, market conditions, and economic forces.

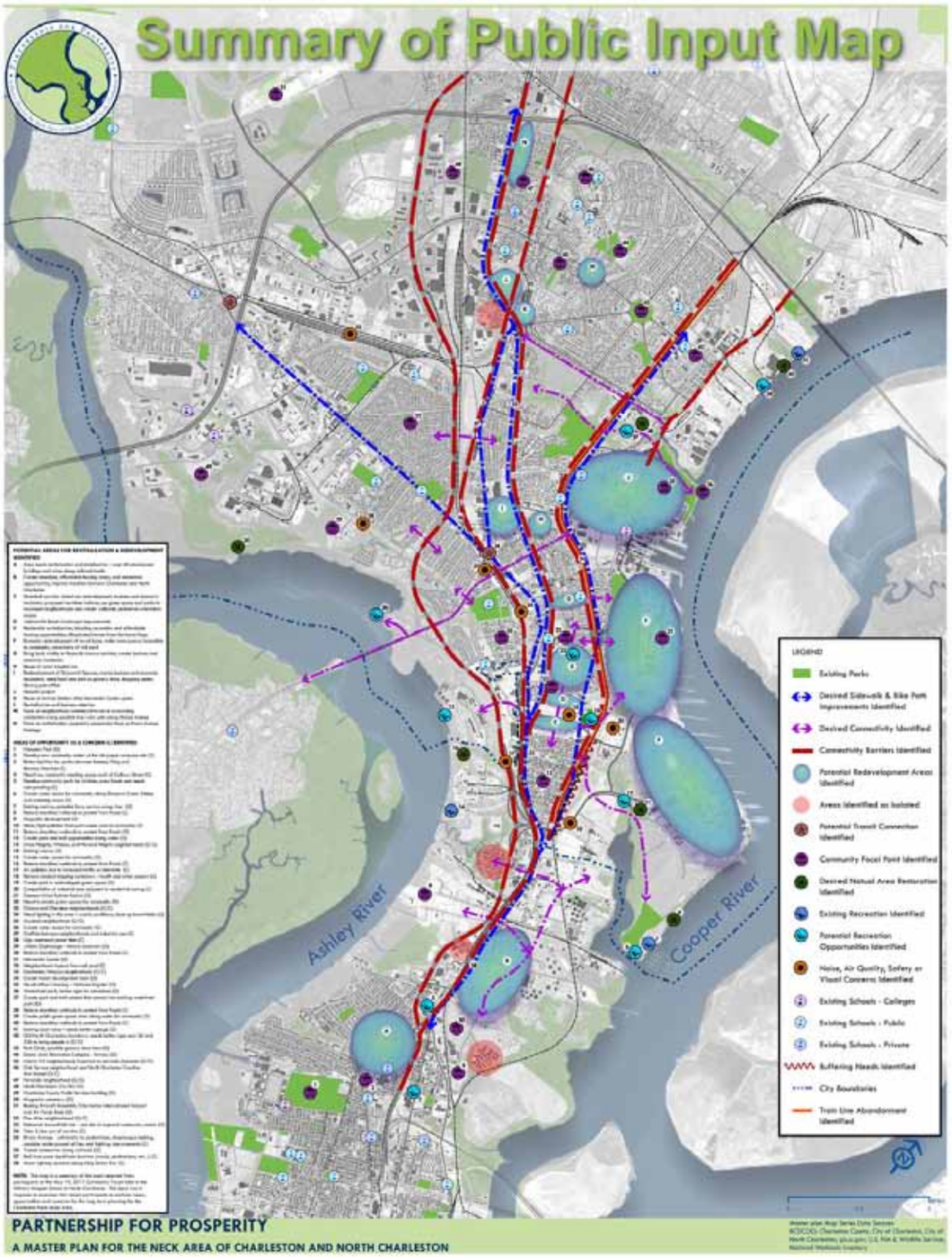


Figure 4.3 Summary of Public Input Map (See Appendix A pg. 201)

Figure 4.5 presents the working vision concept that emerged from the analysis of prior plans and extensive stakeholder and neighborhood discussions. Early the study process, the consulting team developed the working vision shown in the figure as a simple, concise map to feature the concept of a series of target or catalyst areas connected to a transportation spine network along the I-26/US 52 corridor that have the power to transform the Neck area.

The spine network serves as the unifying corridor that connects the Neck area both regionally and locally to jobs and industry, to neighbors, to services and to amenities for public health and a high quality of life. The vision establishes the spine network as a complete corridor for all users, consisting of highway, rail, transit and bicycle/pedestrian networks that operate within the corridor. This "Spine and Ribs" transportation network depends on linkages with development along the Cooper and Ashley Rivers, West Ashley and the neighborhoods within.

Each of the catalyst nodes shown on the map are envisioned to become centers of place and prosperity, each at different scales and designed to function as multimodal transportation hubs and development activities to support regional and local transportation networks, such as commuter rail, light rail, and interconnecting buses, all with a high level of bicycle and pedestrian accessibility. In some cases, the catalyst nodes focus more on supporting existing neighborhoods; in others they are opportunities for compatible growth at a regional scale, such as in the case of the North Charleston City Hall area. A network of green corridors, providing continuity of parks and open space, complements the transportation networks and provides a buffer between more intense development and residential areas.

The working vision map served as a useful organizing framework for further development of the Master Plan concepts and projects, as defined in subsequent chapters of this report.

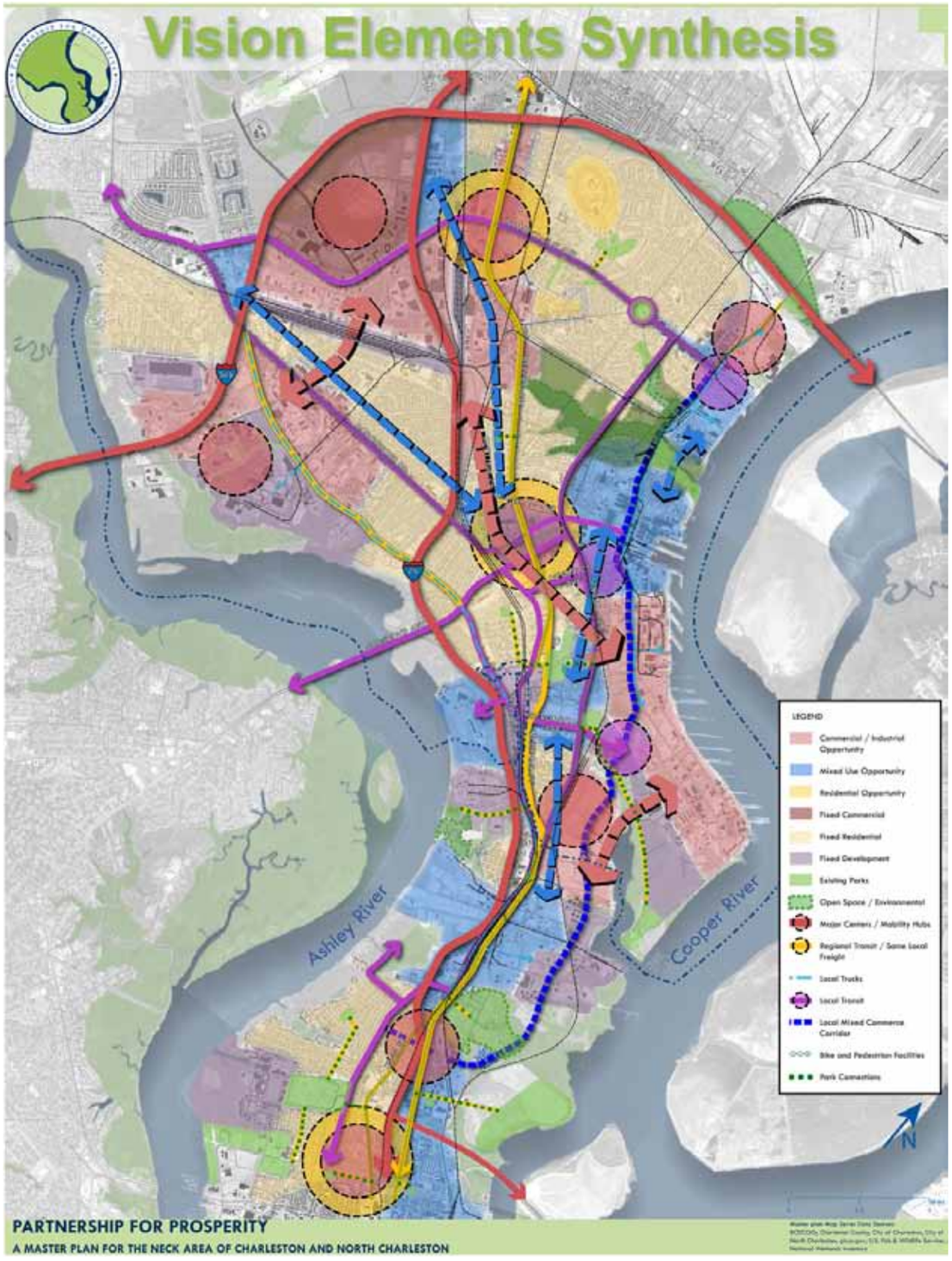


Figure 4.4 Vision Synthesis Map (See Appendix A pg. 202)

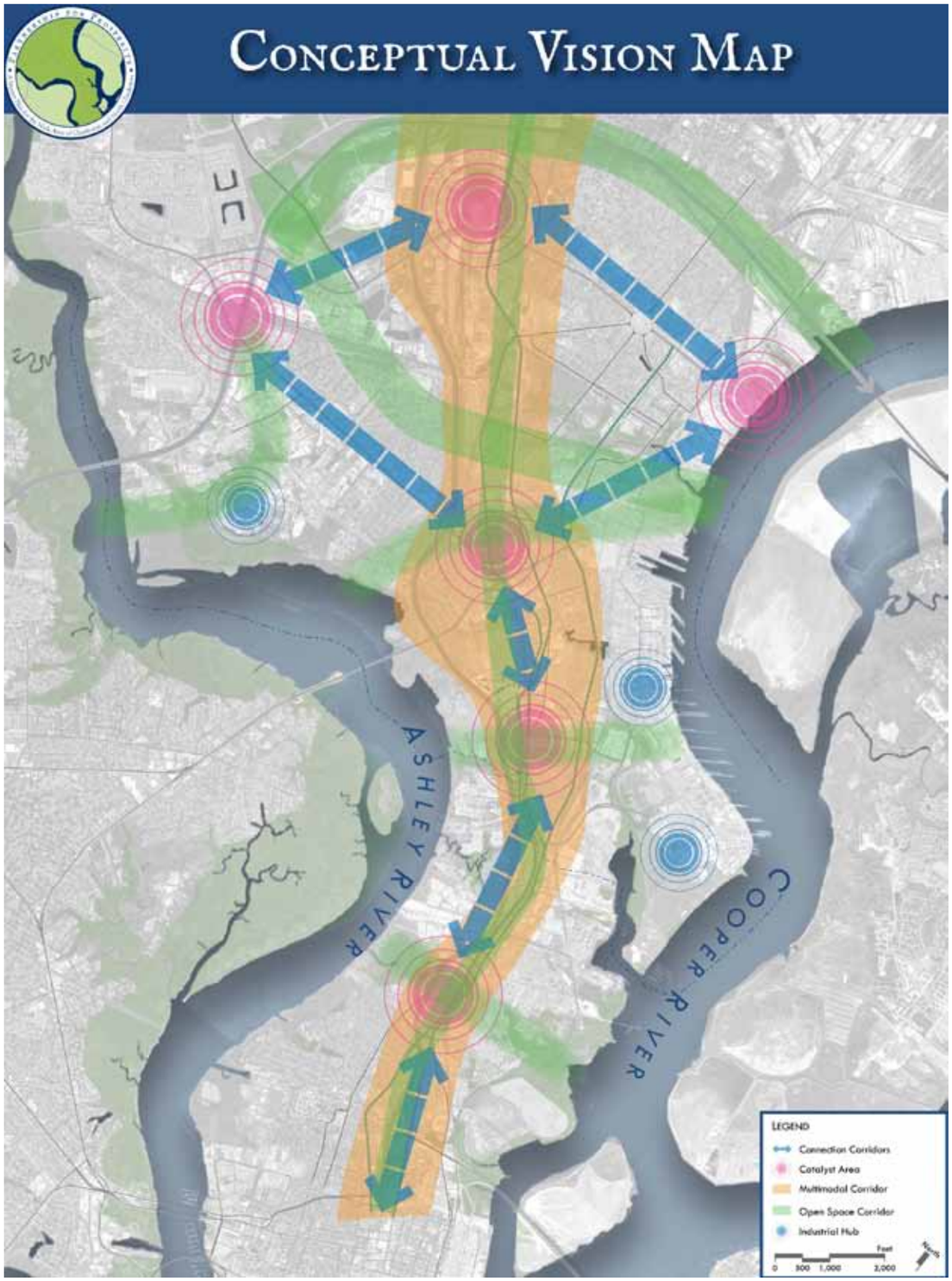


Figure 4.5 Conceptual Vision Map (See Appendix A pg. 203)

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Chapter 5
Vision Outcomes : Urban Framework

This chapter describes the urban framework that can help provide economic sustainability and community viability, defines different patterns of development within the Neck area, suggests improvements to the open space network to support this framework, and identifies eight areas where catalyst development can promote economic opportunity and encourage development and revitalization

Vision Outcomes - Urban Framework

GENERAL

The Neck area is in an excellent economic position for growth and development. It is relevant and important to the region's future thanks to its central location, regional accessibility, number of jobs present, and proximity to major economic drivers, such as the airport, port, Downtown Charleston and emerging economic catalysts like the Clemson University Restoration Institute. The significant number of major employers and development projects already located in the Neck area demonstrates its competitive advantages. Growth in employment and economic investment is expected to continue in the future, through announced plans/projects, ongoing initiatives, and the continuation of the Neck area as a key part of the economic heart of the Charleston region.

Neck area residents historically have not shared in the prosperity produced by the economic investment happening around them. Only a small percentage of residents work in the Neck area, and those who do earn less than non-residents on average. Overall, Neck area residents have lower incomes and are more burdened by housing costs when compared to the rest of the region. Their lower educational attainment levels also make it difficult to get better paying jobs in a competitive regional labor market. Despite close proximity to the region's economic heart (and bearing the brunt of negative impacts from some of its industrial and related transportation activities), Neck area residents and their neighborhoods have found it difficult to improve their situations and tap into the economic strength of the place that they live in.

Given this context, a key goal of the Partnership for

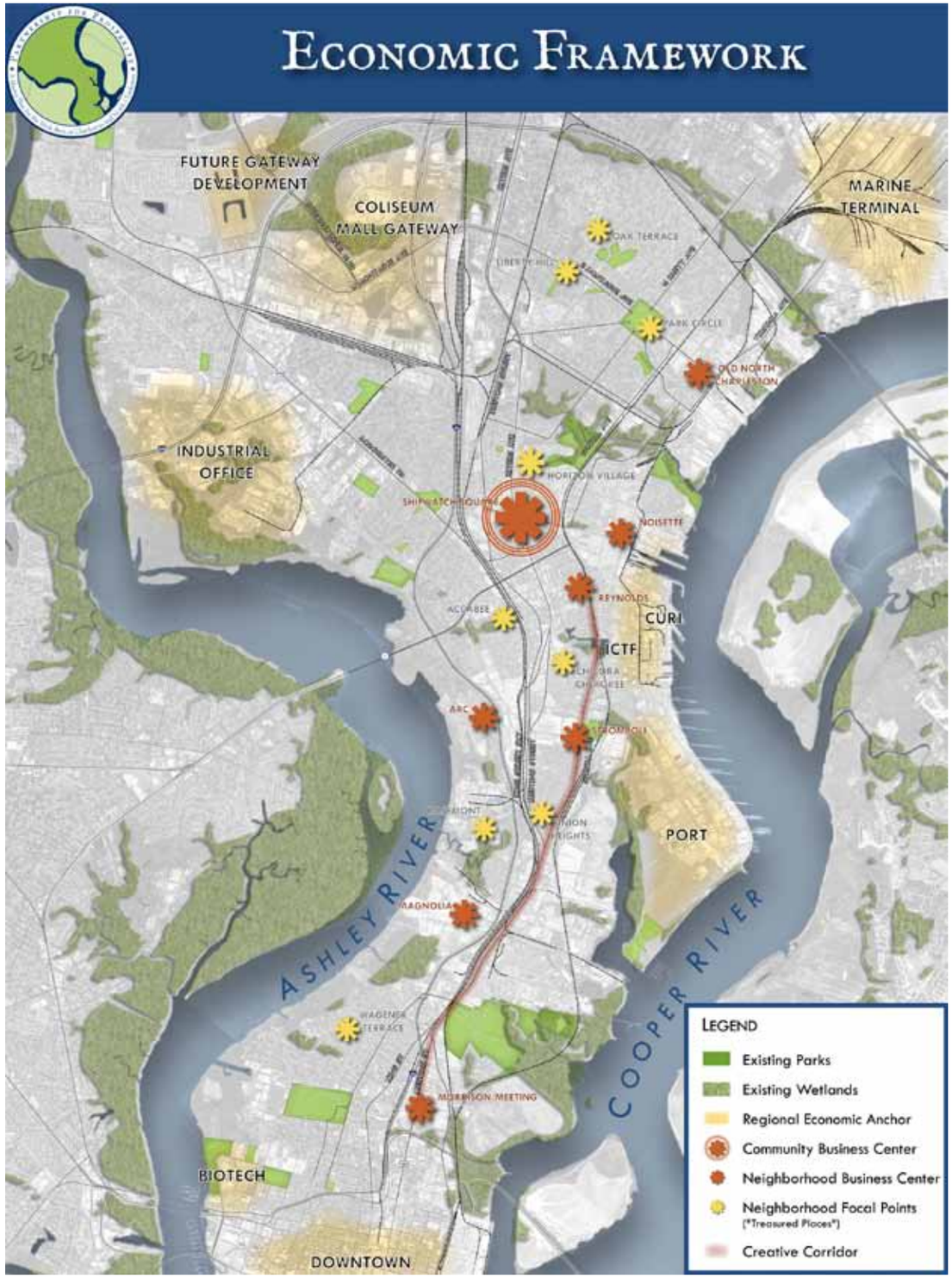


Figure 5.1 Economic Framework (See Appendix A pg. 210)

Prosperity Master Plan is to foster economic opportunities that permeate the Neck area and are attainable by its residents and local businesses. The demonstrated competitive advantage that the Neck area possesses is a valuable thing that should be promoted, expanded, and capitalized upon to generate increasing prosperity. An effective Master Plan will seek to harness that advantage for the benefit of the entire Neck area – from the major business enterprises that power its economy to the residents and local businesses whose well-being are dependent on the quality of the place and the opportunities for economic success it offers. The economic activities in the Neck area are interdependent, so the health of one sector or area has implications for the others.

Accomplishing this goal means focusing on two separate but interrelated objectives:

- **Economic development**: Maximizing and optimizing future employment and investment growth
- **Revitalization**: Achieving and sustaining prosperity for Neck area residents, local businesses, and neighborhoods

These two objectives work hand in hand; success in one makes it easier to accomplish the other. For that reason the pursuit of economic development and revitalization in the Neck area should be a balanced approach that seizes the most promising specific opportunities when they are present but recognizes that a diverse mix of targets, strategies, and programs will ultimately serve the area best in building an economic foundation is both broad-based and long-lasting. The Master Plan should be a guidebook for capturing investment in a competitive marketplace, attracting new residents and businesses to revitalized and high-quality places, and improving the lives and economic opportunities for existing residents and local businesses.

Community Viability

The Master Plan strives to build and/or maintain a resilient community in the Neck that is economically sustainable and can rely on well developed networks and places to ensure its long-term viability. By looking ahead and planning, a resilient community remains agile and adaptive. A resilient community encompasses:

- Economic development
- Community building
- Connectivity and access
- Placemaking

A resilient community responds and adapts to changes in the environment - social, economic, and natural - by looking ahead and planning for shifts in demographics, technology, costs of living, government policy and investments, or other forces with the potential to affect the neighborhood. In an ever-changing environment, the resilient community relies on its well-developed networks and lines of communication to reorganize and reroute information and resources as needed to ensure the long-term viability of the neighborhood. The resilient community strives for greater levels of neighborhood satisfaction knowing that 'place attachment' can mean sustained neighborhood investment and involvement in times of stress.

A great neighborhood has resources that allow all residents to live active, healthful, and fulfilling lives. The foundation of a great neighborhood is its livability—the quality of the built and natural environments, economic prosperity, social stability and equity, educational opportunity, and cultural, entertainment, and recreation possibilities. A great neighborhood is safe, walkable, and inviting, and has attractive and comfortable spaces for playing, relaxing, and socializing. Complete streets accommodate multiple forms of travel throughout the neighborhood. Good transportation access is a fundamental precept for successful industry and commerce. Vibrant business districts are destinations for shopping, dining, and gathering. Local businesses offer goods and services regularly used by residents and also create jobs for the neighborhood's workforce. Social problems such as crime and homelessness are managed through neighborhood partnerships with city government, law enforcement, and non-profits. Trees, natural drainage ways, and other green infrastructure provide a range of ecosystem services to the neighborhood including assimilating pollution, managing stormwater, and supporting wildlife, while also creating beauty.

This mixed use pedestrian space provides local residents with a place to shop, dine and gather.

A neighborhood that is vibrant has a distinct sense of place and identity and is supported by strong social networks and organizations. Information and resources flow smoothly through the community from where these assets exist to where they can be best applied. The people within a thriving community feel cared for, acknowledged, and yearn to give back to their community as a whole as well as to the people within it. There is a sense that the community becomes greater than the sum of the parts. Community involvement provides residents a sense of pride in and ownership of their community.

Continued collaboration between the City of Charleston, City of North Charleston, Charleston County, the Ports Authority, Joint Base Charleston South Carolina Department of Transportation, and the Neck community is essential to fulfilling the vision and implementing the Partnership for Prosperity Master Plan and addressing issues or opportunities which may emerge in the future. Strong relationships are a key element to a resilient and livable Neck area for the next 50 years and beyond.

Land Use and Urban Design

The Master Plan for the Neck Area is grounded in several closely linked urban design principles. Each of these principles represents a distinct concept, but each reinforces the others within the context of the Master Plan. This interconnected approach helps create efficient land use and transportation systems, while embracing and promoting the assets and heritage of the Neck area.

Coordinated planning and development effectively integrate these urban design principles. Quality housing choices that enhance a sense of community among neighborhood residents; pedestrian-friendly retail and civic streets; open spaces offering a variety of environmental and recreational amenities; and different transportation options all represent elements, that when well designed and considered as one larger system, contribute to good urban form and provide vitality to the Neck area.

The following urban design principles embrace the unique qualities that characterize the Neck area and are meant to promote development that reinforces and preserves those characteristics:

- *Establish catalyst areas as centers of activity*

  Catalyst areas are focal points of the community and places where regional or local services are concentrated. They are the hubs where regional and local transportation networks converge to create a high level of access for various purposes. There will be a variety of activity centers within the Neck area, each containing diverse elements to cater to the varying needs of residents and visitors. Activity centers can include employment centers, shopping centers, entertainment centers, and neighborhood centers. Each center will exude a strong and distinctive sense of place; some, like the Mall Drive area, with a more regional context and others, like the Stromboli corridor, with a more neighborhood focus.

- *Promote connectivity*

  Connectivity facilitates pedestrian or vehicular movement within the community by providing opportunities for people to reach a variety of destinations from a given point. To accomplish this, the Neck area should be connected by a functional interconnected network of streets and blocks. This network should be maintained and improved in ways that accommodate various modes of transportation balanced the with needs of pedestrians. Connectivity should enhance linkages to surrounding neighborhoods and other areas, especially public services (such as schools, transit, and civic uses) and amenities (such as parks, water bodies, and natural open spaces).

- *Create a sense of place that strengthens communities*

  Sense of place is about more than the physical environment of an area. It is about the people who live and work there, the culture of their social and economic groupings, and the way they interact with the environment. Sense of place is the intangible characteristics of place that make it attractive to actual and potential residents and influences their behavior in observable ways. Urban design and sense of place are inextricably linked and both should be seen in a broad context, with good urban design strengthening a community's sense of place.

Good urban design strengthens a community's sense of place.

- *Promote and facilitate social interaction*

  The Neck neighborhoods should contain usable public spaces that provide people with the opportunity to meet and connect each day. These interactions create support networks, improve wellness, and promote a sense of place.

- *Emphasize transportation options*

  Enhance public transportation by making it more comfortable and convenient to use. Create a balanced circulation system that promotes mobility choice (pedestrians, automobiles, bicycles, and transit).

- *Provide a diversity of land uses*

Neighborhoods should be comprised of a rich mix of land uses. Such diversity uses land efficiently, provides convenience, and contributes to unique urban experiences. This diversity also includes preservation of land for open spaces and environmental habitat.

- *Ensure neighborhood compatibility*

  A cohesive neighborhood environment depends on buildings that complement each other. The size, shape, and location of buildings, as well as the uses contained in them, create patterns that define neighborhood character. New development should be compatible with the pattern of its existing context.

- *Create pedestrian-friendly design*

  Urban areas are for people and an environment designed to accommodate the pedestrian heightens human experience and sense of place. Neighborhoods should accommodate shopping and services within a five minute walk radius. New development should be designed to create an attractive, comfortable, and safe environment for all users.

Pedestrian-friendly spaces can serve as gathering spaces for community events, such as a movie in the park.

NECK AREA DISTRICTS

One of the central themes of the Partnership for Prosperity Master Plan is to help define a more organized pattern of development in the Neck area, for both transportation

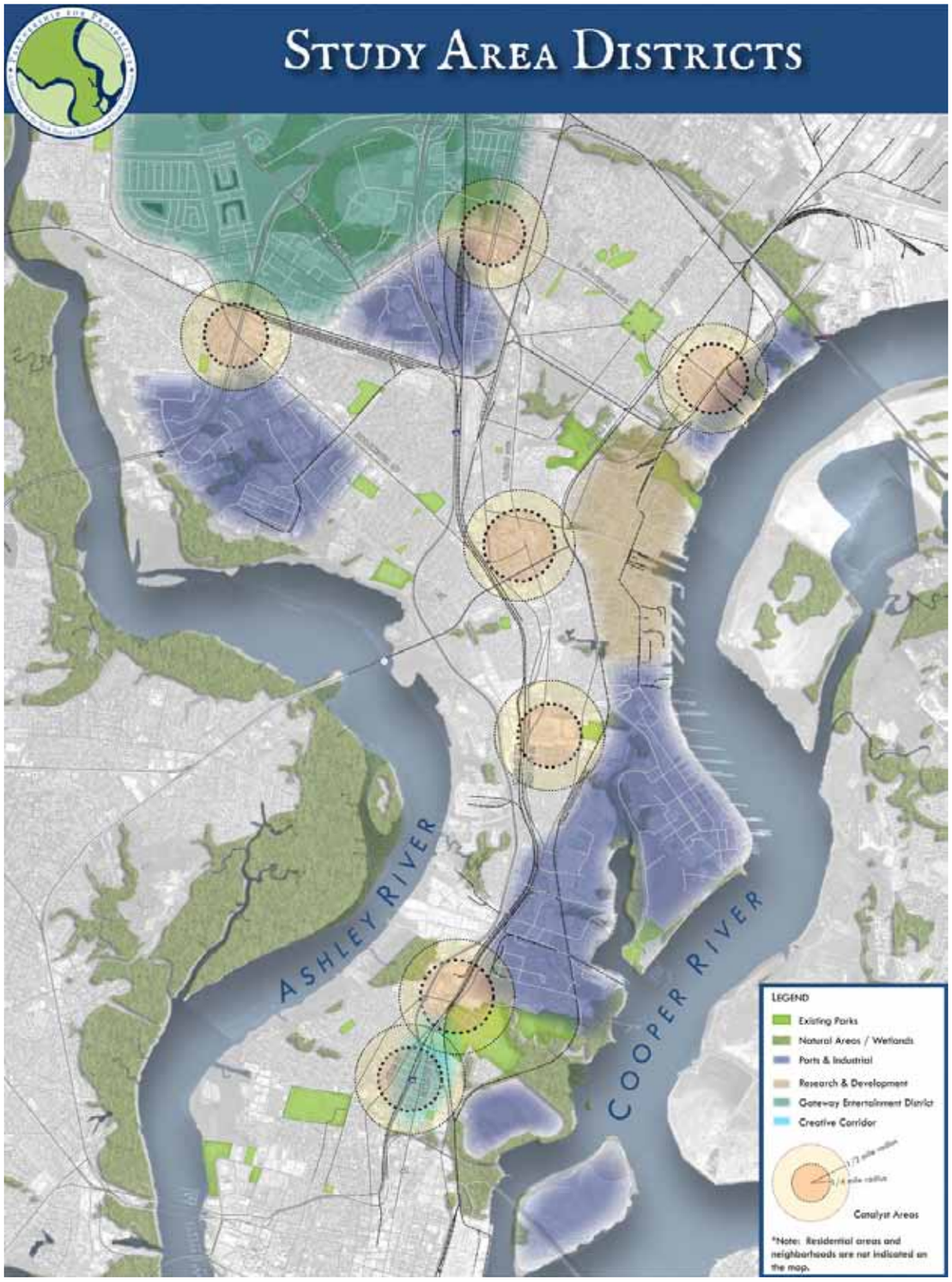


Figure 5.2 Study Area Districts (See Appendix A pg. 208)

and land use. The objective is to clarify expectations for areas that should remain primarily residential in character that are free from industrial encroachment, encourage the clustering of industrial- and port-related development in areas with excellent rail and highway access, define areas of synergy for emerging research and development activities, and establish mixed use centers that can become catalysts for diverse housing and focal points for effective and efficient multimodal transportation. By creating this organizing pattern using broad districts as a guide to more detailed plans, the study partners for the Neck area can establish cooperative working agreements with the private sector, community stakeholders and non-traditional partners to fulfill the Master Plan's recommendations over time.

Figure 5.2 presents a general map showing the major districts of the Neck area. The map is not intended to set precise boundaries or formally define the districts in any specific way. Rather, it is meant to complement the vision map presented earlier (see **Figure 4.5**) by presenting a unifying framework for existing and future development activities in each area. One of the benefits of this framework is that it provides the opportunity for each district to establish a unique character. By clarifying the urban design intent of each district, private investors and developers have a baseline expectation of the future urban form on which to rely over time. The map also recognizes that many development patterns are set in the study area, but with redevelopment and increasing demand for freight movement by commercial vehicle and rail, more clarity is needed to guide future activities.

The districts are as follows:

Gateway Entertainment District

Tanger Outlet Center

The area encompassing the Charleston International Airport, Tanger Outlet Mall, the North Charleston Coliseum and North Charleston City Hall is an emerging regional destination hub for mixed use development with substantial capacity for increasing development density and intensity. With the confluence of I-26 and I-526 near the airport, Rivers Avenue and Montague Avenue, the area benefits from excellent regional transportation access. The challenge is in its disaggregated nature, lack of street connectivity and large parcels with a suburban design that contributes to traffic congestion and limits the viability of transit and active transportation modes. The area features numerous hotels with a growing demand for convention and conference meeting space, and venues for entertainment acts and other events. The area has a large and growing workforce that includes highly skilled technical fields, white collar professions and service sector employees. The Gateway Entertainment District is often the first experience many people have of the greater Charleston area, and is frequently used as a base from which trips into the Charleston Historic District, the beaches and other parts of the region occur. However, it has the potential of becoming an 18- to 24-hour destination in its own right.

A strategy to unify the Gateway Entertainment District is needed. As described in subsequent sections of this report, that must include creating a finer-grain street network with improved connectivity, a locally-oriented transit network that can efficiently connect the existing and emerging focal points within the district, and designation of one or more regional transit stations, such as for commuter rail and Bus Rapid Transit that would provide an anchor mixed use development. Height and visibility restrictions related to the Air Force Base and Charleston International Airport will have an effect on development form, but infill and redevelopment opportunities mean the area can support a substantial increase in density through proximity of buildings and smaller block patterns, which will help improve the area's accessibility for non-motorized travel and transit.

Research and Development

Clemson University's wind-turbine drivetrain testing facility

The area surrounding Clemson University's Restoration Institute wind turbine facility along the Cooper River on the former Naval Yard is planned to become a center for clean energy employment and research, and other forms of technology development. The existing warehouse and World War II period buildings provide a functional and relatively inexpensive template for R&D start-up activity, along with generally compatible uses such as light manufacturing and artist showroom/work spaces. New residential development as part of the Noisette plan offers a good fit with "cleaner" forms of light manufacturing, research and technology. Those activities benefit from proximity of similar uses. The area will still need to accommodate some commercial vehicle traffic to access industrial uses along the Cooper River and gain access to I-526, but an expansion of industrial development and intermodal facilities into the area is incompatible with the area's redevelopment and emerging uses.

Industrial Development

The legacy of the Neck area is that industrial and related uses were scattered throughout much of the area, creating conflicts with residential neighborhoods and leaving contaminated soils, but also providing workforce employment. The Port and its expansion is a major economic driver for the region and state, and it depends on efficient commercial vehicle travel and rail access. While dispersed

intermodal facilities and warehousing is a fact of life in the Neck area and will continue, efforts should be made to focus industrial related development to areas where it already exists and is supported by existing and planned transportation improvements to ensure better interstate highway access. The industrial area along the Cooper River in North Charleston may eventually give way to residential or mixed use development, but for purposes of this Master Plan it is assumed those uses will continue until market forces dictate otherwise.

Creative Corridor

The City of Charleston operates a Digital Corridor (www.charlestondigitalcorridor.com) initiative that has been successful at creating a physical, business, and social environment that helps companies and workers in technology and related industries to thrive. The initiative has two centerpiece properties in Downtown Charleston that serve as business incubators and work spaces where startups and small companies can find flexible, tech-friendly work spaces that are adaptable to their needs. The influence of the Digital Corridor and the size of the regional knowledge economy are growing and neighborhoods in and around the downtown area are beginning to show the influence of an economic sector that tends to prefer distinctive urban, walkable, mixed-use environments for working and living. In order to capitalize on and continue to expand this influence, the district centered on Meeting Street at the southern end of the Neck area should be planned to preserve the unique and edgy character of an urban environment while adding public and private amenities, enhancing multimodal access (especially transit), and encouraging development that contributes to the diversity and livability of the district.

Residential Neighborhoods

The remaining areas without coloring on the map should remain primarily residential in character. These areas represent a variety of existing conditions, including areas that need stabilization, areas that are in active revitalization and areas that have the potential for new development, including workforce housing and densification. While there continues to be non-residential development along many of the arterial and collector roads through these areas, the dominant character is residential, and efforts should be made to buffer these areas from industrial uses and heavy regional traffic. By establishing mixed use centers at key nodes where good regional and local transportation access exists, it lessens the potential for intrusive non-residential development in these areas.

As the remainder of this chapter and subsequent chapters explains, the character and form of development and transportation facilities will vary throughout each of the districts, fitting the context of the surrounding neighborhood or corridor.

Catalyst Development

Economic Opportunity and Evidence

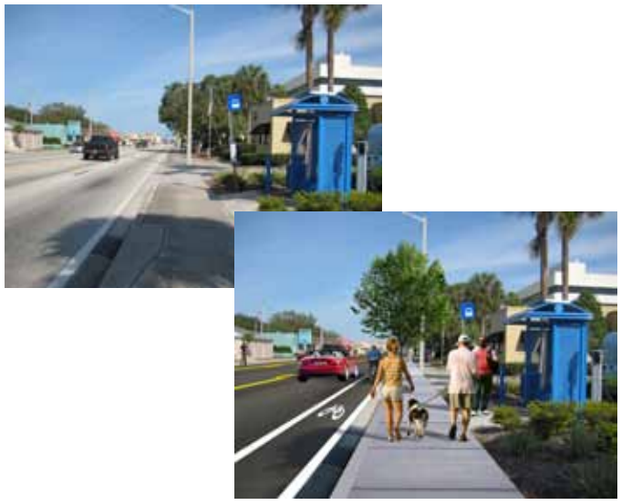
Development of catalyst areas as shown on the vision map represents a major economic opportunity for the Neck area. Simply attracting new construction and investment to the area would create economic benefits, but encouraging economic development and revitalization to take place in a form that connects the local community with an enhanced economy through better accessibility can open up opportunities for creating sustainable long-term prosperity. Both existing residents and new participants can benefit from this approach.

Redeveloping Shipwatch Square will create economic benefits for the area.

The Master Plan focuses on encouraging the redevelopment and reuse of existing properties, which creates many economic benefits for the local community. Local spending on construction and related activities related to site cleanup and building renovation flows directly into the local economy, producing a multiplier effect that supports other businesses and job creation. A study of brownfield cleanup impacts (Paull, Evans. "The Environmental and Economic Impacts of Brownfields Redevelopment." Working Paper, Northwester-Midwest Institute. July 2008.) found that one job was created for every $5,700 spent on site preparation. The type of work involved in redevelopment also produces the potential for more local benefits. Research on national construction spending data has shown that renovating existing residential buildings produces about 50 percent more jobs than building new ones. This is because 41 percent of renovation project costs go to labor, while for new construction labor makes up only 28 percent of project costs. Catalyst area development will spur demand for construction and related skills, and local neighborhoods will be a convenient supply of labor as long as the skills are available. This presents an opportunity to use redevelopment activities as a framework for skills development – supplying local labor for local projects, spurring community engagement in the revitalization process, and creating jobs that can't be relocated and create spin-off benefits for the local economy.

The vision for the Neck area is of a place with characteristics that are increasingly coming to be seen as competitive advantages in attracting jobs and new investment. Diverse, distinctive, and densely developed places are proving to be highly demanded by the sorts of innovative companies and workers that are being targeted by state, regional, and local economic development initiatives. Connected, walkable neighborhoods with unique character and flexible, low-cost building space are valuable tools for attracting high-tech and creative businesses, as has been shown by the success of the City of Charleston's Digital Corridor program. Catalyst area development can synchronize new and rehabilitated development product (homes, work spaces, etc.) with the Neck area's distinctive characteristics and the preferences of the target industries identified as the future of the regional economy, to make the Neck area a highly competitive center for new investment.

Finally, the Master Plan envisions a more accessible and connected Neck area, which will improve its location efficiency – a benefit and advantage for both households and businesses. With new high quality transit service, dedicated facilities for biking, and walkable, interconnected places, transportation to, from, and within the Neck area would be easier and less costly, facilitating economic activity and improving quality of life. Workers could spend more time with their families and put some of the money spent on transportation to better use, such as housing. Companies would have happier, healthier, and more productive employees, which are all documented benefits of shorter commutes. The benefits of location efficiency can be seen in the price/value premium of real estate that is conveniently located near rail transit service. A substantial body of research has shown that all else being equal, homes, offices, and retail stores become more valuable the closer they are to a transit station. Not only is this premium a benefit to homeowners, developers, and property investors, but it can also potentially be available for public investment through "value capture" techniques such as tax increment financing (TIF) that redirect the increased property taxes generated by redeveloped properties to a fund for the purposes of improving infrastructure, providing affordable housing, and encouraging more redevelopment in the surrounding area. Location efficiency is the principle that makes the accessibility, proximity, and connectivity of a place into economic development advantages.



The images above illustrate how a street can transform within the existing right-of-way width to become more of a complete street.

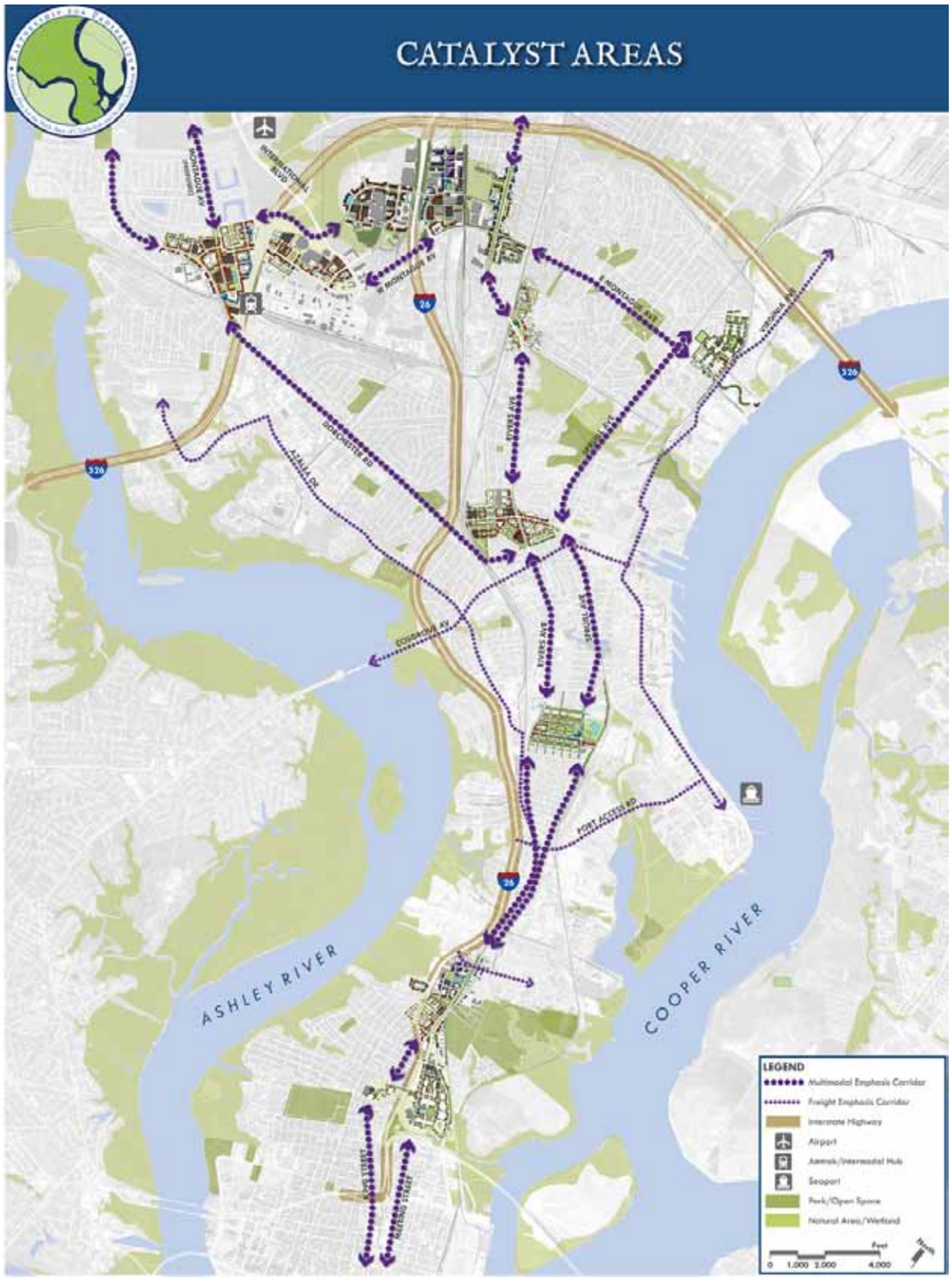


Figure 5.3 Catalyst Areas (See Appendix A pg. 219)

Catalyst Areas

The Master Plan identifies eight catalyst areas (see **Figure 5.3**). Each of these areas is listed and discussed below.

- South of Mount Pleasant Street
- North of Mount Pleasant Street
- Stromboli Corridor
- Shipwatch Square
- Olde North Charleston
- Amtrak Station area
- Mall Drive area
- Convention Center

Preliminary programs for each catalyst area are conceptual and were developed using the existing zoning and character of an area as a starting point for density and building height, next adding potential infill and redevelopment parcels, and finally defining catalyst opportunities where upzoning to a mixed-use designation could create community focal points and improve the organization and connectivity for both land use and transportation. Programs were then checked against economic trends and revised as appropriate to maintain realism with the market. Phasing for each catalyst area was created by projecting the potential development availability of catalyst opportunities, timing of transit services, orderly transition of uses and character within a given area.

South of Mount Pleasant Street

Context/Setting

The South of Mount Pleasant Street catalyst area (see **Figure 5.4**), located just north of downtown Charleston and the established residential neighborhoods that surround the Citadel and Hampton Park, is a community gateway. It is still part of the well-connected grid system that originates in the historic district, with Meeting Street and King Street, primary roadways providing access to downtown from points along the peninsula, running through the heart of the catalyst area. Both I-26 (coming from the northwest along the peninsula) and US 17 (coming from the northeast and Mount Pleasant) have exits providing direct access to major roadways in this gateway area. There are two large sites (Bridgeview Village and the former Promenade development area) that are located along the Cooper River east of the railroad tracks with single points of entry. As freight traffic increases, these areas may face access issues and vehicular delays.

Catalyst Opportunities

This catalyst area is located within the Gateway District of the Charleston Digital Corridor. This initiative, a creative effort to promote Charleston's "knowledge

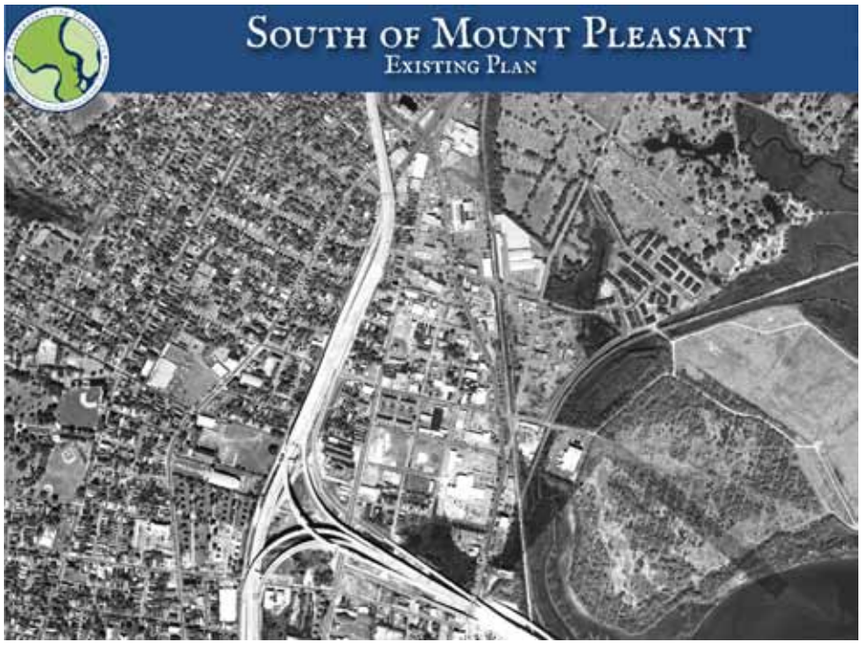


Figure 5.4 South of Mount Pleasant Street Catalyst Area

community," offers incentives, resources, and support to entrepreneurs and professionals in an effort to facilitate a business and social environment where technology companies can thrive. With companies like Radiate Technologies and Equiscript LLC already established in areas along the fringes of the catalyst area, the Charleston Digital Corridor is actively marketing sites on Meeting Street to prospective occupants. The area should take advantage of this established marketing network to further promote and develop catalyst opportunities along both Meeting Street and Morrison Street.

Form and Development Concepts

Building sizes in the southern portion of the catalyst area are envisioned as mid-rise (3-5 stories), similar to the scale of the Cool Blow building, with one or two landmark buildings at 7-9 stories in order to visually rise above the elevated interstate sections located along the perimeter of the area. This height would also allow views of the Ashley and Cooper Rivers and be an orienting gateway feature for travelers entering Charleston. In the northern portion of the catalyst area, building sizes are envisioned as low-rise (1-3 stories) to act as a transition and complement the scale of existing uses.

Meeting Street runs along the western edge of the catalyst area and serves as its connection to the transportation spine that connects the entire Neck area both internally and to points beyond. New transit stops for a future Bus Rapid Transit (BRT) or Light Rail Transit (LRT) system are planned for the intersections

of Meeting Street with Brigade Street and Romney Street. An extension of the existing shared-use path under I-26 improves accessibility for non-auto travel modes. The grid street system within the catalyst area facilitates pedestrian and bicycle connections to transit and other places within the area.

The preliminary planning level program derived from Long Term Phasing Concept Plan shows that approximately about 850 residential dwelling units and 1,000,000 square feet of non-residential uses could be developed in this catalyst area.

PHASING

While the short-, intermediate-, and long-term phasing within this catalyst area will be dependent on a combination of economic conditions, regulatory policies, capital funding, and free market forces, the following graphics illustrate a general sequence of infill development, redevelopment, and preservation that could occur within the catalyst area, based on community input and the development forms described above. The projects shown are meant to convey a conceptual progression of planned and orderly development within the area, not to dictate future uses or specify time frames for individual private properties. (Note: this is typical for the phasing in all of the catalyst areas).

Short Term Phasing / 1 to 5 Years (see ***Figure 5.5***)

- Promote the Charleston Digital Corridor along Meeting Street and Morrison Drive. (Public/Private)
- Provide community open space to serve the emerging mixed use, including a skate park and multi-use trail. (Public)
- Begin to fill in the street faces with mixed use development. (Public/Private)
- Increase pedestrian and bicycle mobility through sidewalk improvements and the addition of bicycle lanes. Create a link between King Street and Meeting Street along Romney Street. (Public)
- Create a gateway element along Morrison Drive to identify the area and act as an entry feature for I-26 traffic accessing the downtown cruise ship terminal. (Public)

Intermediate Term Phasing / 6 to 10 Years (see **Figure 5.6**)

- Establish transit stops for BRT/LRT routes on Meeting Street at both Brigade and Romney Streets. (Public)
- Continue mixed use development and redevelopment, including civic uses. (Public/Private)
- Begin conversion of strip centers along King Street to mixed uses. (Public/Private)
- Designate additional open space areas to create community focal points recreation opportunities, and serve new residential development. (Public)

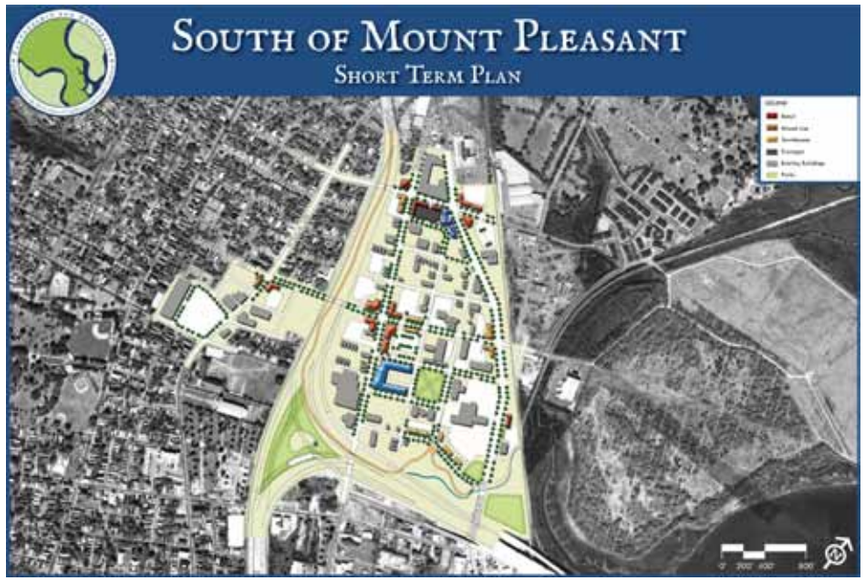


Figure 5.5 Short Term Phasing Plan – South of Mount Pleasant Street Catalyst Area (See Appendix A pg. 224)

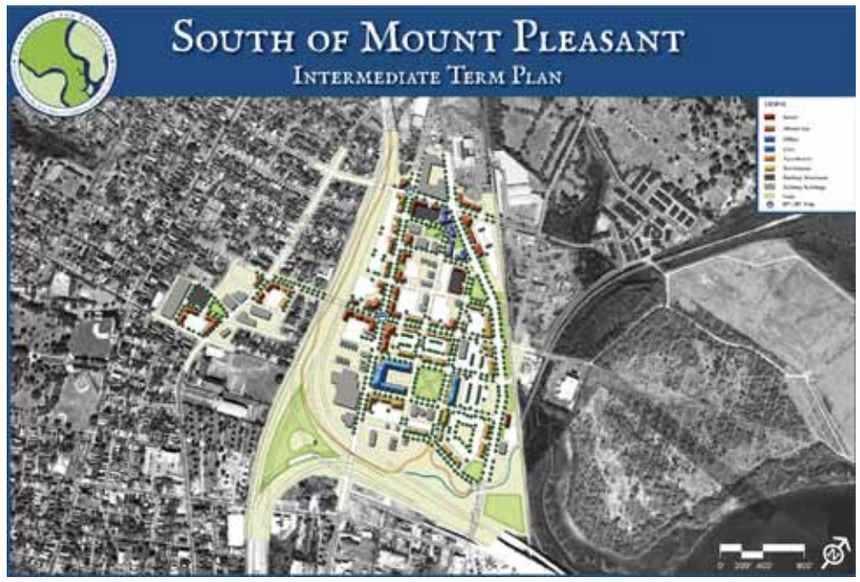


Figure 5.6 Intermediate Term Phasing Plan – South of Mount Pleasant Street Catalyst Area (See Appendix A pg. 225)

Long Term Phasing / 10+ Years (see **Figure 5.7**)

- Continue development and redevelopment of parcels to complete blocks and improve area connectivity. (Public/Private)
- Create a gateway element on Romney Street east of Morrison Drive to identify the Laurel Island development. (Public/Private)

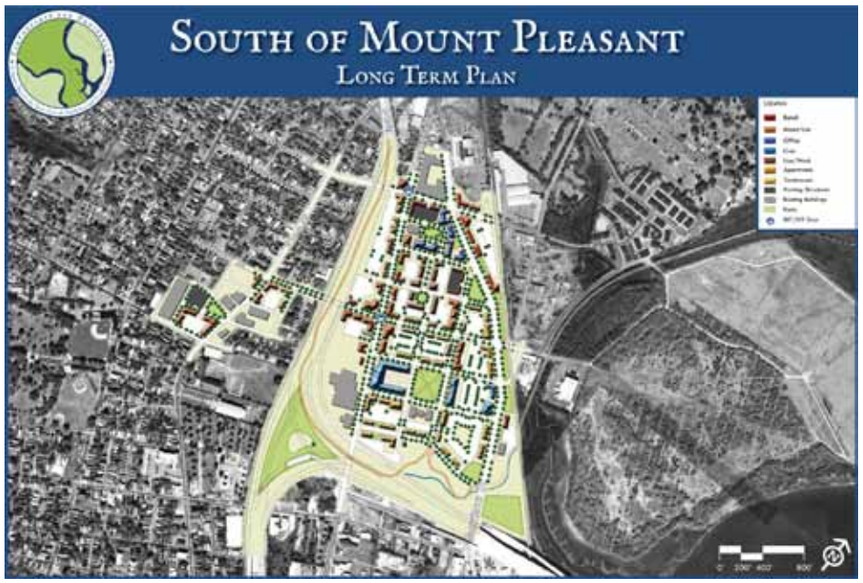


Figure 5.7 Long Term Phasing Plan – South of Mount Pleasant Street Catalyst Area (See Appendix A pg. 226)

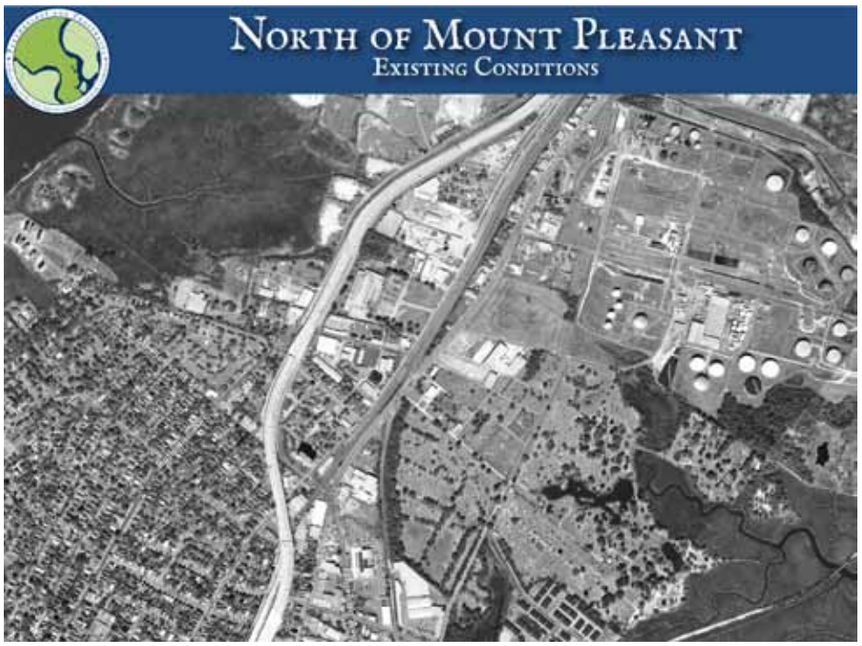


Figure 5.8 North of Mount Pleasant Street Catalyst Area

North of Mount Pleasant Street

Context/Setting

The North of Mount Pleasant Street catalyst area (see **Figure 5.8**) is a transitional district. While the southern fringe still contains remnants of the grid street network projecting north from downtown, this residential area soon gives way to commercial and light industrial uses between I-26 and King Street, ending the pattern of street connectivity. The narrow wedge of land between King and Meeting Streets contains railroad tracks and a mix of residential and small commercial lots, while on the east side of Meeting Street, Magnolia Cemetery provides a large open space that buffers some of the Cooper River tributary areas. Large scale industrial operation border Magnolia Cemetery to the north. There are a number of historic structures in this area that should be preserved or redeveloped with appropriate uses.

Catalyst Opportunities

With this area envisioned as a transitional district with a mix of both residential and non-residential uses, catalyst opportunities should be oriented towards both residential and public uses to help promote economic opportunity and provide needed community services for the area residents. Accompanying the residential uses should be open space for recreation that is much lacking in this part of the Neck area. There are several vacant or underutilized properties along King Street that could provide development sites and create new neighborhood destinations.

Form and Development Concepts

The center of this catalyst area will be the Meeting/Mount Pleasant intersection; buildings in this area are envisioned as mid-rise (5-7 stories) with higher density uses around a transit core and access points to an extended shared-use path under I-26. This high level of accessibility and connectivity is expected to enhance the prospects for development and spur greater levels of activity in this location. Other areas will be mid-rise (3-5 stories) transitioning down to low-rise (1-3 stories) adjacent to existing uses, especially to the north near open space areas and industrial uses. Another transit stop is planned for Greenleaf Street to enhance accessibility from the north end of the catalyst area to other points along the Neck area's multimodal spine.

The preliminary planning level program derived from the Long Term Phasing Concept Plan shows that about 400 residential dwelling units and 700,000 square feet of non-residential uses could be developed in this catalyst area. Residential product developed for each phase of the catalyst area transition should include a variety of housing options for low income seniors in the event that the Joseph Floyd Manor is redeveloped in the future for other uses.

Phasing

The following graphics illustrate the transition of uses and broad-brush phasing within this catalyst area:

Short Term Phasing / 1 to 5 Years (see **Figure 5.9** and **Figure 5.10**)

- Begin to fill in the street face of King Street and Meeting Street with mixed use and light industrial development. (Public/Private)
- Extend the shared-use path (off-road trail) under I-26 to connect existing neighborhood areas and new open spaces. (Public)
- Increase pedestrian and bicycle mobility and access through sidewalk improvements and the addition of bicycle lanes along Meeting Street. (Public)

Intermediate Term Phasing / 6 to 10 Years (see ***Figure 6.11*** and ***Figure 6.12***)

- Establish transit stops for BRT/LRT routes on Meeting Street at Morrison Drive and Greenleaf Road. (Public)
- Redesign the Mount Pleasant Street/Meeting Street intersection to eliminate acute angles and improve traffic flow; create a mixed use core around the intersection. (Public/Private)
- Continue mixed use and light industrial development, as well as community civic uses. Introduce residential products as extensions of existing neighborhoods. (Public/Private)

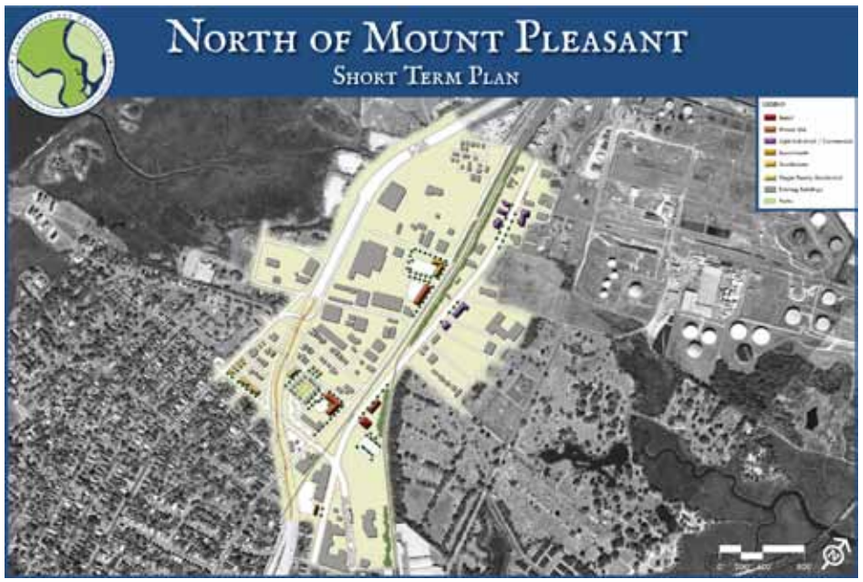


Figure 5.9 Short Term Phasing Plan – North of Mount Pleasant Street Catalyst Area (See Appendix A pg. 227)

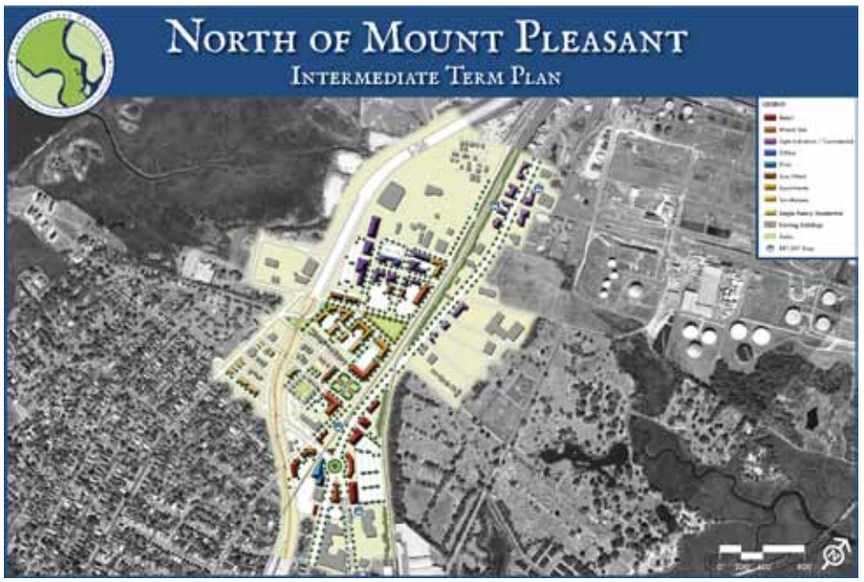


Figure 5.11 Intermediate Term Phasing Plan – North of Mount Pleasant Street Catalyst Area (See Appendix A pg. 228)

Figure 5.10 Short Term Phasing View– North of Mount Pleasant Street Catalyst Area (Meeting Street and Morrison Drive intersection)

Figure 5.12 Intermediate Term Phasing View – North of Mount Pleasant Street Catalyst Area (Meeting Street and Morrison Drive with redesigned intersection)

- Designate open space areas to create community focal points and recreation opportunities and serve new residential development. (Public)

Long Term Phasing / 10+ Years (see **Figure 5.13** thru **Figure 5.15**)

- Create a mixed use block along Petty Street and Mechanic Street as a pedestrian-oriented gateway entrance into the Magnolia project. (Public/Private)
- Continue development and redevelopment of parcels to complete blocks and improve area connectivity. (Public/Private)

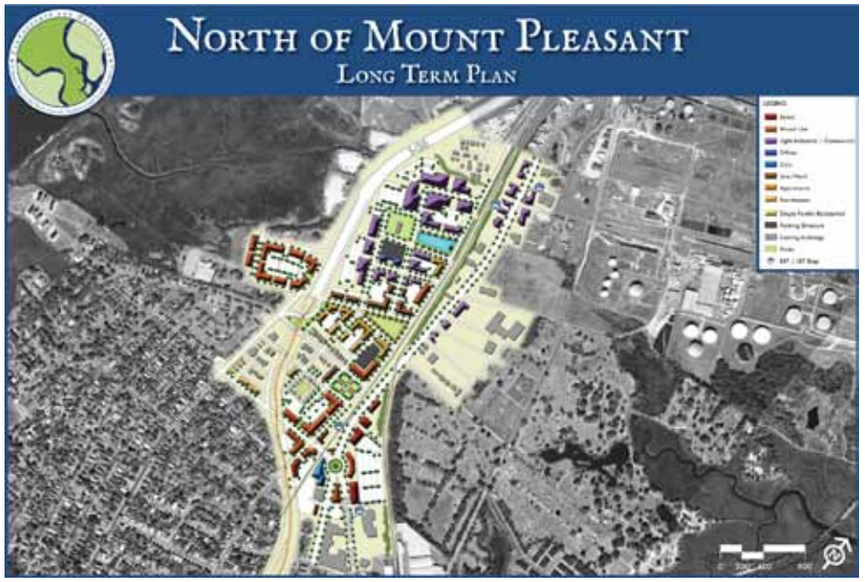


Figure 5.13 Long Term Phasing Plan – North of Mount Pleasant Street Catalyst Area (See Appendix A pg. 229)

Figure 5.14 Long Term Phasing View – North of Mount Pleasant Catalyst Area (Meeting Street and Morrison Drive intersection)

Figure 5.15 Long Term Phasing Sketch – North of Mount Pleasant Street Catalyst Area (redesigned intersection of Meeting Street and Morrison Drive)

STROMBOLI CORRIDOR

CONTEXT/SETTING

The Stromboli Corridor catalyst area (see **Figure 5.16**) is a neighborhood center district today. It consists primarily of large lot industrial uses and container storage areas that effectively separate the Five Mile and Windsor neighborhoods between Carner Avenue and Spruill Avenue. The two neighborhoods are included in the LAMC Area Revitalization Plan. There are some residential, commercial and civic uses along the southern (Hampton Avenue) and northern (Jacksonville Road) fringes of the catalyst area, as well as vacant residential lots. Stromboli Avenue is closed between Column Street and Carner Avenue. Park South, an underutilized City of North Charleston recreation facility, is located on the east side of Spruill Avenue between Stromboli Avenue and Jacksonville Road.

CATALYST OPPORTUNITIES

With this area envisioned as a community focal point, services node and area for social gathering and interaction, catalyst opportunities should be oriented towards civic uses such as a community center, workforce training, health care amenities, education facilities and other programs that help promote economic opportunity and prosperity and provide needed community services for neighborhood residents. There are several large underutilized properties along Stromboli Avenue that could serve as community anchors, providing neighborhood destinations and facilitating multimodal connections between the existing residential areas to the north and south.

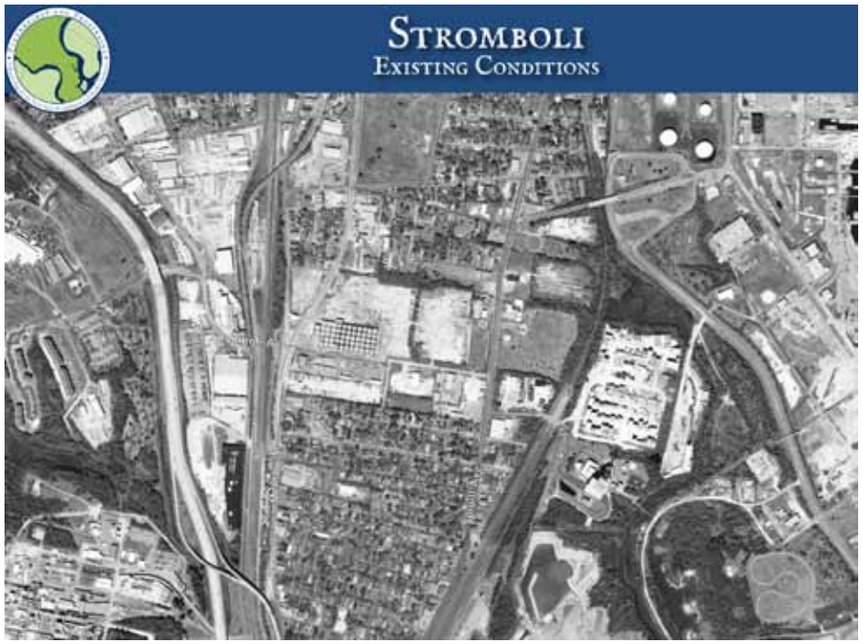


Figure 5.16 Stromboli Corridor Catalyst Area

FORM AND DEVELOPMENT CONCEPTS

The preliminary planning level program derived from the Long Term Phasing Concept Plan shows that about 300 residential dwelling units and 280,000 square feet of non-residential uses could be developed in this catalyst area, which is consistent with preliminary program numbers for the Stromboli area from the LAMC Final Plan. Non-residential uses as envisioned in this Concept Plan include 150,000 SF of retail; 50,000 SF of office/commercial; and 80,000 SF of institutional.

The preliminary planning level program derived from the Long Term Phasing Concept Plan shows that about 300 residential dwelling units and 250,000 square feet of non-residential uses could be developed in this catalyst area.

PHASING

The following graphics illustrate conceptual phasing for this catalyst area:

Short Term Phasing / 1 to 5 Years (see **Figure 5.17**)

- Open Stromboli Avenue between Meeting Street and Spruill Avenue and design it as a "complete street.". (Public)
- Create a gateway element at the Meeting Street/Carner Avenue "Y" intersection at Stromboli Avenue to identify the area. Consider using striped off median areas for an obelisk type identifier. (Public)
- Identify a new community open space on the north side of Stromboli Avenue and create pedestrian connections to existing neighborhoods to the north and south. (Public)
- Promote mixed use development in the areas adjacent to the new community open space. (Public/Private)
- Develop a community center, workforce training, and other civic uses as a community core. (Public/Private)

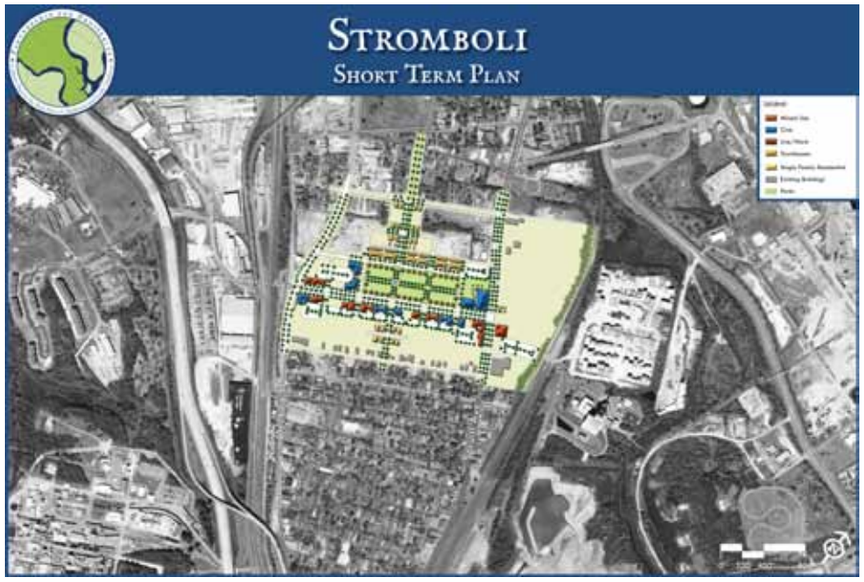


Figure 5.17 Short Term Phasing Plan – Stromboli Corridor Catalyst Area (See Appendix A pg. 230)

Intermediate Term Phasing / 6 to 10 Years (see **Figure 5.18**)

- Develop Park South as a neighborhood park that provides both active recreation areas and a public gathering spaces. (Public)
- Extend Stromboli Avenue to the east of Spruill Avenue in advance of connections to new port area development. Connect to Port Access Road as appropriate. (Public)
- Establish a transit stop for BRT/LRT routes at the Meeting Street/Stromboli Avenue intersection. (Public)
- Continue mixed use development and redevelopment. (Public/Private)

Long Term Phasing / 10+ Years (see **Figure 5.19** thru **Figure 5.21**)

- Continue mixed use development and redevelopment to complete blocks and the street face. (Public/Private)

Figure 5.18 Intermediate Term Phasing Plan – Stromboli Corridor Catalyst Area (See Appendix A pg. 231)

Figure 5.19 Long Term Phasing Plan – Stromboli Corridor Catalyst Area (See Appendix A pg. 232)

Figure 5.20 shows a view along the existing Stromboli Avenue at Spruill Avenue. **Figure 5.21** is a conceptual depiction of that same intersection illustrating how the elements of a "complete street" can come together to provide a neighborhood supportive mixed use destination that helps unite two neighborhoods as a community focal point.

Figure 5.20 Long Term Phasing – Existing Stromboli Avenue View

Figure 5.21 Long Term Phasing – Conceptual Stromboli Avenue View-

SHIPWATCH SQUARE

CONTEXT/SETTING

The Shipwatch Square catalyst area (see **Figure 5.21**) is a community core district. Centered along Rivers Avenue/US 52, a major north/south principal arterial roadway running through the peninsula, this area once thrived as a result of growth and military activities at the Charleston Naval Complex and drew people from all parts of the Neck. At the Rivers Avenue/McMillan Avenue intersection, a gateway entrance into the former Naval Complex area, two shopping centers and a hospital facility now sit closed, underutilized, or under demolition. A variety of

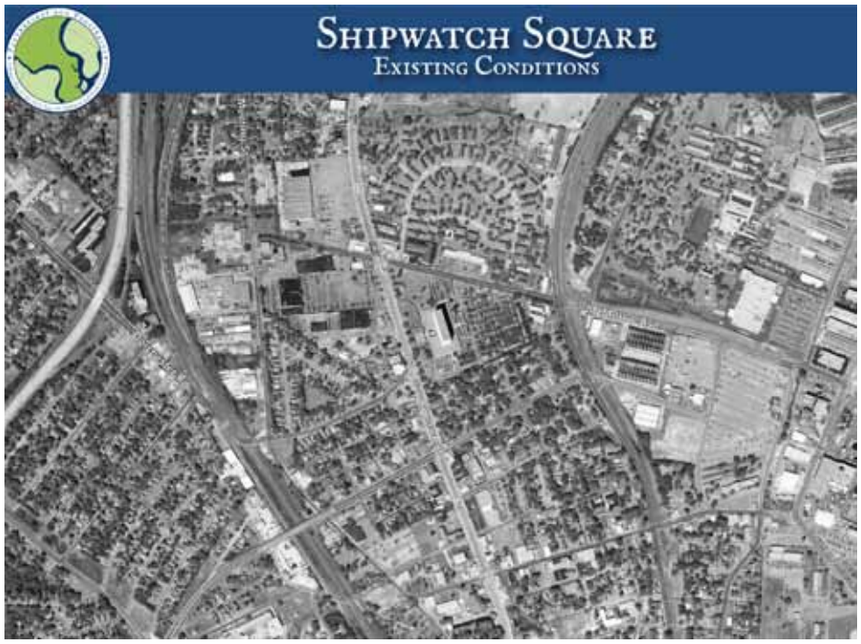


Figure 5.22 Shipwatch Square Catalyst Area

small lot commercial uses, residences once used as base housing, and civic/service uses surround the intersection. A small area of light industrial uses backs up to the railroad tracks along Meeting Street from McMillan Avenue to Dorchester Road. The southern portion of the catalyst area is part of the Chicora/Cherokee neighborhood, which is part of LAMC. Reynolds Avenue, another entrance into the former Naval Complex area and a center of retail commerce when the base was in operation, is a neighborhood center that contains some local commercial uses, offices, and several churches along the area between Rivers Avenue and Spruill Avenue.

Catalyst Opportunities

This area has traditionally been a community center, offering goods and services to people from all portions of the Neck, as well as Navy base personnel living elsewhere. Its central location along the Rivers Avenue spine that traverses the peninsula and the McMillan Avenue crossroad that currently serves as a major entryway into the port industrial area along the Cooper River provides an easily accessible and highly visible location. As such, this intersection can provide the catalyst opportunities that begin the revitalization of this area. With the demolition of the old Shipwatch Square buildings complete, this site is ready for new development that serves the residents and employees of the Neck area. A mixed use core that includes a grocery store and drug store, along with open space for use by new residents and those of adjacent existing neighborhoods, can provide much-needed commercial activity and social interaction, and help spur other retail and civic uses in the area.

Cosgrove Avenue is planned as a "through route" for freight movement to facilitate truck access to I-26 from the ICTF and industrial zones to the east and southeast. This makes the Cosgrove Avenue/Rivers Avenue intersection another important node in this catalyst area, with proposed uses and redevelopment being primarily non-residential and service oriented. Additionally, the blocks along Rivers Avenue between McMillan Avenue and Cosgrove Avenue become an important corridor connecting these two intersections, with an emphasis on multimodal access, pedestrian safety and comfort. Catalyst development can include mixed uses with ground floor retail uses and upper floor office and/or residential, as well as green spaces.

Form and Development Concepts

The Rivers Avenue/McMillan Avenue intersection is the core of this catalyst area and building sizes in this area are envisioned as mid-rise (5-7 stories), similar to that of the existing navy hospital. Development in the core area will capitalize on the regional and local connectivity provided by new transit service: a planned commuter rail station, a planned BRT/LRT station, and an expanded and relocated Super Stop for local bus service. Shipwatch Square will be one of the most connected places in the Neck area. From this core, buildings will transition into mid-rise (3-5 stories) and low-rise (1-3 stories) further back to complement existing uses and neighborhoods. Rivers Avenue is an important freight route within the Neck area, but the Master Plan recommends a number of improvements and actions meant to balance the competing needs of users of this key roadway.

The preliminary planning level program derived from the Long Term Phasing Concept Plan shows that about 500 residential dwelling units and 700,000 square feet of non-residential uses could be developed in this catalyst area.

Phasing

Phasing for this important community center is illustrated in the following graphics:

Short Term Phasing / 1 to 5 Years (see **Figure 5.23** and **Figure 5.24**)

- Establish a mixed use core that includes a grocery store and drug store. (Public/Private)
- Provide a community open space to serve the emerging mixed use, as well as adjacent existing neighborhood areas. (Public)
- Realign McMillan Avenue west of Rivers Avenue to make it perpendicular to Meeting Street. Maintain the existing McMillan Avenue right-of-way during this phase. (Public)
- Fill in the street face along Reynolds Avenue. (Public/Private)
- Increase pedestrian and bicycle mobility through sidewalk improvements and the addition of shared lane markings along McMillan Avenue and Dorchester Road. (Public)

Figure 5.23 Short Term Phasing Plan – Shipwatch Square Catalyst Area (See Appendix A pg. 2233)

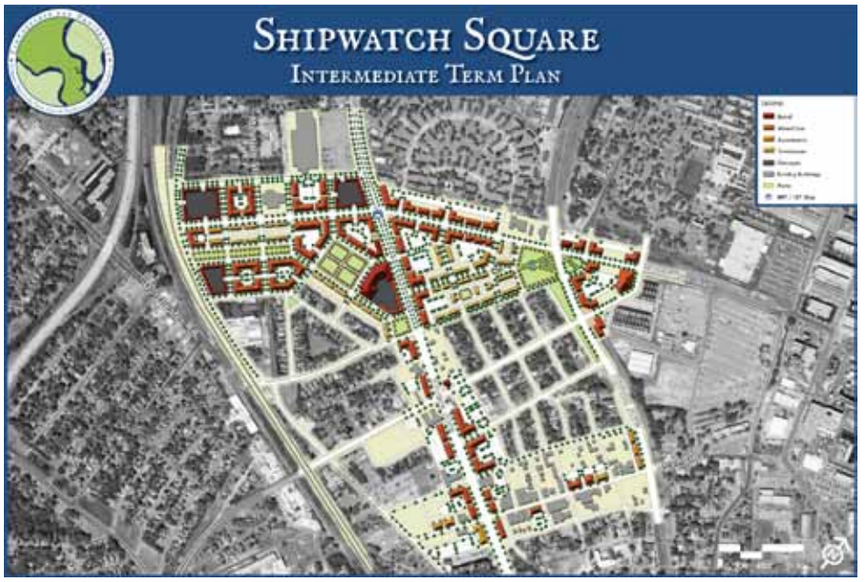


Figure 5.25 Intermediate Term Phasing Plan – Shipwatch Square Catalyst Area (See Appendix A pg. 234)

Figure 5.24 Short Term Phasing View – Shipwatch Square Catalyst Area (McMillan Avenue and Rivers Avenue intersection)

Figure 5.26 Intermediate Term Phasing View – Shipwatch Square Catalyst Area (McMillan Avenue and Rivers Avenue intersection)

Intermediate Term Phasing / 6 to 10 Years (see **Figure 5.25** and **Figure 5.26**)

- Establish a transit stop for BRT/LRT routes at the Rivers Avenue/McMillan Avenue intersection. (Public)
- Convert excess right of way on Rivers Avenue into non-roadway land and narrow the travel lanes in order to create a multimodal street with transit operating in the right of way. (Public)
- Begin redevelopment of the naval hospital site to mixed uses. (Public/Private)
- Transition McMillan Avenue between Rivers Avenue and Spruill Avenue by reducing lane widths or lanes to become a "complete street" and a "front door" to development in the port area. (Public/Private)
- Remove the existing McMillan Avenue west of Rivers Avenue and incorporate into the emerging gridded street network. (Public)

- Continue mixed use development and redevelopment; design in anticipation of and in accordance with a potential commuter rail station location. (Public/Private)
- Begin conversion of surface parking to parking structures in central locations as development density/intensity increases. (Public/Private)

Long Term Phasing / 10+ Years (see **Figure 5.27** thru **Figure 5.30**)

- Establish a commuter rail station one block south of the western terminus of realigned McMillan Avenue. (Public)
- Continue development and redevelopment of parcels to complete blocks and improve area connectivity. (Public/Private)
- Designate additional open space areas to create community focal points and recreation opportunities. (Public)
- Operate a loop shuttle from the commuter rail station to development at the naval base.

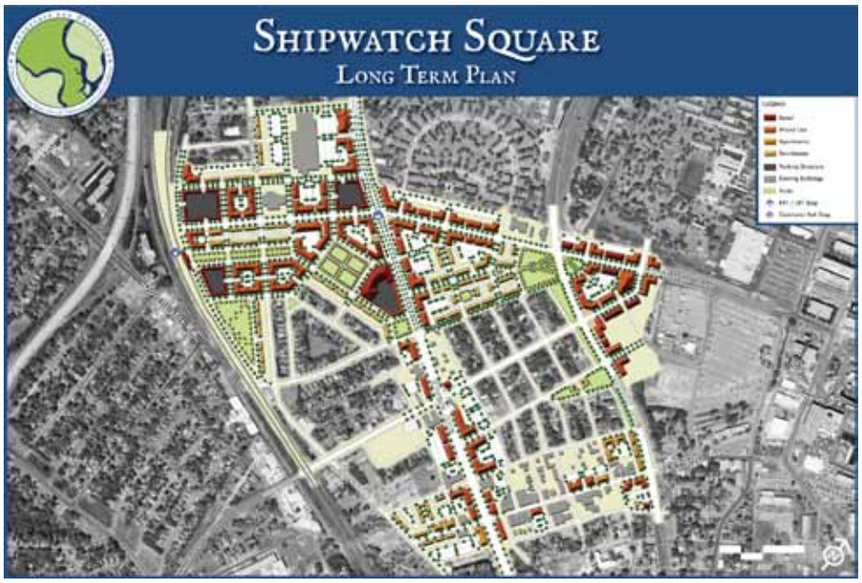


Figure 5.27 Long Term Phasing Plan – Shipwatch Square Catalyst Area (See Appendix A pg. 235)

Figure 5.28 Long Term Phasing Plan View – Shipwatch Square Catalyst Area (McMillan Avenue and Rivers Avenue intersection)

Figure 5.29 shows a view looking south along Rivers Avenue at McMillan Avenue. **Figure 5.30** is a conceptual depiction of that same intersection illustrating how the elements of a "complete street" can come together to transform Rivers Avenue as a transit corridor and central focal point of this catalyst area.

Figure 5.29 Long Term Phasing Plan – Existing Rivers Avenue View at McMillan Avenue

Figure 5.30 Long Term Phasing Plan – Conceptual Rivers Avenue View at McMillan Avenue with introduction of transit

OLDE NORTH CHARLESTON

CONTEXT/SETTING

The Olde North Charleston catalyst area (see **Figure 5.31**) is a neighborhood center district. In the early 20th Century, this portion of North Charleston was laid out, with Park Circle as the center and separate areas designated for residential, commercial, and industrial uses located along streets radiating from that core green space. The catalyst area, situated between the residential lots around Park Circle and the growing industrial uses along the Cooper River, developed as the business district. Montague Avenue and several blocks to the north, primarily between Jenkins Avenue and Virginia Avenue, still function as a neighborhood commercial core, with residential and civic uses to the north and south. North Charleston High School and accompanying athletic fields, as well as CSX railroad tracks, are located west of Jenkins Avenue and industrial uses are located east of Virginia Avenue along the river. There is a large vacant parcel (Garco Property) on the northern portion of the catalyst area east of Chateau Avenue that backs up to a railroad spur.

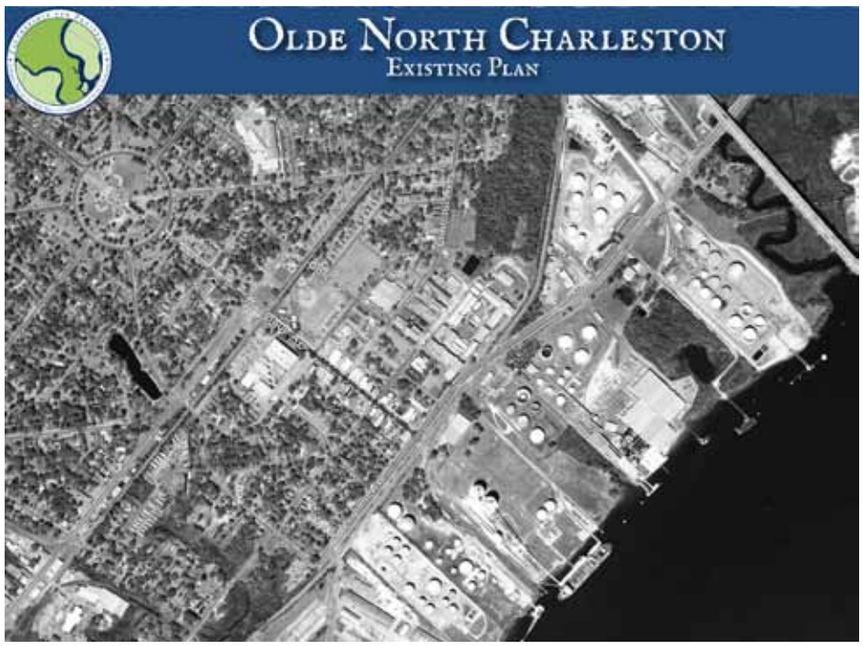


Figure 5.31 Olde North Charleston Catalyst Area

Over the last decade, the revitalization of Olde North Charleston and the Park Circle neighborhood into a desirable destination has become a tremendous success story for the City and an example for the Neck area. That revitalization is a testament to the neighborhood's authenticity, commitment of residents and City leaders, as well as its regional accessibility and traditional urban form. With that success, it is serving as an impetus for improvements and investment in adjacent neighborhoods, thus strengthening the attraction of the area for residential relocations and new business. The continued transformation may eventually put more pressure on industrial uses along that portion of the Cooper River to ready the sites for a change to residential or mixed use development. It will also provide more impetus on making Montague Avenue a stronger gateway corridor from I-26 into Park Circle, thus benefitting the Liberty Hill neighborhood and making the roadway safer for pedestrians and bicyclists.

CATALYST OPPORTUNITIES

Even though this is an established area with a long and rich history, there are still catalyst opportunities along Montague Avenue that can spur new growth along this main street corridor. There are several vacant parcels that can be developed with a mix of workplace, neighborhood commercial or residential uses that can effectively complete the street face. This new development, along with other underutilized buildings, can introduce vertical mixed uses to expand housing choices and provide needed goods and services.

FORM AND DEVELOPMENT CONCEPTS

Building sizes in this catalyst area are envisioned to be low-rise (1-3 stories) to match the existing building heights and street face or complement the neighborhood scale. Multimodal accessibility continues to be provided through local bus service, but access by other modes is enhanced by the addition of a planned multi-use trail for pedestrians and bicyclists alongside a reconfigured Virginia Avenue, as well as new sidewalks and bike lanes or sharrows. This roadway is an important "through route" for freight movement, but also will be designed to accommodate non-auto travel in a separated right of way.

The preliminary planning level program derived from the Long Term Phasing Concept Plan shows that about 250 residential dwelling units and 700,000 square feet of non-residential uses could be developed in this catalyst area.

PHASING

The following graphics illustrate a phasing plan for the conceptual development program envisioned for this catalyst area:

Short Term Phasing / 1 to 5 Years (see **Figure 5.32**)

- Provide a connection for public access to the Cooper River. (Public/Private)
- Redesign the Virginia Avenue roadway cross section to provide separate travel routes for local and freight traffic, as well as create a shared-use path for pedestrian and bicycle use. (Public)
- Develop vacant parcels along Montague Avenue to complete the street face. (Public/Private)
- Begin development of the GARCO parcel as a continuation of existing

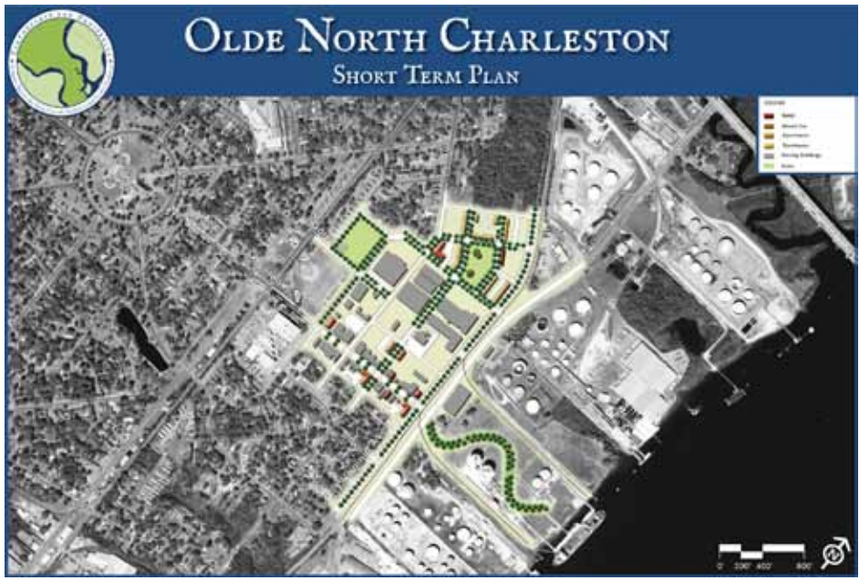


Figure 5.32 Short Term Phasing Plan – Olde North Charleston Catalyst Area (See Appendix A pg. 236)

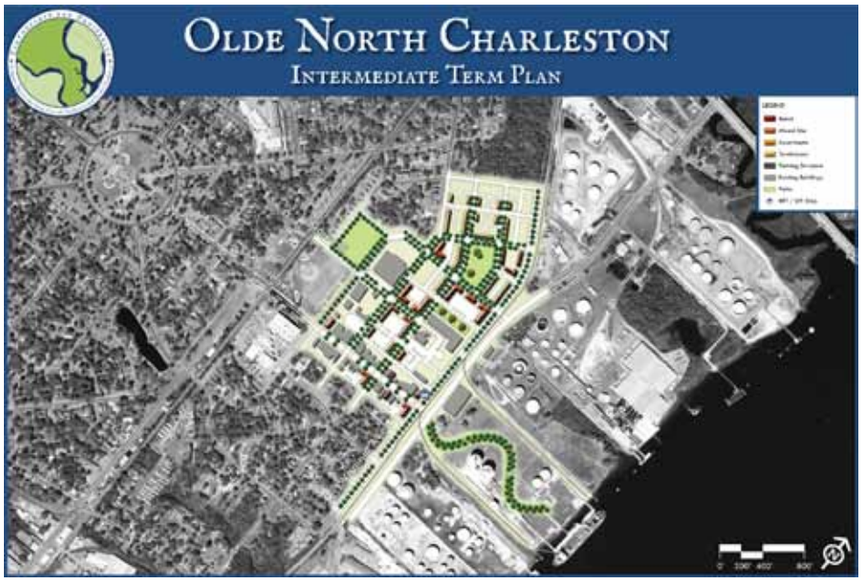


Figure 5.33 Intermediate Term Phasing Plan – Olde North Charleston Catalyst Area (See Appendix A pg. 237)

neighborhood areas; provide community open space. (Private)

Intermediate Term Phasing / 6 to 10 Years (see **Figure 5.33**)

- Expand the Montague Avenue retail district north along Ohear Avenue and Chateau Avenue to connect to development on the GARCO parcel. (Public/Private)
- Establish a transit stop for BRT/LRT routes at Virginia Avenue and Montague Avenue intersection. (Public)
- Begin redevelopment of existing parcels to complement the emerging mixed use character of the area. (Public/Private)
- Continue development of the GARCO parcel and begin to establish a street face along Virginia Avenue. (Private)

Long Term Phasing / 10+ Years (see **Figure 5.34** thru **Figure 5.36**)

- Create community open space and a focal point as the terminus to Montague Avenue. (Public)
- Continue development and redevelopment of parcels to complete blocks and improve area connectivity. (Public/Private)
- Select centrally located parcels to develop parking structures. (Public)

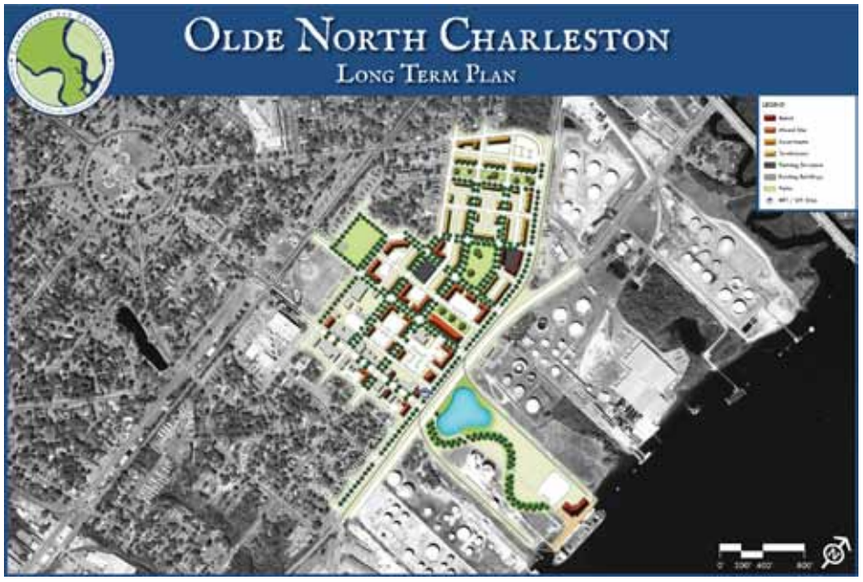


Figure 5.34 Long Term Phasing Plan – Olde North Charleston Catalyst Area (See Appendix A pg. 238)

Figure 5.35 and **Figure 5.36** show a redesigned Virginia Avenue looking north at Montague Avenue. The redesign shows that Virginia Avenue becomes divided into two roadways through this area. The eastern roadway (closest to the Cooper River) becomes a primary mover of freight and the western roadway becomes a local access road for the Olde North Charleston downtown area. There is a multi-use trail in the wide median that is buffered from the CSX railroad tracks.

Figure 5.35 Long Term Phasing Sketch – Olde North Charleston Catalyst Area along Virginia Avenue

Figure 5.36 Long Term Phasing View – Olde North Charleston Catalyst Area along Virginia Avenue

Amtrak Station

Context/Setting

The Amtrak Station catalyst area (see **Figure 5.37**) is a neighborhood district. Located off Rivers Avenue just north of Durant Avenue, this area is bordered to the north by the Liberty Hill LAMC neighborhood, which is part of LAMC; to the east by the Mixson development, a new New Urbanist development planned to include residential units, shops, and civic spaces; and to the west by CSX railroad tracks used by Amtrak's Silver Meteor service. The historic train station and adjacent parking areas anchor the area, which also includes light industrial, commercial, and civic uses. Gaynor Street connects the catalyst area to Montague Avenue on the north and Rivers Avenue and Durant Avenue on the south.

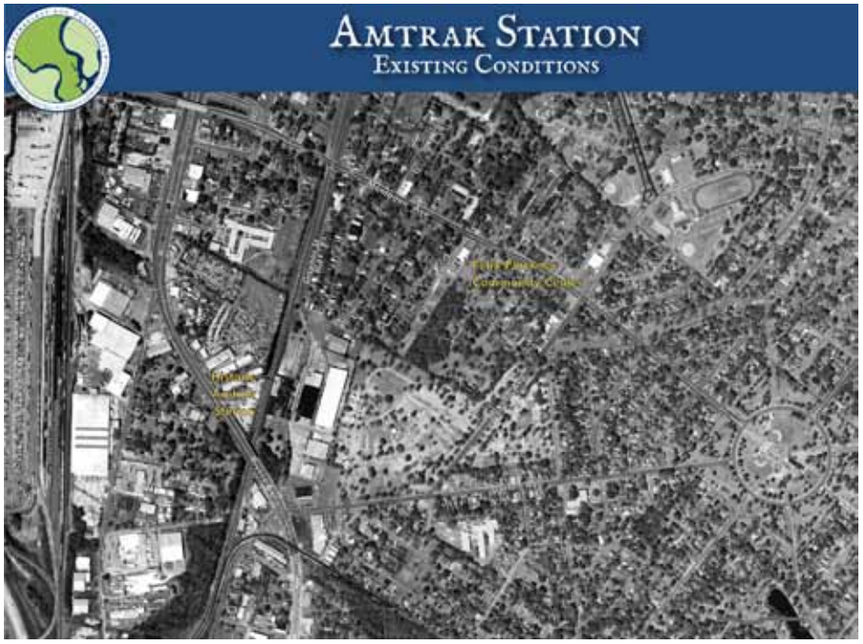


Figure 5.37 Amtrak Station Catalyst Area

Catalyst Opportunities

With the upcoming planned relocation of Amtrak service to the a new Intermodal Station, preservation of the existing historic train station site can serve as a catalyst opportunity. The structure itself can be renovated to provide much needed community meeting space, as well as office space to be used as a business incubators. The outside areas, now used for parking and loading, can be converted to green spaces that can be utilized used for community events and recreation, helping integrate this area into the fabric of the Liberty Hill neighborhood and reduce high speed cut-through traffic. The site would continue under ownership by CSX, and would be leased for its new purposes with separation from the rail tracks, which will remain active for freight traffic.

There has been some discussion about moving the proposed Intermodal Station from its current location near the Dorchester Road/Montague Avenue intersection to the existing Amtrak station site. In the event this happens, it clearly becomes the catalyst that drives redevelopment of this area. The mix of non-residential uses shifts from neighborhood—oriented to community-oriented that provides the retail services and amenities needed by commuters and travelers. The look and feel of the Rivers Avenue/Durant Avenue intersection and adjacent area changes since the catalyst area is now a regional gateway instead of a neighborhood center and roadway modifications may be needed to accommodate the expanded variety of transportation services that will be accessing the area. Existing neighborhood uses would need to be buffered from the impacts of the additional vehicular activities.

Form and Development Concepts

Building sizes in this catalyst area should be low-rise (1-3 stories) to complement the historic Amtrak station, not overpower it. This should also complement the adjacent Mixson development. However, due to the difference in elevation between Gaynor Street and Rivers Avenue, some mid-rise buildings (3-5 stories) may be needed to provide visibility and focal points. Rivers Avenue provides accessibility to the rest of the Neck area and points beyond through enhanced bus service, while improvements in local connectivity enhance the circulation between the catalyst area and the neighborhoods that surround it. The history and potential prominence of this area as a rail gateway to the Neck area can be an anchor for redevelopment.

The preliminary planning level program derived from the Long Term Phasing Concept Plan shows that about 400 residential dwelling units and 50,000 square feet of non-residential uses could be developed in this catalyst area.

Phasing

Conceptual phasing that illustrates a transition of uses within the catalyst area is shown on the next page:

Short Term Phasing / 1 to 5 Years (see **Figure 5.38**)

- Convert the Amtrak station to community meeting spaces and office incubator uses. (Public/Private)
- Create open space next to the station for community events. (Public)
- Provide connections from the station area, particularly open space areas, to the Felix Pinckney Community Center. (Public/Private)
- Begin mixed use development in areas adjacent to the station. (Public/Private)
- Develop a gateway element at the Rivers Avenue/Durant Avenue intersection to highlight and identify the area. (Public)
- Design crossing enhancements to make the Rivers Avenue/Durant Avenue intersection more pedestrian friendly. (Public)
- Realign Gaynor Street to reduce neighborhood cut-through traffic between Montague Avenue and Durant Avenue. (Public/Private)
- Increase pedestrian and bicycle mobility through sidewalk improvements and the addition of bicycle lanes along Rivers Avenue and shared lane markings along Durant Avenue. (Public)

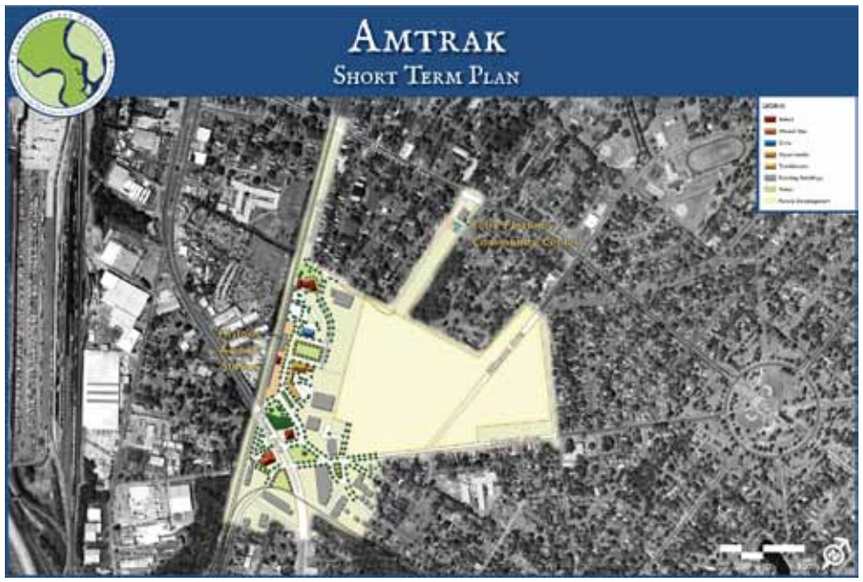


Figure 5.38 Short Term Phasing Plan – Amtrak Station Catalyst Area (See Appendix A pg. 239)

Intermediate Term Phasing / 6 to 10 Years (see **Figure 5.39**)

- Create multimodal access between the station area and adjacent Mixson development. (Public/Private)
- Establish a transit stop for BRT/LRT routes at the Rivers Avenue/Durant Avenue intersection. (Public)
- Continue mixed use development. (Public/Private)
- Begin redevelopment of uses around the Rivers Avenue/Durant Avenue intersection. (Private)

Long Term Phasing / 10+ Years (see **Figure 5.40)**

- Continue mixed use development and redevelopment to complete blocks and the street face. (Public/Private)

Given the multi-million dollar funding shortfall in CARTA's plan to relocate the Amtrak station to the planned Intermodal Center on West Montague Avenue, it is possible that the Amtrak facility could remain and be incorporated as part of an Intermodal Center at this location, creating a more attractive use within the

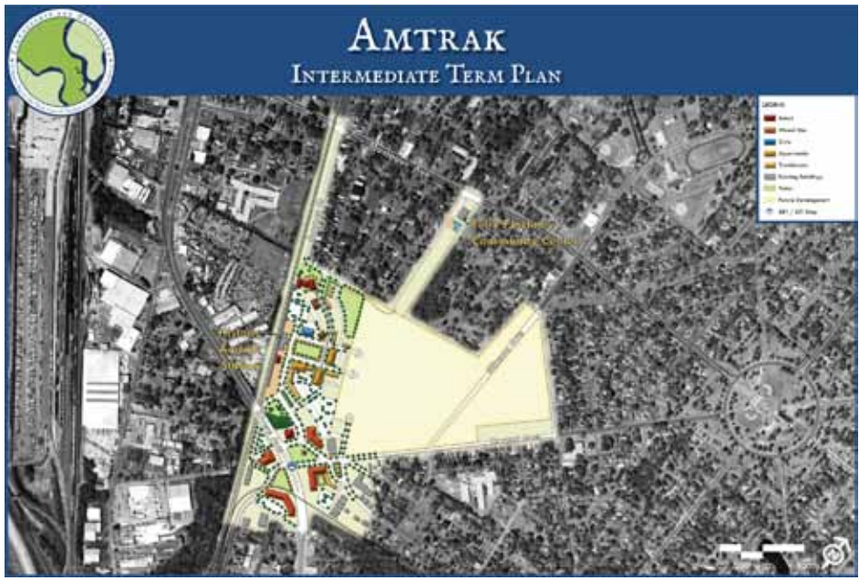


Figure 5.39 Intermediate Term Phasing Plan – Amtrak Station Area (See Appendix A pg. 240)

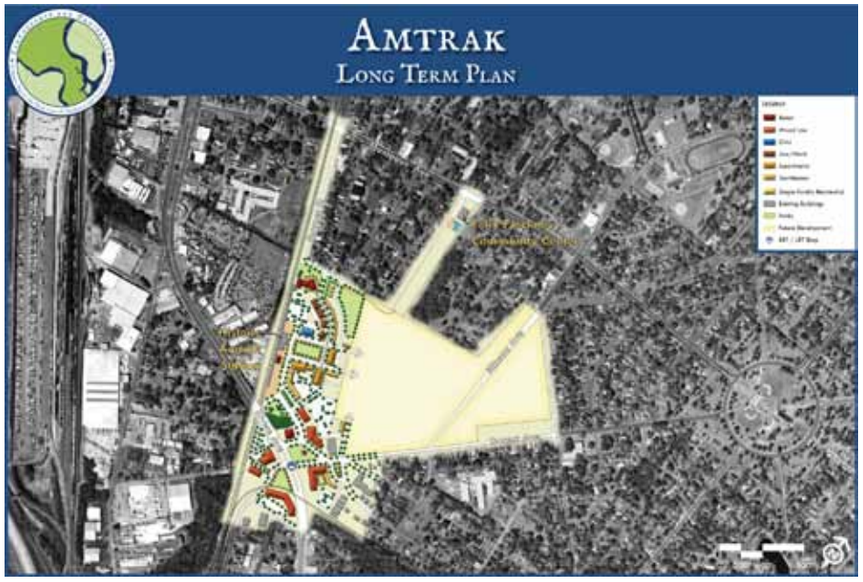


Figure 5.40 Long Term Phasing Plan – Amtrak Station Catalyst Area (See Appendix A pg. 241)

community while retaining and exhibiting its historic character and significance. In order for the catalyst area plan to accommodate the Intermodal Center, several adjustments would be needed that differ from the long term phasing plan shown in **Figure 6.40**. These development elements are illustrated in **Figure 6.41** and are summarized as follows:

- Surface parking located to transition to structured parking
- Amtrak Station redesigned and enlarged
- Residential uses integrated into vertical mixed use
- Central green removed
- Adjacent areas are still connected, but are more buffered
- Traffic patterns revised

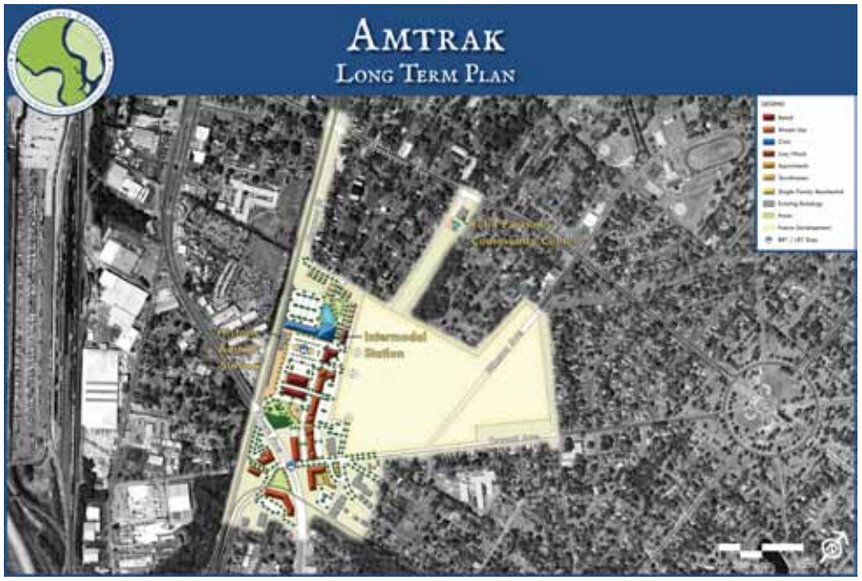


Figure 5.41 Long Term Phasing Plan – Amtrak Station Catalyst Area with Intermodal Center (See Appendix A pg. 242)

MALL DRIVE

CONTEXT/SETTING

The Mall Drive catalyst area (see **Figure 5.42**) is a regional district. I-26, a regional roadway that not only serves the Neck peninsula but ties the Charleston area to I-95 and the eastern seaboard, bisects the catalyst area and intersects with I-526 directly to the north. Rivers Avenue, Montague Avenue, and International Boulevard, each with exits from either I-26 or I-526 providing direct access to major area roadways, create the framework for this area. The western portion of the catalyst area, framed by International Boulevard, Montague Avenue, I-26, and I-526 and sitting directly north of the Convention Center campus, is primarily a commercial district with small lot and big box retail, hotels, and restaurants. The eastern portion of the catalyst area, loosely framed by Rivers Avenue, Montague Avenue, I-26 and I-526 with railroad tracks bisecting the area, consists of a mix of civic, commercial, and light industrial uses, including the City of North Charleston Municipal Complex.

Figure 5.42 Mall Drive Catalyst Area

CATALYST OPPORTUNITIES

The Mall Drive area is the centerpiece of a much larger area dubbed the "Gateway Entertainment District" that encompasses the Charleston International Airport, the Coliseum, the planned Intermodal Center, Tanger Outlet Center, hotel accommodations, restaurants and North Charleston City Hall. With its regional visibility, this area presents significant opportunity to become an urban center of the region, with offices, retail, multifamily residential and related uses functioning as a well-connected district. Aviation flight path restrictions will likely keep building heights to a modest level, but there is the opportunity for substantial infill of parking areas and vacant parcels to create a true regional center of North Charleston.

There are two areas for catalyst opportunities. The first is to begin mixed use development in the North Charleston City Hall area, designed around a future location for a commuter rail station. This will not only begin a conversion from larger commercial uses with vast areas of surface parking to a more pedestrian-scaled environment, but also begin development of the mixed use core and density/intensity needed for the commuter rail stop that utilizes multimodal transportation systems and encourages a live, work, play environment. The second catalyst opportunity is located just north of the first area, where the former North Charleston City Council building sits empty. This site occupies a prominent location along Mall Drive and an adjacency to the future commuter rail station, positioning itself nicely to actively participate in the transformation of this core area.

FORM AND DEVELOPMENT CONCEPTS

Building sizes in the North Charleston City Hall area are envisioned to be mid-rise (3-5 stories), with higher elevations around the commuter rail transit core. In the Tanger Outlet area, buildings will low-rise (1-3 stories), with some mid-rise (3-5 stories) as focal points. Along Rivers Avenue and Montague Avenue, buildings will be low-rise (1-3 stories) transitioning into existing neighborhoods. Connectivity within the catalyst area will be enhanced by a new circulator street that essentially extends Mall Drive across I-26, uniting the two halves of the area. The regional access and visibility provided by I-26 and Rivers Avenue, combined with airport proximity and rail transit access, can make this catalyst area a prime target for future redevelopment.

The preliminary planning level program derived from the Long Term Phasing Concept Plan shows that about 2,000,000 square feet of non-residential uses could be developed in this catalyst area.

PHASING

The following graphics illustrate a conceptual phasing strategy for this catalyst area:

Short Term Phasing / 1 to 5 Years (see **Figure 5.43**)

- Enhance the North Charleston City Hall area with new mixed use development; design in anticipation of and in accordance with the potential commuter rail station location. (Public/Private)
- Realign Mall Drive and create a connection to Center Pointe Drive with a new bridge over I-526 to function as a multimodal "complete street" parallel to Montague Avenue. The street/bridge would be designed to function as a lower speed two-lane roadway (25-30 mph) unifying the City Hall area with Tanger Outlets and providing an important connectivity option that will help ease travel demand on Montague and the interchange merge area. (Public)
- Develop mixed uses along Center Pointe Drive to begin establishment of a street face. (Public/Private)
- Increase pedestrian and bicycle mobility through sidewalk improvements and the addition of bicycle lanes and shared lane markings along Montague Avenue and shared lane markings along Mall Drive. (Public)

Intermediate Term Phasing / 6 to 10 Years (see **Figure 5.44**)

- Continue development of mixed uses in the Mall Drive and Center Pointe Drive areas and include light industrial redevelopment north of Mall Drive. Begin conversion of surface parking to structured parking. (Public/Private)
- Establish a transit stop for BRT/LRT routes at Rivers Avenue/Mall Drive intersection. (Public)

Figure 5.43 Short Term Phasing Plan – Mall Drive Catalyst Area (See Appendix A pg. 243)

Figure 5.44 Intermediate Term Phasing Plan – Mall Drive Catalyst Area (See Appendix A pg. 244)

- Begin mixed use development around the Rivers Avenue/Montague Avenue intersection. (Public/Private)
- Redesign the Rivers Avenue/Montague Avenue intersection to a roundabout configuration to improve traffic flow. (Public)

Long Term Phasing / 10+ Years (see **Figure 5.45** thru **Figure 5.47**)

- Continue mixed use development and redevelopment in all areas to complete blocks and improve area connectivity. (Public/Private)
- Continue conversion of surface parking to centrally located parking structures. (Public/Private)
- Establish a commuter rail station. (Public)

Figure 5.45 Long Term Phasing Plan - Mall Drive Catalyst Area (See Appendix A pg. 245)

Figure 5.46 Long Term Phasing Sketch - Mall Drive Catalyst Area (Mall Drive showing the North Charleston City Hall complex)

Figure 5.47 Long Term Phasing Sketch 2 – Mall Drive Catalyst Area (new bridge over I-26 connecting Mall Drive and Centre Pointe Drive; looking east over the I-26 bridge towards North Charleston City Hall)

Figure 5.48 Intermodal Center Catalyst Area

CONVENTION CENTER

CONTEXT/SETTING

The Convention Center catalyst area (see **Figure 5.48**) is planned to function as a regional gateway. I-526 bisects this land and connects with I-26 about one mile to the east. With three exits from I-526 and one exit from I-26 providing direct access to major area roadways, this gateway district is easily accessible from all parts of greater Charleston as well as regional destinations. The Charleston International Airport and Boeing manufacturing plant are located directly to the north and west and are major economic drivers that influence this catalyst area. The North Charleston Coliseum, Performing Arts Center, Charleston Area Convention Center, and surrounding hotels and commercial form a campus-style core in the western portion of the area that serves as a regional draw. The proposed Intermodal Station, under early stages of infrastructure development, is located in the eastern portion of the area, accessible by both road and rail.

CATALYST OPPORTUNITIES

The catalyst opportunity that will help start development and redevelopment in this area is construction of the Intermodal Station. The completion of this facility will not only bring a variety of users to this area, both those commuting locally and those coming in from all points via express bus service on Dorchester Road and I-26, Amtrak, Greyhound, or the Charleston International Airport, but adjacent properties will likely develop in response to the assortment of amenities and retail services associated with these users. This project sets the tone for the entire catalyst area and begins the transformation to a mixed use regional gateway.

There has been some discussion about moving the Intermodal Station from this location to the Amtrak Station catalyst area. In the event this happens, the Intermodal Station site can be used as an employment core without changing the basic configuration and phasing concepts shown for this catalyst area.

FORM AND DEVELOPMENT CONCEPTS

Building sizes in the western portion of the catalyst area (west of I-526) are envisioned as low-rise (1-3 stories) that transition into existing neighborhoods, with mid-rise buildings (3-5 stories) around the Intermodal Station core area. In the eastern portion of the catalyst area (east of I-526), buildings are envisioned as mid-rise (3-7 stories), complementing the mass and height of the Coliseum complex. This portion of the catalyst area will benefit from connectivity to the Mall Drive area via a new circulator shuttle bus system along the extended Centre Pointe Drive across I-26 to Mall Drive. This will link the Intermodal Station area to the regional accessibility provided by the new commuter rail and BRT/LRT transit systems running along the Neck's multimodal spine.

The preliminary planning level program derived from the Long Term Phasing Concept Plan shows that about 450 residential dwelling units and 2,000,000 square feet of non-residential uses could be developed in this catalyst area.

PHASING

A strategy for the phasing of development and redevelopment in this catalyst area is illustrated below:

Short Term Phasing / 1 to 5 Years (see **Figure 5.49**)

- Design the Intermodal Station and create adjacent mixed uses and a parking structure. (Public)
- Begin mixed use development along a realigned Montague Avenue near the Intermodal Station, including the connection between Montague Avenue and Dorchester Avenue. (Public/Private)
- Create a plaza and open space area as an entry feature to the Convention Center campus; convert adjacent surface parking lot to structured parking and line with mixed uses facing plaza. (Public/Private)
- Fill in the street face on Montague Avenue and International Boulevard adjacent to the Convention Center campus. (Private)
- Increase pedestrian and bicycle mobility through sidewalk improvements and the addition of bicycle lanes. (Public)

Figure 5.49 Short Term Phasing Plan – Convention Center Catalyst Area (See Appendix A pg. 246)

Intermediate Term Phasing / 6 to 10 Years (see **Figure 5.50**)

- Develop a mixed use core in the area around the Intermodal Center, including a variety of attached housing options. (Public/Private)
- Add structured parking in central locations in the Intermodal Station area. (Public/Private)
- Continue conversion of surface parking lots to structured parking lined with mixed uses in the Convention Center campus area. (Public/Private)
- Establish a transit stop near the North Charleston Coliseum for BRT/LRT routes. (Public)

Figure 5.50 Intermediate Term Phasing Plan – Intermodal Center Catalyst Area (See Appendix A pg. 247)

Long Term Phasing / 10+ Years (see **Figure 5.51**)

- Continue development and redevelopment of parcels to complete blocks and improve area connectivity. (Public/Private)
- Extend Center Pointe Drive north of the Convention Center campus, create a new bridge over I-26, and tie into Montague Avenue. Create new vehicular entryways and pedestrian pathways into the North Charleston Coliseum. (Public/Private)
- Establish a transit stop on Center Pointe Drive between Montague Avenue and I-526 for BRT/LRT routes. (Public)

Figure 5.51 Long Term Phasing Plan – Intermodal Center Catalyst Area (See Appendix A pg. 248)

ENVIRONMENTAL SUSTAINABILITY

GENERAL

One of the challenges to advancing catalyst areas as envisioned in this Master Plan is the consideration of environmental conditions in the project area that have come about through decades of urbanization and commercial activity on the peninsula. These conditions may affect the ability to develop or redevelop a site or larger area or it may be the cause of a decrease in the health and quality of life for residents. Environmental sustainability is one of the important components of a revitalized Neck area.

Environmental sustainability covers a host of practices, but as related to this project will include planning scale measures that will contribute to an increase in the health of ecological systems and the corresponding quality of the environment on a long term basis. These measures are meant to improve the overall health, safety, and quality of life for residents of the Neck and further the vision and goals of this project. Environmental improvements, while evaluated on a project by project basis, should consider these larger area-wide practices:

TRANSFORM BROWNFIELD SITES

Brownfields are properties that are contaminated, or thought to be contaminated, by a hazardous substance, pollutant, or contaminant. While most brownfields in the Neck area exist in the industrial areas, some also exist in residential areas such as Park Circle on lands that once housed commercial ventures such as gas stations, dry cleaners, auto body shops, or other businesses that utilized pollutants.

While remediation measures vary based on the individual site conditions and proposed reuse, most pollution at brownfield sites is generally considered low grade that is able to be cleaned up. Contaminants most commonly discovered include solvents, pesticides, fuels, asbestos, and lead.

Brownfield property clean up promotes economic development, community reinvestment, and frees previously unavailable land for productive reuse such as new development, recreational use, or natural areas, while protecting the environment, reducing blight, utilizing existing infrastructure, and taking development pressures off undeveloped greenfield land.

IMPROVE STORMWATER MANAGEMENT SYSTEMS

In urban conditions such as the Neck area, where much of the land has been cleared, developed or paved, stormwater runoff contains oil, gasoline, pesticides, fertilizers, and other chemicals. Conventional stormwater management systems allow this polluted runoff to spill off impervious areas into stormwater drains, then directly into surrounding bodies of water. In addition, frequent flooding often results when these systems fail to drain water efficiently or are undersized or poorly maintained.

While it is not possible to restore or even recreate the original hydrology of the peninsula watershed, incorporation of natural drainage systems based on sound ecological principles can reduce stress on existing stormwater management systems. These systems capture and filter polluted runoff by mimicking natural drainage patterns and function, improving water quality, reducing the rate and volume of runoff, and reducing flooding.

Low Impact Development techniques act as natural filters for stormwater retention.

Implementation of these principles can be accomplished through an approach called "low impact development" or LID. The goal of LID site planning and design is to allow for development while still maintaining the essential site hydrological functions. Stormwater is dispersed instead of concentrating the flow in a few locations, slowing the rate at which water moves through the watershed and allowing infiltration and evaporation to occur. This reduces the total volume of surface water leaving the site, permits natural processes time to remove contaminants from the water, and results in smaller conveyance systems.

Common LID techniques include pervious pavement, vegetated swales and buffers, rain gardens and bioretention, impervious surface reduction and disconnection, rain barrels and cisterns, and disconnection of building downspouts from underground piping. By integrating these techniques into streetscapes, parking lots, open spaces, and parks, natural drainage systems become part of the community fabric, creating opportunities for awareness, education, and placemaking.

Expand Natural Land Areas

There has been a significant loss of natural land areas over the years due to development pressure and infrastructure operations. These losses in the green network have resulted in degradation of the varied environmental systems interwoven throughout the Neck area.

Stormwater runoff from roads, roofs, and parking lots has not only caused downstream flooding, but has impacted water quality, altered seasonal water table levels, and caused fluctuation of water temperature and oxygen levels in wetlands and tidal systems, all of which have adversely stressed ecosystem health. The loss of vegetative cover has harmed air quality, reduced the amount of shade, and contributed to the urban heat island effect.

Natrual land areas, such as this, should be protected and/or restored to protect the urban ecosystem.

By increasing the amount of natural land area in the Neck area, these adverse effects can be stopped or reversed and the restoration or reestablishment of a functioning ecosystem that provides more natural processes to its water quality, groundwater recharge, water storage and conveyance, and habitat diversity and integrity can begin to occur. Measures that limit impervious areas and encourage alternative development patterns, protect floodplains, maintain natural buffers, and provide new green areas redefine the relationship between natural and built systems and form a foundation for a healthy urban ecosystem.

Water pollution can be reduced through the use of natural land areas, which act as bio-filters, removing pollutants before they enter waterways and groundwater. They also act as flood control measures, absorbing and gradually releasing water from rain, and as buffers that help protect vital species habitat. Tree and shrub roots stabilize the soil, hold nutrients in the land, and prevent erosion control problems that lead to sedimentation. Leaves utilize carbon dioxide and dispose of oxygen, improving the overall air quality in the community.

Implement Buffering

There are many places within the Neck area where neighborhoods sit adjacent to commercial or industrial sites, as well as along rail and freight traffic corridors. The noise, light, pollution, and negative visual aesthetic of these intensive uses reduces the quality of life for residents in the neighborhoods.

While some impact reduction can be accomplished during redevelopment through site planning, architectural design, and construction techniques, the proximity of these incompatible areas will generally require the construction of buffers. A network of continuous buffers can help shield these uses from view and mitigate their negative impacts. By removing the source from view, the awareness of and level of annoyance is often reduced.

Buffer types can include berms, vegetation, walls and fences, and combinations of these materials. The choice of a particular alternative depends on considerations of space, cost, safety, aesthetics, and the level of buffering desired. The effectiveness of a buffer is dependent on a number of variables, including the mass and height of the buffer, and its location and distance between the source and receiver. The buffer should be long and continuous to prevent sounds from passing around the ends. It should be solid, with few breaks, and strong and flexible enough to withstand wind pressure.

Berms are long mounds of earth that can range in height from five to thirty feet. The higher the berm, the more land is required for its construction and stability. Because of the amount of land required, a berm may not always be a practical buffer solution in urban areas or areas where space is limited.

Vegetative buffers, such as the one shown in the accompanying illustration, should consist of both canopy trees and shrubs planted in a dense, thick strip that is

visually opaque. Evergreen species should be used to provide year round cover. Time must be allowed after planting to allow vegetation to attain their desired mature heights and spreads.

Walls and fences not only provide visual and acoustical separation, but prevent access in undesired locations. The vertical construction and minimal width makes their use as buffers feasible in areas where space is limited.

Vegetative buffers can reduce unwanted sights and noise and improve air quality.

In many circumstances, combinations of the above listed buffers are desirable. For instance, plantings can provide vertical blocking of views, allowing a lower height wall or berm to be designed. In addition to providing attenuation, the plantings provide increased visual appeal and seasonal interest.

The inclusion and consideration of buffering in this section is to illustrate a wide range of possible alternatives which should be considered in future planning processes. **Figure 5.52** indicates areas where buffer treatments are recommended. Improvements will likely be made within public rights-of-way, but partnerships may be pursued with key property owners to create more detailed buffering strategies.

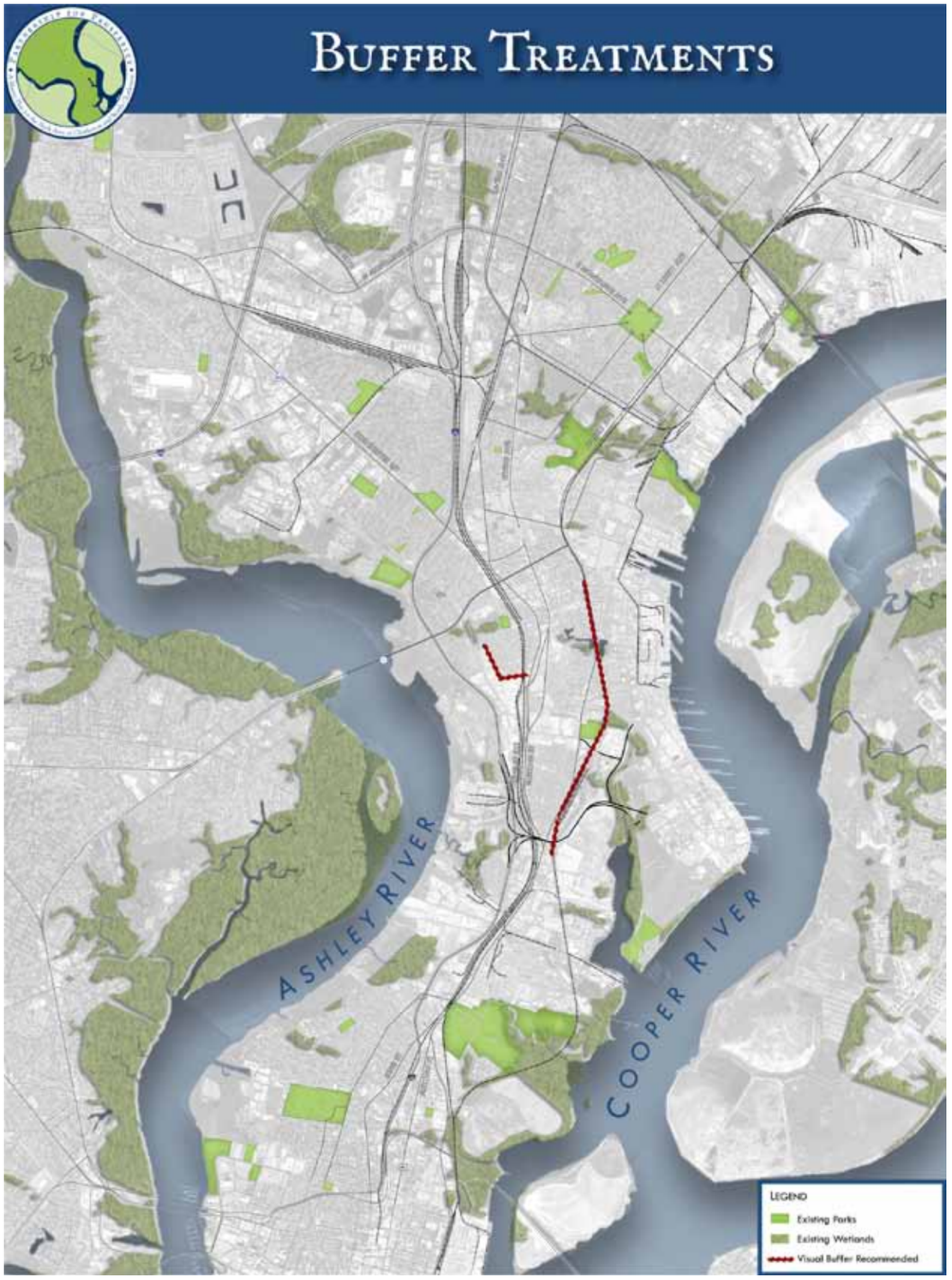


Figure 5.52 Buffer Treatments (See Appendix A pg. 252)

OPEN SPACE NETWORK

GENERAL

Open space is one of the central organizing features of the Neck area and the Partnership for Prosperity Master Plan. The overarching goal is to distribute a connected series of open spaces and active recreation uses throughout the study area and make them accessible to all people. In addition to offering resource protection and preservation while meeting the passive and active recreational needs of the residents, open space provides a structure that helps organize and define each neighborhood, as well as provide gathering places and opportunities for interaction within the community.

COMMUNITY NEEDS

While this visioning effort does not attempt to duplicate the depth of analysis that would normally be done as part of a comprehensive open space facilities study, this Master Plan effort considered two major areas as part of a comprehensive strategy to improve access to recreational opportunities for all residents of the Neck area.

First, the Master Plan took into account issues raised by the community during focus group meetings and public workshops. Those needs as communicated included:

- Protection and restoration of wetland habitats;
- A community center in the southern portion of the study area;
- A park in the southern portion of the study area;
- Water access to both the Ashley and Cooper Rivers, including parks, trails, and piers;
- Better utilization of Park South as a recreational amenity;
- Creation of green spaces in the LAMC neighborhoods, and
- Parks and trails that tie into the waterfront park.

Second, planning efforts considered guidelines set forth by the National Recreation and Park Association (NRPA) to determine baselines for the adequacy of existing supply of park facilities and the need for additional facilities for specific types of facilities as detailed below.

PROPOSED OPEN SPACE NETWORK

Open space fulfills many different functions within the Neck area and the Master Plan includes a hierarchy of uses that provide multiple recreation opportunities in a variety of settings. Open space planning has been integrated into the project in order to effectively and adequately provides these important community benefits. Different site designs are appropriate for different areas in the project and the actual size and configuration of the open spaces should be based on the land area needed to accommodate the desired uses, as well as any policy and code requirements.

The natural and developed open space categories described below serve as a guide in the organization of the green network for this visioning effort. In order to provide a meaningful system of open spaces that maximize the benefits of these lands, planning should allow flexibility and creativity within the site and facility design processes. It should be responsive to the needs of the community, both now and in the future, and create quality experiences that improve the well being of both residents and visitors. **Figure 5.53** shows the overall Open Space Network for the Neck area.

NATURAL OPEN SPACE AREAS

The rivers on either side of the Neck area provide a number of open space opportunities.

Natural open space areas consist of landscape set aside for the purpose of preservation or conservation of natural resources, natural features, buffering, or scenic/aesthetic values. This classification may include the following open space categories:

PRESERVE

Description: A preserve is open space that protects endangered species, critical environmental features, connected wetlands, flood plains, river systems, or other natural resources.

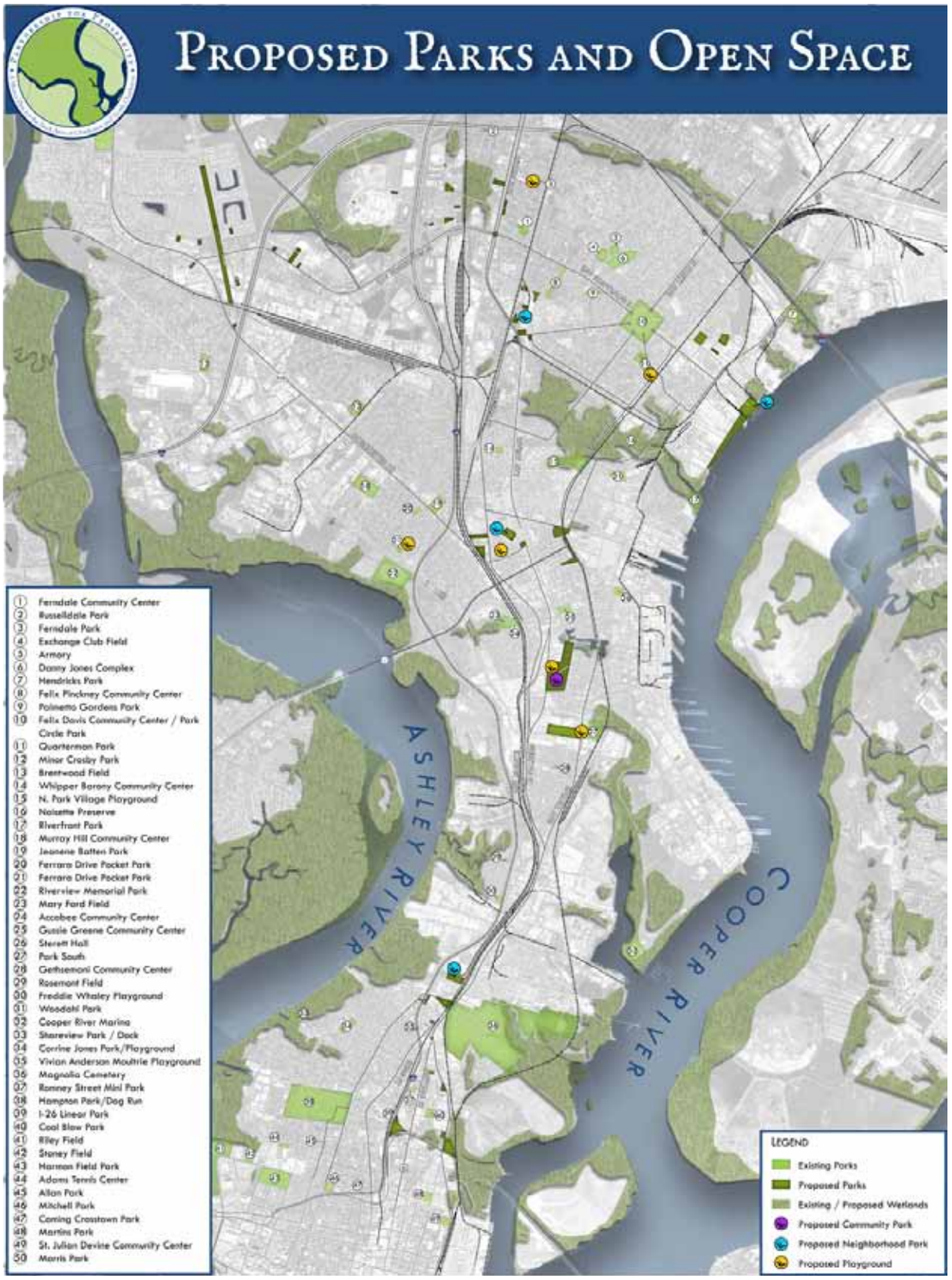


Figure 5.53 Open Space Network (See Appendix A pg. 216)

Approximate Size: varies.

Planning Considerations: Because these areas serve a preservation function, development should be limited. Access, where allowed and provided, may include boardwalks, piers, trails, minor trailheads, educational features and site furnishings.

Recreational Trail

Description: For the purposes of these open space guidelines, trails for recreational uses include off-road multi-use trails only. On-street facilities are included in the Bicycle and Pedestrian Network plan (see **Chapter 6**). Trails tie open space components together to form a cohesive overall system with uninterrupted and safe pedestrian and bicycle movement. They provide linkages among neighborhoods, parks, schools, transit facilities and commercial areas.

Approximate Size: length varies and trail width is generally 8' or greater.

Planning Considerations: trails can be paved and/or unpaved surfaces, with limited trailhead parking, restrooms, picnic areas and site furnishings where appropriate.

Developed Open Space Areas

Developed open space areas consist of enhanced or developed landscape set aside for the purpose of active or passive recreation. This classification may require improvements necessary to accommodate and promote higher levels of use and may include the following open space categories:

Greenway

Description: A greenway is a linear area that typically follows natural features such as wetlands or water. It serves as a transition between urban development and

natural systems and is usually a combination of natural vegetation and landscaped or regularly maintained areas. Ideally, a greenway should provide pedestrian and bicycle connections to other open spaces in a larger green system or to destinations.

Approximate Size: varies.

Planning Considerations: A greenway should be designed for passive and unstructured active recreation. Improvements to the greenway may consist of paths, benches, landscaping and site furnishings. A road along one side of a greenway is encouraged. If access to a greenway is not continuous, frequent access points should be provided.

GREEN

Description: a green is an open space available for unstructured recreation, with landscaping consisting of grassy areas and trees.

Approximate Size and Service Area: varies.

Planning Considerations: A green should be designed for passive and unstructured active recreation. Improvements may consist of paths, benches, landscaping and site furnishings.

COMMUNITY GARDEN

Description: a community garden is space specifically programmed for gardening. It should be located in the center of a neighborhood to provide convenient and safe access. Many times it is included in pocket parks and neighborhood parks. Gardens can be a valued asset in urban areas where residential yards are often small or rare.

Approximate Size: typically up to one acre, but can be larger in appropriate locations.

Approximate Service Area: varies.

Planning Considerations: Gardens should be located on agriculturally suited ground that receives adequate sunlight for the intended growing purpose. They should not be located in prominent areas where they may detract from the aesthetics of the open space.

GATEWAY PARK

Description: A gateway park is a formal delineation of a neighborhood, district or feature entrance consisting of landscaping and monumentation. It creates area identity and can provide passive recreation opportunities.

Approximate Size: typically up to ½ acre.

Planning Considerations: The gateway should include unique signage identifying the area or feature, but should be designed within the overall visual identity, culture, and character of the Neck area, integrating elements of the overall wayfinding system as well. A gateway park is often a good location for display of public art.

PLAYGROUND

Description: A playground is designed to provide both active and passive uses, with distinct play areas for preschool (ages 2-5) and/or school age children (ages 5-12) and informal recreation for all ages. It is often located adjacent to an elementary school.

Approximate Size: typically up to 1 acre.

Approximate Service Area: ¼ to ½ mile radius.

Planning Considerations: playground design should generally follow the playspace development model, which delineates specific areas as follows: adult/caregiver area, an imaginative/creative play area, an active non-structured play area and an active equipment-based play area.

POCKET PARK

Description: Pocket parks are small and frequent, generally with passive recreation that ensures walkable green space access for all residents. They may contain specialized facilities that serve a limited population or group.

Approximate Size: typically up to 1 acre.

Approximate Service Area: ¼ mile radius.

Planning Considerations: pocket parks contain limited amenities such as a picnic area, small hard court game surface or half court basketball and site furnishings.

Neighborhood Park

Description: Neighborhood parks are the basic units of the Neck area open space system and serve as the recreational and social focus of each neighborhood. Parks should accommodate a wide variety of age and user groups, including children, adults, seniors and special populations, with a focus on both informal active and passive uses. It should be centrally located within the neighborhood, usually in the neighborhood center. Frequently the park will be located adjacent to a civic use. Neighborhood parks should emphasize convenient and safe access by pedestrians and bicyclists.

Approximate Size: ½ to 10 acres.

Approximate Service Area: ½ mile radius.

Planning Considerations: Facilities commonly found in neighborhood parks include playgrounds, picnic areas/shelters, non-lighted play fields, open play areas for informal activities, sports courts, limited parking (parking should be provided on street or shared with school lots), restrooms and site furnishings.

Community Park

Description: The focus of community parks is on the recreational needs of multiple neighborhoods, as well as preserving unique landscapes and open space features. They allow for group activities and offer recreational opportunities not feasible at the neighborhood level. They should be developed for both active and passive activities and serve two or more neighborhoods. Community parks are intentionally located on or near framework streets with the intent of minimizing the impact of organized recreational activities on neighborhood residences.

Approximate Size: 20+ acres.

Approximate Service Area: 2 mile radius.

Planning Considerations: Community parks include such facilities as lighted athletic fields, indoor recreational facilities, sport courts, concessions, picnic areas/shelters, playgrounds, open play areas for informal activities or civic activities, skate park, parking (size to avoid spillover into adjacent residential areas), restrooms and site furnishings.

Plaza

Description: A plaza is open space usually set aside for civic purposes or commercial activity, with landscaping including pavement and formal tree plantings. A plaza is usually bordered by civic or private buildings. Plazas may range from very active places with adjacent complementary uses such as restaurants and cafes to quiet areas with only seating, formal landscape plantings and amenities such as fountains or public art.

Approximate Size: ¼ to 2 acres.

Approximate Service Area: ¼ to ½ mile.

Planning Considerations: plazas are usually spatially defined by building frontages.

Square

Description: A square is generally set aside for civic purposes, with landscaping consisting of paved walks, lawns, trees, and/or civic structures. It may encompass an entire block. A square is bordered by streets and may have major civic uses located on or adjacent to it. A neighborhood square is intended as a central place for the community and should accommodate a wide variety of formal and informal gatherings.

Approximate Size: ½ to 5 acres.

Approximate Service Area: ¼ to ½ mile.

Planning Considerations: squares often serve to terminate a vista.

Special Use Area

Description: The Special Use classification covers a broad range of recreation facilities oriented toward a single-purpose use. They fall into three general categories – cultural facilities (historical or educational), indoor facilities (community center), and unique athletic sites (golf course, marina or specialized fields).

Approximate Size: varies.

Planning Considerations: Special Use facilities should be developed to maximize their intended use. They generally do not include the same scale of

activities as those found in other open space areas of the project.

RECOMMENDED MASTER PLAN OPEN SPACE IMPROVEMENTS

Based on existing facilities and the proposed NRPA level of service guidelines, the existing Neck area open space system is not meeting the needs of the community. Comments from the community during the visioning process reinforce this fact.

Over the next two decades, the demand for open space and recreational facilities will increase as the population grows and development intensities increase. While it should be anticipated that new developments will contribute to the open space system by providing appropriate land and facilities, a more broad-brushed approach is needed to ensure adequate coverage of open space over the entire Neck area that provides a variety of recreational opportunities for all residents. The following recommendations will help fill gaps in the existing and projected open space system, as well as enhance the natural environment of the Neck area:

PRESERVE

These existing open space areas are located throughout the Neck and are shown as part of the Environmental Network map (see **Figure 4.31**). Where and when possible, land adjacent to these critical natural areas should be converted to preservation areas through either protection of upland open space, enhancement of existing areas of critical habitat and biodiversity, or restoration of function for degraded wetland or flood plain areas.

RECREATIONAL TRAIL

Recreational trails are located throughout the project area and are conceptually indicated on the Bicycle and Pedestrian Network map (see **Figure 7.17**). This network was developed in conjunction with the Open Space Network and helps connect individual elements into a unified system that provides connectivity and access for all residents.

GREENWAY

There are three greenways shown on the Bicycle and Pedestrian Network map (see **Figure 7.17**) that are part of the open space network; these linear systems provide both connections to other open spaces and access to a variety of environmental areas and are located as follows:

- From Park South and the Stromboli Corridor to the Cooper River Marina along Shipyard Creek and Least Term Lane;
- From Rivers Avenue to Riverfront Park along Noisette Creek; and
- From Riverfront Park to Olde North Charleston downtown area along the Cooper River.

GREEN

Greens are scattered throughout the project area and are shown on **Figure 6.51**, with the intent of providing open space within each neighborhood and catalyst area.

COMMUNITY GARDEN

The City of North Charleston has begun a pilot program, initiating community gardens at four community centers, three of which are in the project area (Gethsemane, Liberty Hill, and Minor Crosby). They plan to expand this program if the pilot plots are successful.

Community gardens not only provide a connection to the environment, but create a sense of community and provide neighborhood beautification. With a multitude of vacant and damaged or abandoned houses/lots scattered around the project area, there seems to be ample opportunity to create positive involvement, both from neighborhoods and public entities.

The community has indicated the need and desire for a local farmer's market, with the Amtrak Station catalyst area mentioned as a possible location. A community garden in this area would be a logical complementary use. Additionally, in catalyst areas where more density/intensity is envisioned, community gardens could take the form of rooftop gardens.

GATEWAY PARK

Potential gateway locations and their function within a unified wayfinding system are indicated on the Community Identity map (see **Figure 6.52**). While gateways at major intersections may consist only of a monument element and minimal landscaping, gateways identifying neighborhoods will generally have more space available to incorporate green areas and other displays.

PLAYGROUND

The goal for this type of facility is to create a network of playgrounds accessible within a five minute walk time or approximately a ¼ mile radius. This creates a situation where children have accessible recreation within a short distance of their home and usually without the need to cross a major roadway.

The southern portion of the project area, with Magnolia Cemetery generally as a northern cutoff, has a good network of playground areas. Additional facilities are not anticipated at this time.

The northern portion of the project area, generally the area north of Noisette Creek and east of Rivers Avenue, has a good network of playground areas, especially in the Park Circle area. However, there are facilities gaps, which are detailed as follows:

- Some of the residential areas on the north adjacent to I-526 are not within the five minute walk. However, these areas are within a ten minute walk (about ½ mile), which is acceptable given the numerous recreation opportunities in the area and the absence of major roadway crossings to access those facilities.
- Some of the residential areas north of Noisette Creek near Spruill Avenue are not within the five minute walk. However, these areas are within a ten minute walk and the addition of a playground on the Quarterman Park site would close that gap.
- There is a gap in the northern portion of the Ferndale neighborhood, which falls outside of a ten minute walk to any adjacent playground. The addition of a playground on the Ferndale Park site would close that gap.

The western portion of the project area, generally north of Cosgrove Avenue and west of the railroad tracks, has a good network of playground areas in the core of the area, but there are facilities gaps around the periphery, which are detailed as follows:

- Some of the residential areas north of Dorchester Road and adjacent to I-26 near the Garrett Academy are not within the five minute walk. However, these areas are within ten minute walks to multiple playgrounds, which should be acceptable given the established residential character of the area and the absence of major roadway crossings to access those facilities.
- The neighborhood bounded by Cosgrove Avenue, I-26, and railroad tracks is, for purposes of this playground analysis, an isolated area without any facilities. A playground (and small green) could be located in one of what appears to be vacant lots adjacent to the power lines.
- Some of the residential areas north of Azalea Drive and west of I-26 are not within the five minute walk. However, these areas are within ten minute walks to multiple playgrounds and a playground on the southern Ferrara Drive green would close that gap.

The north central portion of the project area, generally north of Cosgrove Avenue, east of the railroad tracks, and south of Noisette Creek, has a good network of playground areas in the northwestern part, but there are facilities gaps, which are detailed as follows:

- It should be assumed that the Noisette project, or similar development on that tract, will provide needed facilities.
- There is a gap outside of a ten minute walk generally centered on the Shipwatch Square area; a playground as part of the catalyst area development will close that gap.

The south central portion of the project area, generally consisting of LAMC neighborhoods, has playgrounds on the northern and southern peripheries, but there are facilities gaps in the central part, which are detailed as follows:

- Some of the residential areas in the Chicora neighborhood near the old tank farm are not within the five minute walk. However, these areas are within a 10 minute walk and the addition of a playground on the tank farm site (in conjunction with a community park as described below) would close that gap.
- Some of the residential areas in the Five Mile neighborhood are not within the five minute walk. However, these areas are within a 10 minute walk and the addition of a playground in the Stromboli Corridor catalyst site (in conjunction with a community center as described below) would close that gap.

Pocket Park

Although pocket parks are not indicated on the Open Space Network map, there is a multitude of vacant and damaged or abandoned houses/lots scattered around the project area that provide ample opportunities to create neighborhood amenities in public/private partnerships.

Neighborhood Park

The goal for this type of open space area is to create a network of facilities that serve as neighborhood focus points, accessible within a 10 minute walk time or approximately a ½ mile radius. Using this service area as a baseline, there is good coverage of neighborhood parks in the project area; however, there are facilities gaps, which are detailed as follows:

- Some of the residential areas west of King Street and north of Mount Pleasant Street are not within the ten minute walk. A neighborhood park is proposed

as part of the North of Mount Pleasant Street catalyst area to close this gap in service. This also addresses community input for a green space in this area.

- The area around Shipwatch Square is not within a 10 minute walk. A neighborhood park is proposed as part of the Shipwatch Square catalyst area to close this gap in service.
- A neighborhood park is proposed in the Olde North Charleston downtown area as an extension to Montague Avenue. This park not only provides water access, but as described earlier in this section, will eventually connect along the Cooper River to the Riverfront Park as part of the proposed bicycle and pedestrian network.

Community Park

The goal for this type of open space area is to create a network of facilities that serve the active recreation needs of the community, with a two mile radius as the service area. Using this baseline, there is good coverage of community parks in the southern and northern portions of the project area; however, there are facilities gaps in the central portion, which are detailed as follows:

- Residential neighborhoods covering an area generally from Cosgrove Avenue on the north to Haygood Street on the south are outside of the baseline service area. This Master Plan proposes a community park on the Chicora tank farm site, which would close this gap and provide overlapping coverage throughout the project area. This location is consistent with the LAMC master plan, which calls this site the LAMC community's "central park."

Plaza

Plaza areas are an integral part of the mixed use environment and are conceptually shown as part of the catalyst area plans outlined earlier in this section, for example, as shown in the Mall Drive area.

Square

Squares are generally set aside for civic uses. Most of the established residential neighborhoods in the project area contain squares with this civic focus; the catalyst area concept plans outlined earlier in this section show additional areas, for example, as shown in the Shipwatch Square area.

Special Use Area

There are a number of existing special use areas within the limits of this project, mainly community centers, but also a variety of single-purpose recreational facilities. Based on community input during this visioning process, the following special use areas are proposed for the Master Plan:

- A community center is proposed as part of the Stromboli Corridor catalyst area. This facility would serve as a core of community services and provide neighborhood recreational needs, both contained within the facility and as a green space connector between Park South and the proposed Chicora tank farm community park.
- A skate park is planned near the intersection of Meeting Street and Huger Street in a triangular open space area under the raised interchange of I-26 and US-17. This addresses community input for recreational space in this area.

Wayfinding

General

Wayfinding incorporates branding, signs, maps, and directional devices that tell people where they are, where they want to go, and how they get there. Wayfinding provides direction for people on the move. A successful wayfinding system should provide information for people to:

- Confirm they are at a certain point along a journey;
- Identify their location within an area or space;
- Orient themselves within that area or space;
- Reinforce they are traveling in the correct direction;
- Understand their surroundings and any potential hazards; and
- Identify their destination on arrival.

Successful wayfinding depends on presenting directional information in a logical and orderly manner so that people are not confused by excessive or extraneous data. Determining decision points people will face throughout their journey and identifying the hierarchy of information required at each of those decision points will allow travelers to easily recognize and interpret messages along their journey.

Existing Elements

Although there are several wayfinding elements scattered throughout the project

area, these elements usually promote bypass of the Neck area and direct travelers directly toward the historic downtown or beach areas. Each grouping has its own design and identity; there is no visual connection or unifying set of components between different neighborhoods or areas of the community. Existing wayfinding elements in the Neck area include:

- Directional signage at the Charleston International Airport
- School signage along Montague Avenue
- Event banners at Park Circle
- Brick entry feature at Park Circle
- Olde North Charleston indicator on street signs
- Olde North Charleston "Historic Business District" sign
- Brick entry feature at Navy Yard
- Directional signage and banners at Navy Yard
- "Visitor Center" directional signage along Meeting Street closer to downtown area

Unified Component system

The information presented at each decision point in a wayfinding sequence should be supported by a coordinated group of wayfinding components. The components of a complete wayfinding system should include:

Gateways announce arrival to a general area. They should include not only signage, but other elements of streetscaping and landscaping. Their main purpose is to create a sense of place and boundary. Gateways are often overlooked because they do not direct people to specific locations, but they have the potential to impact perceptions of a particular area. They not only serve as an introduction to the area itself, but to the style, mood, and branding of the area and the primary visual clue to any subsequent wayfinding elements.

Vehicular Signs are located at key intersections and along main routes. Their main purpose is vehicular guidance to general areas and larger destinations, but they also function at a pedestrian level as well.

Destination Signs can be used as vehicular guidance, but they are primarily used in areas of slower traffic and tend to be more specific and smaller than vehicular signs.

Parking and Identification Signs familiarize people with a local area and increase awareness of available facilities and parking resources.

Pedestrian Signs make areas more accessible to users while enhancing a sense of place for both residents and visitors alike.

Kiosks provide pedestrians with specific information about history, culture, and available goods and services. They orient a user to the surrounding environment. Ideal locations for kiosks are in high traffic areas and at transition points.

Banners can be used in groups or individually to announce arrival to an area or promote specific events.

Branding should be incorporated into each of the above components to help reinforce community elements within the wayfinding system.

Opportunities

Residents and visitors traveling in the Neck area have common wayfinding needs: first – clear, consistent, and timely information about their destination and how to reach it; and second – what to do once they have reached their destination, such as parking locations, drop-off points, or information regarding nearby destinations or departure routes. **Figure 5.54** illustrates points of community identity where gateway elements would help define the area. Additionally, the following opportunities could help development of a comprehensive wayfinding strategy for the Neck area:

Gateways

- Design gateway features to identify entries/boundaries of individual neighborhoods and catalyst areas and announce arrival into important areas such as the Convention Center, Charleston International Airport, and Navy Yard. Gateway features should also be considered at exits from I-26 and US-17 that are signed routes to the cruise ship terminals. While we are not suggesting supplementation of that wayfinding system, since there is a steady stream of traffic that utilizes the cruise ship signage routing, it seems advantageous to advertise and reinforce our Neck area presence, especially as catalyst areas grow, instead of being just a pass-through to other areas in Charleston. Gateway features should incorporate components of the unified area wayfinding signage, so visitors can make an association as they encounter subsequent wayfinding elements.
- Evaluate the possibility of incorporating electronic signage into one or more of the gateway elements where information on upcoming events would be useful to residents and visitors. Riverfront Park could be a good location at the present time, but additional opportunities may emerge as catalyst areas develop. Electronic signage has high resolution text and graphic capabilities and is viewable from several hundred feet during

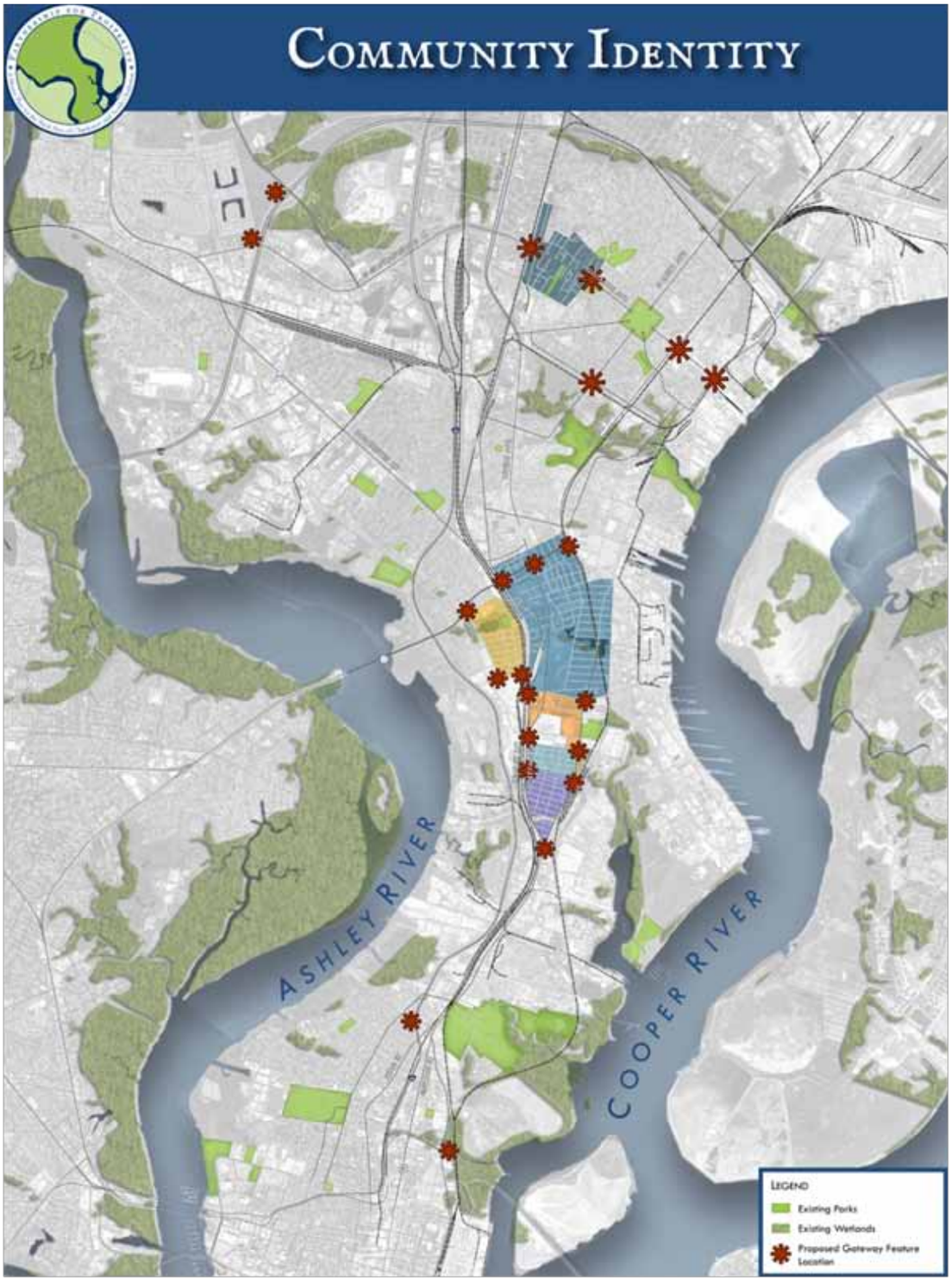


Figure 5.54 Community Identity (See Appendix A pg. 253)

both day and night. LED technology is also more energy efficient than traditional lighting.

Signage System (General)

- Create a unified set of identification components so that wayfinding signage can be easily recognized. Establish a hierarchy of elements, including such items as type size, font, and number of text lines per sign.
- Use materials and graphic elements that relate to the history of the Neck area. Consider elements that are similar (but distinct) to those used in the downtown Charleston area.
- Consider using multiple icons within the unified set of elements to identify different districts or areas.

Vehicular signs

- Create "trailblazer" signage at the edges of the project area, primarily from I-26 and I-526, but also along major surface roadways such as Rivers Avenue and Meeting Street, to direct vehicles and make other destinations easy to find and navigate within.

Pedestrian signs

- Consider additional informational signs along pedestrian routes to enhance historic and cultural opportunities.
- Evaluate using markers (dates or symbols) to identify architecturally significant buildings.

Destination Signs

- Organize destinations into three classes: primary destinations (generate greatest amount of traffic), secondary destinations (generate less traffic; signage mainly within applicable district), and local destinations (depicted on pedestrian maps only).

Parking Signs

- Create an iconic and easily recognizable "P" symbol (or similar equivalent) on parking signs so they can be easily recognized. Parking facilities should be clearly identified as "public parking".

Kiosks

- Kiosks should be located at major transit stops and high pedestrian traffic locations such as catalyst areas.
- Evaluate different sign and structure combinations that will contain orientation maps and destination lists.

Banners

- Banner design should match that of vehicular and street signs. Design banners so they can be changed frequently to promote local and seasonal events.

Branding

- Create visual images that define the essence of the Neck area. Explore which images create recognition and how these images could be incorporated into wayfinding elements and other informational devices.

URBAN FRAMEWORK SUMMARY

The concepts proposed in the master plan help promote the community values of connectedness, community vitality, environmental health, and economic freedom and foster the types of opportunities needed to revitalize the peninsula and position it for economic prosperity. The Neck area has always been an important part of the region thanks to its location and accessibility, but it now has the opportunity to re-emerge as a revitalized community, desired location, and destination in the Tri-County area.

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Chapter 6
Vision Outcomes: Multimodal Transportation System Improvements

This chapter defines improvements to the transportation network - the integrated network of highways, streets, transit services, bicycle network, and pedestrian walkways - that provide connectivity, access, and mobility and sustain economic growth and support livable communities.

Multimodal Transportation System Improvements

General

The physical organization of the Neck area should be supported by a balanced, defined and well-organized framework of a multimodal transportation network that provides connectivity, access and mobility for rail, freight, and people of all ages and abilities. An integrated network of highways, streets, transit services and facilities, bicycle networks, and pedestrian walkways will support and sustain economic growth and livability throughout the community, and reduce negative impacts on health, energy, and neighborhood quality while reducing travel delay.

Transportation is ultimately about access. Where there is access, commerce and other activities can happen. On a larger scale, a multimodal transportation network is essential to the local and regional economy of the Neck area. The port facilities, interstate highways, and rail lines allow freight to be easily moved in and out of the region. The Amtrak station and Charleston International Airport connect passengers to cities and markets within the Southeastern United States and beyond. Together, those facilities in the Neck area support the regional and statewide economy with a multimodal transportation network facilitating movement of people and goods.

Multimodal transportation options work together to move people and goods.

On the smaller scale, multimodal transportation improves the economy, shapes development patterns, and influences quality of life and the natural environment. The integration of transportation and land use planning results in smarter, more organized growth that creates travel efficiency, comfort and convenience. Land use and transportation are symbiotic. Development density and location influence travel patterns, and in turn, the degree of access and mobility options provided by the transportation system can influence land use and development trends. Urban design can facilitate travel choices and alternatives to driving or someone having to rely on friends and family to drive them.

One of the goals of this Master Plan for the Neck area is to create walkable communities and activity centers that have quality design that affords safe and convenient access for all travel modes, mixed uses that encourage transit-oriented development, and investment in transportation projects, particularly in transit options and non-motorized transportation. This framework supports smart growth land use patterns so that residents and employees have the option of walking, bicycling, or taking transit for at least some of their daily activities.

Transit

Transit Markets and Technologies

The graphic below shows the transit markets that exist in the Neck area and the corresponding transit technologies best suited to cater to the different markets.

Neighborhood	Local	Neighborhood
• Standard Bus	• Enhanced Bus • Bus Rapid Transit (BTR) • Light Rail Transit (LRT)	• Express Bus • Commuter Rail

Beyond the type of market it can serve, a transit mode is defined by the type of right-of-way, type of service and system technology. Right-of-way can be broken down into three categories:

- Fully controlled or separated right-of-way;
- Longitudinally physically separated with at grade crossings; and
- In street interacting among mixed traffic.

Types of service are defined by the region served, stopping schedule, frequency of service, and time of operation. System technology refers to the mechanical features such as power source, vehicle type and method of travel. The method of travel is the difference between "non-fixed guideway" or "fixed guideway" systems, the most common being rubber tires on concrete/asphalt or steel wheels on rail.

The following pages describe the characteristics and attributes of the following transit modes:

- Express Bus;
- Bus Rapid Transit (BRT);
- Commuter Rail;

- Light Rail (LRT);
- Streetcar; and
- Heavy Rail.

Specific transit modes are most appropriate to serve specific markets. Some technologies are better suited for dense, urban environments; while others are designed to serve regional, commuter-based needs.

Among the spectrum of transit technologies currently available in North America, heavy rail transit and light rail transit afford the greatest operating speeds and capacity. However, as displayed in **Figure 6.1**, rail-based technologies typically have a significantly greater cost than other modes of transit such as bus rapid transit, express bus, and local bus.

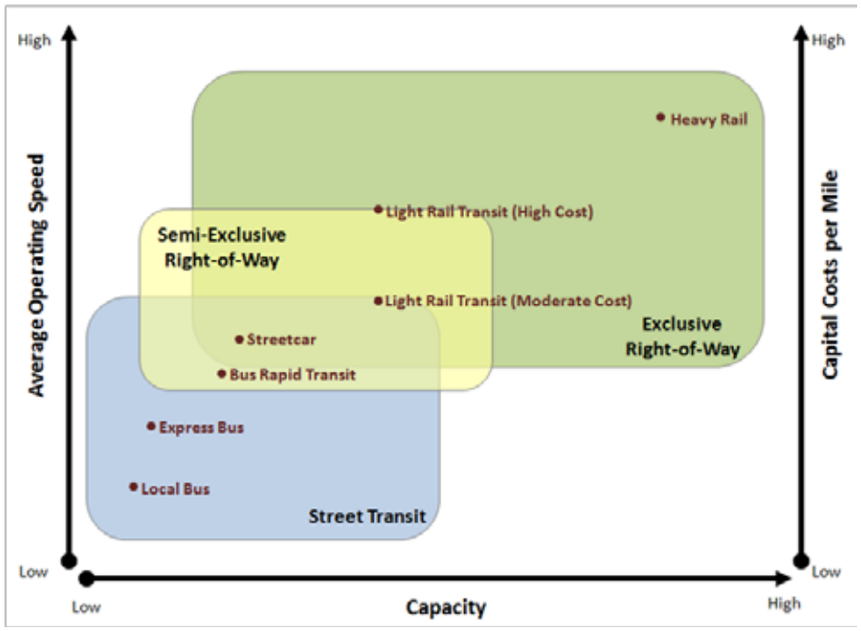


Figure 6.1 Rail Technologies

Express Bus

Express bus service utilizes diesel or hybrid buses to operate on existing roadways with mixed traffic, making limited stops along normal bus routes to accelerate service. Typical speeds range from 30 to 60 miles per hour.

Express bus

Express bus service typically does not use exclusive right-of-way. Numerous cities utilize Express Bus systems.

Bus Rapid Transit and Enhanced Bus

Bus Rapid Transit (BRT) utilizes diesel or hybrid buses to operate on dedicated right-of-ways, High Occupancy Vehicle (HOV) lanes or existing roadways. BRT systems are easily adaptable to community and corridor needs. This permanent, integrated system uses signal priority, queue jumpers, skip stop/express service and improved stations along corridors to make service efficient. Average travel speeds range from 10 to 30 miles per hour.

HOV lanes provide a faster moving transportation route for BRT systems.

HOV lanes are designated for vehicles with two or more passengers such as carpools and vanpools. Constructing a HOV lane rather than an exclusive bus-only lane provides added capacity for the general public that is willing to ride with two or more passengers. BRT systems can utilize the HOV lanes as well, and take advantage of a travel lane that is faster than a general purpose lane.

BRT systems provide urban and regional service. Stations are located between one-quarter and two miles apart. Service typically runs with a frequency of every three to 20 minutes (during peak periods).

Enhanced bus is a form of BRT with lower levels of infrastructure. Enhanced bus offers additional amenities and operational advances as compared to traditional local bus service, but does not operate in dedicated right-of-way like "true" BRT. Enhances bus services may feature upgraded stops and passenger amenities, stylized vehicles, unique branding, more frequent service, and other features that are not typically associated with local bus service.

Commuter Rail

Commuter rail systems are an electric or diesel propelled urban passenger train. Some trains can operate in "push-pull" mode allowing the train to be driven from either end. The trains operating in "push-pull" mode have a locomotive at one end of the train and a second control cab at the other end. A diesel multiple unit (DMU) is a train consisting of single or multiple carriages powered by one or more

Commuter rail provides a good transportation alternative to people with longer travel distances.

on-board diesel engines. Because DMUs have on-board engines, a separate locomotive is not necessary.

Riders of this service are characteristically workers who travel longer distances to their jobs. These trains are often more expensive and less frequent, and in most cities only operate during the peak periods. Average travel speeds range from 30 to 60 miles per hour.

Differing from light rail or bus rapid transit, commuter rail trains are larger and provide more seating and less standing room generally due to the longer commute time involved. Commuter rail services have the ability to coexist with freight rail providers because services are generally built on existing local standard gauge tracks; however, new dedicated tracks within the right-of-way are commonly constructed to prevent delays.

Commuter rail systems provide service between a city center and outer surrounding suburbs. Stations are generally located between two and five miles apart, with a route stretching between 10 and 125 miles. Trains typically following a schedule of operation with specific times rather than fixed intervals, and many operate only during peak hours.

Light Rail Transit

Light rail systems operate frequently and provide service to regional and urban areas.

Light rail transit (LRT) systems are powered by an overhead electric line and typically operate on a separated right-of-way. When necessary, light rail systems can operate in close proximity to mixed traffic, and alignments can exist within shared space within a city street or alongside a city street. Differing from heavy rail, light rail usually handles a smaller volume of riders and stops more frequently. Travel speeds are overall lower and range from 20 to 60 miles per hour.

Light rail systems provide service to regional and urban areas. Stations are generally spaced one mile apart and vary from sidewalk signs to platforms. Trains typically operate every 5 to 15 minutes (during peak periods).

Streetcar

Streetcars are electric-powered rail transit systems that run in city streets with mixed traffic and no grade separation. Differing from heavy rail and traditional light rail, streetcars handle smaller volumes of riders and stop more frequently. Travel speeds range from eight to 12 miles per hour.

Streetcars, also known as urban circulators, offer service to local areas.

Streetcars are often referred to as urban circulators and offer service to local areas. Stations are generally located one-quarter mile apart. Service typically runs every eight to 15 minutes (during peak periods).

Primary Corridors

Given the existing infrastructure in the Neck area, four corridors emerged as potential transit emphasis corridors:

- Spine Corridor: comprised of the land that surrounds the rail corridor, Rivers Avenue and Meeting Street that stretches north to Ashley Phosphate Road and beyond to Summerville;
- Dorchester Road Corridor: connects West Summerville to the heart of the Neck;
- I-26 Corridor: runs north-south connecting I-526 to the peninsula of Charleston; and
- Freight Rail Corridor: extends from Goose Creek to the peninsula of Charleston.

To serve the local and regional markets in these transit emphasis corridors, the following alternatives are recommended:

Enhanced Bus

- Provide enhanced bus service in the existing lanes on Rivers Avenue and Dorchester Road
- Increase frequency of service and improve amenities
- Construct a direct connection from Dorchester Road to the Intermodal Facility

Provide enhanced bus service on Rivers Ave. and Dorchester Rd.

Bus Rapid Transit

- Build upon strong ridership in Rivers Avenue Corridor
- Install dedicated guideway and operate bus rapid transit (BRT)

- Construct premium stations at catalyst sites
- Enable future conversion to light rail
- Operate with 10 minute frequency from 5:00 AM - 9:00 AM and from 3:00 PM - 9:30 PM
- Operate with 15 minute frequency from 9:00 AM - 3:00 PM

BRT systems should allow for future conversion to light rail systems.

Light Rail Transit

- Install light rail in the dedicated guideway when the development intensifies at nodes along the corridor
- Operate with 10 minute frequency from 5:00AM - 9:00AM and from 3:00 PM - 9:30 PM
- Operate with 15 minute frequency from 9:00AM - 3:00 PM

Light rail systems should be developed when development intensifies.

Express Bus

- Provide express bus service in the existing lanes on I-26 and Dorchester Road
- Increase frequency of service and improve amenities
- Connect to the North Charleston Intermodal Facility

Express bus should be provided on I-26 and Dorchester Rd.

Commuter Rail

- Construct commuter rail in freight rail corridor
- Offer peak period service to Summerville and/or Moncks Corner
- Operate from 5:00AM - 9:00AM & 3:00 PM - 8:30 PM with 30 minute frequency

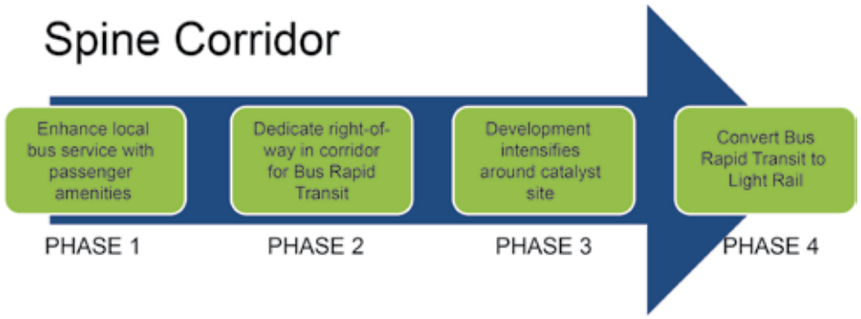
Operate commuter rail with regular frequency during peak times.

Phased Corridor Development

As part of an integrated development effort, opportunities to shape transit will occur over time. Service should be implemented in phases based on the goals of the overall vision, when the intended market is there to serve and level of financial investment and resources that would be required to implement each option is available. **Figure 6.2** illustrates the final phase of the corridor development. Provisions and consideration should be given to the timing of fixed rail projects (as shown in **Figure 6.3**):

The investment of light rail in the Spine Corridor should be made after the BRT project demonstrates sustainable success. The BRT project would include a two-lane fixed guideway in median of Rivers Ave. between King Street and I-526, and in the abandoned railroad ROW in the Meeting/King corridor between the King Street overpass and downtown. Reserving the right-of-way necessary to construct a light rail will enable the future conversion from bus to light rail. Although a transit vision is part of this Neck Master Plan, the intent of the AA (Alternatives Analysis) that is being advanced by BCDCOG is to examine specific aspects of the transit corridor and consider these transit modes in greater detail.

In the Freight Rail Corridor, commuter rail will build on the success of the regional express route. When the express routes begin to recognize high ridership, the planning and design of a commuter rail system should commence.



The implementation phases are reasonable from the standpoint of addressing the stated transit needs to varying degrees; however, it is prudent to consider the costs associated with each option. The phases are comprised of transit services that

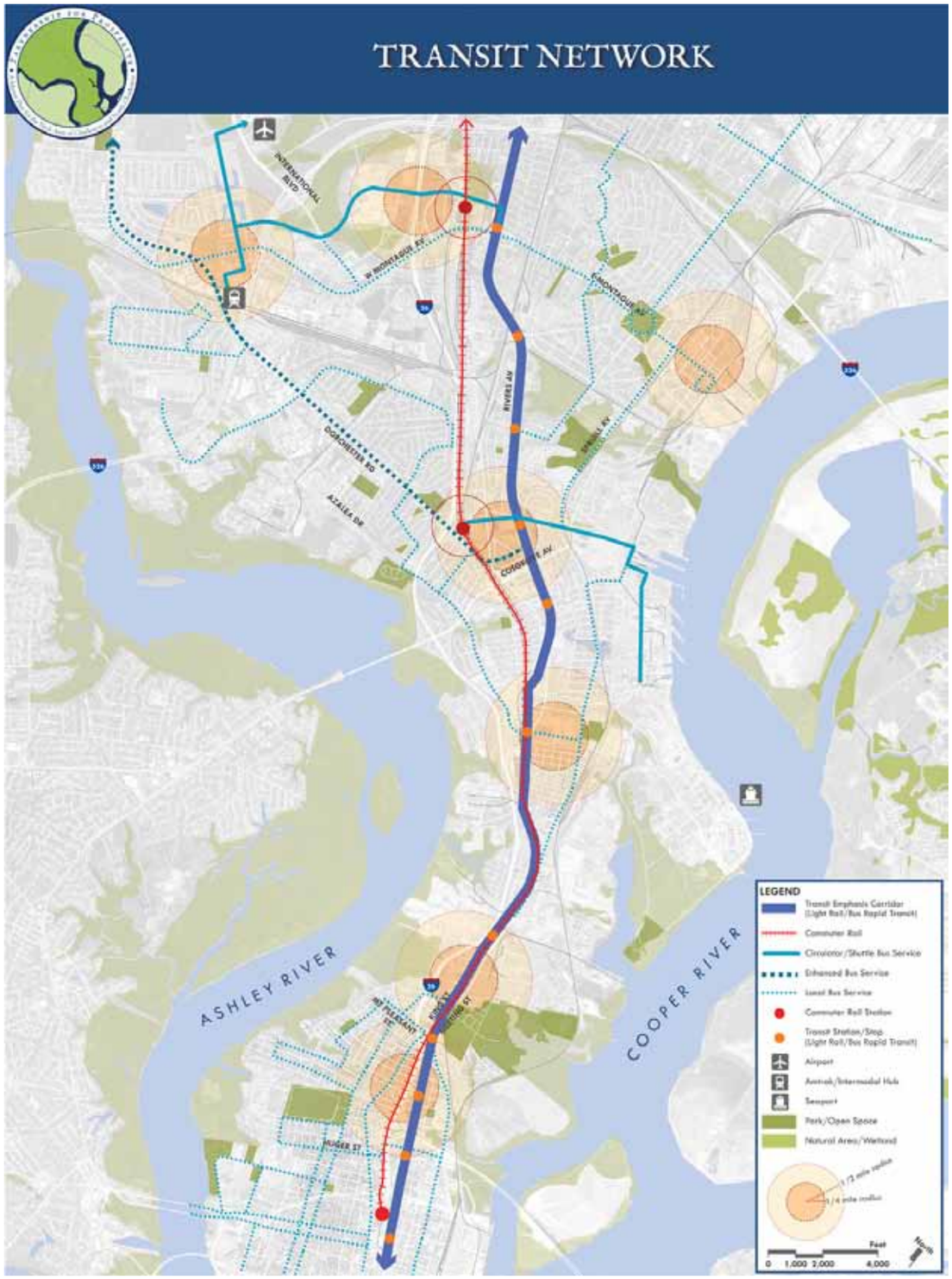


Figure 6.2 Planned Transit Network (See Appendix A pg. 214)

PHASE 1

Improve coverage and frequency of neighborhood service

PHASE 2

BRT through Spine Corridor

PHASE 3

Development at catalyst sites

PHASE 4

Replace BRT with light rail to serve new development

Figure 6.3 Phased Corridor Development

address regional, local and neighborhood transit needs. Services can be added as economic development occurs in the area and funds for new services become available. The service program is tentative and specific improvements should be based on experience gained as part of the implementation of preceding improvements.

Key Service Characteristics

Area-wide improvements to the existing fixed routes are recommended to serve the neighborhood market, but strategic investments made in these corridors and area wide will help to address regional and local transit needs. The specific services included in each corridor are based on the general strategies summarized in **Figure 6.4**.

Station Locations

The location of transit stations depends on surrounding land uses, as well as the physical capability of a site to accommodate a stopped transit vehicle. Transit stops are sited to maximize access to key activity centers within reasonable walking distance and are ideally placed in highly-visible locations with good pedestrian access. Stations should be integrated into the proposed catalyst areas in a cohesive manner. Transit infrastructure should be used as one tool to shape development efforts in the area by improving accessibility for people, while encouraging transit-oriented development patterns.

The existing SuperStop transfer facility has limited capacity at its current location. To accommodate improvements in standard bus service, the site could be expanded if it were to be moved north and incorporated into new development at the Shipwatch Square catalyst area.

Stations for the BRT/LRT proposed in the Spine Corridor are envisioned in the median along Rivers Avenue. Similar station amenities should be available at each stop.

BRT Station (Eugene, OR)

Light Rail Station (Phoenix, AZ)

Vehicle Technology	*Market*	*Description*
Spine Corridor		
Enhanced Bus	Local	Provide enhanced bus service on Rivers Ave. Include improved shelters, enhanced passenger information, unique branding, more frequent service.
Express Bus	Local	Construct two-lane fixed guideway in median of Rivers Ave. between King St. overpass and a point to the north of I-526 to be determined. Construct guideway to light rail standards to enable future conversion from bus to light rail.
Bus Rapid Transit	Local	Construct two-lane fixed guideway on abandoned railroad ROW in Meeting/King corridor between King St. overpass and downtown Charleston. Construct guideway to light rail standards to enable future conversion from bus to light rail. Portions of the corridor to be implemented with adjacent multi-use path.
Facility	Local	Replace SuperStop with expanded transfer facility to be incorporated into new development at McMillan catalyst site.
Light Rail Transit	Local	Convert existing fixed guideway on Rivers Ave. and in abandoned rail corridor from bus to light rail. Add necessary rail and systems infrastructure.
Dorchester Road Corridor		
Enhanced Bus	Local	Provide enhanced bus service on Dorchester Road from Rivers Ave. to North Charleston Intermodal Center. Include improved shelters, enhanced passenger information, unique branding, more frequent service.
Express Bus	Regional	Provide express bus service on Dorchester Road beyond the North Charleston Intermodal Center to the west side of Summerville.
Connection	Local / Regional	Construct street connection into Intermodal Center from Dorchester Road.
I-26 Corridor		
Enhanced Bus	Regional	Expand express bus service on I-26 using existing lanes (could use managed lanes in future if constructed).
Freight Rail Corridor		
Commuter Rail	Regional	Construct commuter rail service in existing freight rail corridors to Summerville and/or Moncks Corner.

Figure 6.4 Key Service Characteristics

Supporting Feeder Service

The fixed routes that operate in the Neck area will feed the neighborhood market into stations that will allow for easy connections to the other recommended transit improvements. Access to these local and regional services will provide more mobility choices for the residents of the Neck.

STANDARD BUS

- Improve existing CARTA service
- Offer greater coverage, higher frequencies and longer hours of operation

CARTA should expand service to include greater geographic coverage, higher frequencies, and longer hours of operation. To provide for wide access, stops are typically placed approximately every 800 feet, depending on surrounding land uses, transit demand, and other site-specific factors.

It is envisioned that passengers could use a transit mode that caters to the regional or local market to travel to a central location within the Neck area and then transfer to a standard bus route to get to their ultimate destination if necessary. Stops for feeder services should be located at the proposed stations for the express bus, BRT, LRT and commuter rail services. Consideration should be given to the frequency of service and how the future fixed route schedules could compliment the timing of the other transit modes.

Route	Route Name	Existing		Proposed	
		Hours of Operation	Frequency	Hours of Operation	Frequency
1	North Charleston Express	5:00AM - 9:00AM & 3:00PM - 8:30PM	30 minute	5:00AM - 9:00AM & 3:00PM - 8:30PM	30 minutes
-	Proposed Dorchester Road Express	-	-	5:00AM - 9:00AM & 3:00PM - 8:30PM	30 minutes
10	Rivers Avenue (with modifications)	6:00AM - 8:30PM	20 minute	6:00AM - 9:30PM	20 minutes
11	Dorchester/Airport	6:00AM - 9:00PM	60 minute	6:00AM - 9:30PM	30 minutes
12	Upper Dorchester	5:45AM - 9:34PM	45 minute	6:00AM - 9:30PM	30 minutes
13	Remount Rd.	6:30AM - 9:00PM	60 minute	6:00AM - 9:30PM	30 minutes
101	Spruill Ave.	7:00AM - 8:00PM	30 minute	6:00AM - 9:30PM	30 minutes
102	North Neck	6:30AM - 8:00PM	60 minute	6:00AM - 9:30PM	20 minutes
103	Leeds Ave.	7:00AM - 7:30PM	60 minute	6:00AM - 9:30PM	30 minutes
104	Montague Ave. (with modifications)	6:00AM - 8:00PM	60 minute	6:00AM - 9:30PM	30 minutes
-	Proposed Deviated Fixed Route at Mall Drive	-	-	6:00AM - 9:30PM	15 minutes
-	Proposed Deviated Fixed Route at Clemson	-	-	6:00AM - 9:30PM	15 minutes
CARTA is reviewing existing Peninsula Routes which may impact service in the Neck Area					

Figure 6.5 Recommended Modifications to Operations Plan

CHANGES TO EXISTING NETWORK

Figure 6.5 and following subsections present the recommended modifications to operations plan for the CARTA fixed routes, along with the other proposed express and deviated fixed-route services.

ROUTE 1 – NORTH CHARLESTON EXPRESS

- Connection from Downtown to North Charleston during commute hours
- Stops only Downtown and Super K Stop
- Service provided via I-26

Figure 6.6 depicts potential Route 1, the North Charleston Express.

Figure 6.6 Route 1 - North Charleston Express

DORCHESTER ROAD EXPRESS

- Connection from Downtown to Charleston International Airport
- Stops only Downtown and Western Summerville
- Service provided via Dorchester Road

Figure 6.7 depicts potential Route 2, the Dorchester Road Express.

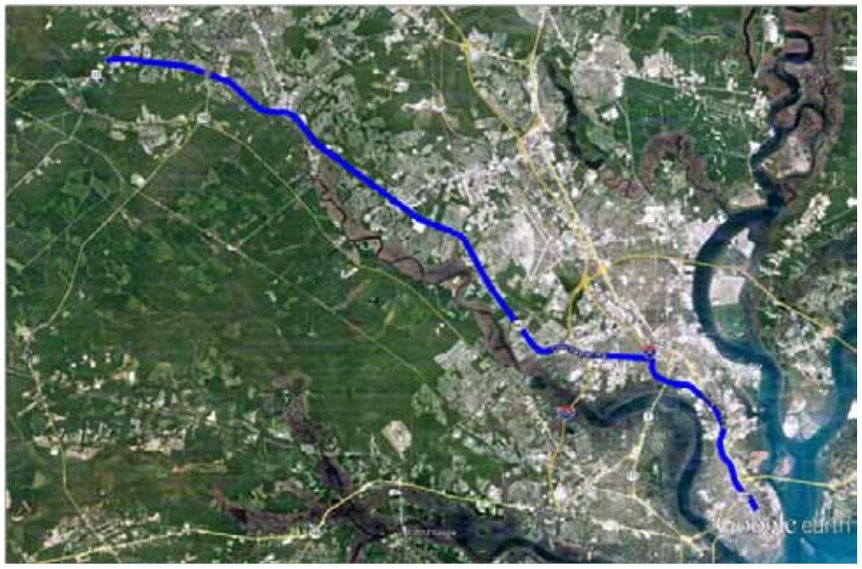


Figure 6.7 Route 2 - Dorchester Road Express

Route 10 & 102 - Rivers Avenue

Modified Route 10:

- Provide service every 20 minutes
  - Connection from Super Stop to Super K Stop park-and-ride
  - Service provided via: Rivers Avenue

Route 102:

- Provide service every 20 minutes
- Connection from Downtown to Super K Stop park-and-ride
- Service provided via: Rivers/Cosgrove Avenue SuperStop, Chicora Cherokee Neighborhood, Union Heights Neighborhood, Rosemont Neighborhood, Meeting and Mary Visitors Center

Figure 6.8 depicts potential Route 10 and 102, the Rivers Avenue route.

Figure 6.8 Route 10 & 102 - Rivers Avenue

Route 11 Dorchester / Airport

- Provide service every 30 minutes
- Connection to Downtown, Rivers / Cosgrove Avenue SuperStop, Tanger Outlets / Wal-mart, and Charleston International Airport
- Service provided via: Dorchester Road and Meeting Street

Figure 6.9 depicts potential Route 11, the Dorchester/Airport route.

Figure 6.9 Route 11 - Dorchester / Airport

ROUTE 12 UPPER DORCHESTER

- Local Connector
  - Provide service every 30 minutes
  - Connection to Rivers / Cosgrove Avenue SuperStop, Dorchester Road / Ashley Phosphate Blvd., and Super K Stop park-and-ride
  - Service provided via: Dorchester Road, Ashley Phosphate and Rivers Avenue

Figure 6.10 depicts potential Route12, the Upper Dorchester route.

Figure 6.10 Route 12 - Upper Dorchester

ROUTE 13 REMOUNT ROAD

- Local Connector
  - Provide service every 30 minutes
  - Connection to Rivers / Cosgrove Avenue SuperStop, Remount Road and Yeamans Hall Road, and Port of Embarkation
  - Service provided via: Remount Road, Yeamans Hall Road, Rivers Avenue and Spruill Avenue

Figure 6.11 depicts potential Route 13, the Remount Road route.

Figure 6.11 Route 13 - Remount Road

ROUTE 101 SPRUILL AVENUE

- Discontinue Route 101
- This service area will be served by Route 109 and a future deviated fixed route circulator.

Figure 6.12 depicts potential Route 101, the Spruill Avenue route.

Figure 6.12 Route 101 - Spruill Avenue

Route 103 Leeds Avenue

- Local Connector
  - Provide service every 30 minutes
  - Connection to Rivers/Cosgrove Avenue SuperStop, Lonnie Hamilton County Office Building, Cummins Plant

Figure 6.13 depicts potential Route 103, the Leeds Avenue route.

Figure 6.13 Route 103 - Leeds Avenue

Route 104 Montague Avenue

- Local Connector
  - Provide service every 30 minutes
  - Connection to North Charleston City Hall, Tanger Outlet / Wal-mart and community around Dorsey Avenue
  - Service provided via: Montague Avenue

Figure 6.14 depicts potential Route 104, the Montague Avenue route.

Figure 6.14 Route 104 - Montague Avenue

Potential Mall Drive Deviated Fixed Route

- Deviated Fixed Route
  - Provide deviated service every 15 minutes
  - Connection to North Charleston City Hall, Tanger Outlet / Wal-mart, and Charleston International Airport
  - Service provided via: Mall Drive, new connection over I-26, and International Blvd.

Figure 6.15 depicts Potential Mall Drive Deviated Fixed Route.

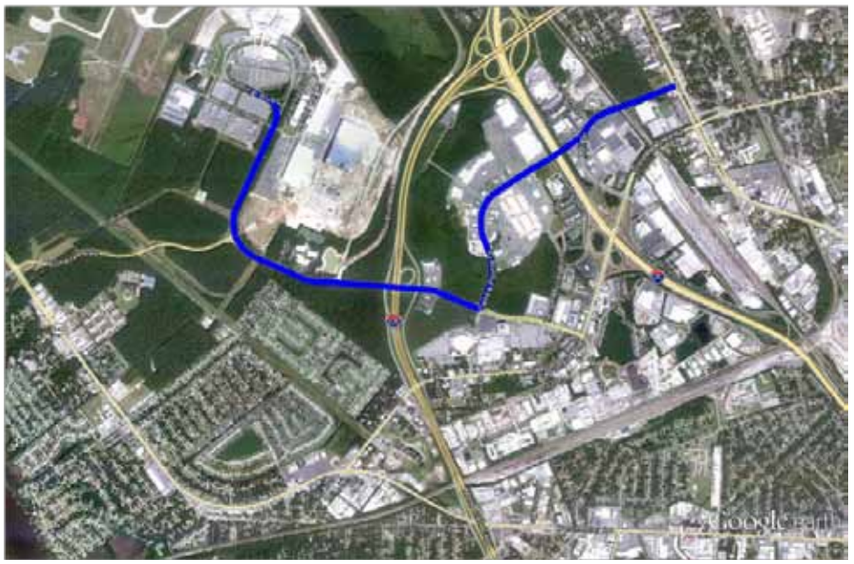


Figure 6.15 Potential Mall Drive Deviated Fixed Route

Potential Clemson Deviated Fixed Route

- Deviated Fixed Route
  - Provide deviated service every 15 minutes
  - Connection to North Charleston City Hall, Tanger Outlet / Wal-mart, and Charleston International Airport
  - Service provided via: Mall Drive, new connection over I-26, and International Blvd.

Figure 6.16 depicts Potential Clemson Deviated Fixed Route.

Figure 6.16 Potential Clemson Deviated Fixed Route

Bicycle and Pedestrian Network

Introduction

Improving bicycle and pedestrian safety and accessibility is one of the critical elements of the Partnership for Prosperity Master Plan. As defined in previous chapters, the marginal environment for walking and bicycling throughout much of the Neck area represents a haphazard treatment of pedestrians and bicyclists and limits use of those active modes – as well as transit – for health, recreation and destination-oriented travel. As a complement to the development and revitalization of the mixed use catalyst areas and public transportation improvement strategy, the Master Plan defines a bicycle and pedestrian network (see **Figure 6.17**) that provides connectivity between residential areas and retail, civic or employment destinations, access to the water, parks and recreation amenities, and linkages to public transportation stations and corridors.

There are two central elements to the development of the Neck area bicycle and pedestrian plan:

1. Improve parallel street connectivity within the Neck Area

This plan looks at how to create opportunities for a redundant street network that can help organize the flow of trucks and auto traffic, protect neighborhoods from commercial vehicle noise and vibration impacts, and provide safe and convenient opportunities for pedestrians, bicyclists and transit users to reach their destinations. That is the essence of the development phasing plan for each catalyst area site. In some cases these connections and organization can help overcome barriers created by rail and highway facilities that separate people from their destinations. For instance, a new parallel street to Montague Avenue that links Mall Drive and North Charleston City Hall with Tanger Outlets and the Coliseum across I-26 is an example of that strategy. It should be designed to support the Gateway Entertainment District as a "Complete Street" that safely accommodates pedestrians, bicyclists, transit and autos. Similarly, enhancing north-south local street connectivity between Hobson Avenue, Noisette Boulevard and Virginia Avenue will help provide the network capacity to facilitate important changes along Spruill Avenue and Rivers Avenue to better accommodate travel alternatives.

2. Create a bicycle and pedestrian North-South Spine and a connected network

A well-marked, signed and highly visible corridor designed to improve bicycle and pedestrian connectivity between Charleston and North Charleston is a defining project for the Partnership for Prosperity Master Plan. It is actually a series of projects that, when developed through the cooperative planning of both cities, SCDOT and other entities will provide a signature facility promoting active recreation and non-motorized transportation throughout the study area. It can help redefine the perception and enhance the functionality of the Neck area for people of all ages and abilities. The North-South Spine would support bicyclists of varying skill levels and complete the network of sidewalks, on-road bikeways and shared-use paths to promote healthier neighborhoods and safer accessibility to commercial and employment destinations. As a complement to the North-South Spine network, the plan envisions a series of other connections into the Spine to better connect the entire study area. Both cities should work with SCDOT to advance "complete streets" principles for accommodating all modes of travel using feasible strategies within available rights-of-way.

Figure 6.18 presents the strategy for completing the North-South Spine network and developing a well-connected network for non-motorized transportation throughout the Neck study area. The map focuses on the Spruill Avenue corridor as a prime opportunity to transform this relatively lower speed and lower volume roadway into a well-defined street for all users. **Appendix D** includes a memo drafted for SCDOT's and the City of North Charleston's consideration to support an argument for restriping Spruill Avenue as a three-lane facility with buffered

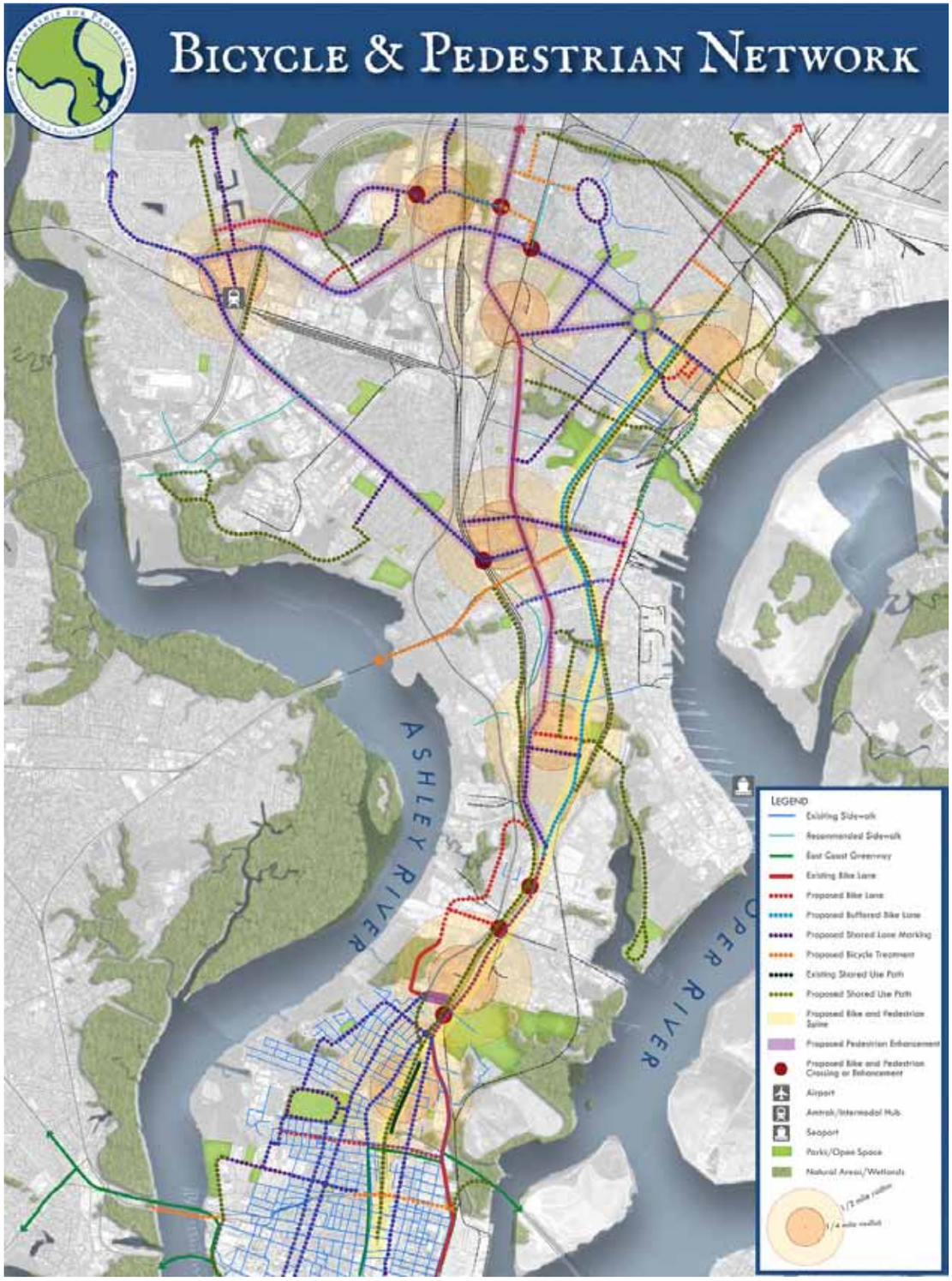


Figure 6.17 Bicycle & Pedestrian Network (See Appendix A pg. 217)

bicycle lanes and wider sidewalks. The memo makes the point that the characteristics of Spruill Avenue make it best suited to support destination-oriented multimodal travel between North Charleston and Charleston, and help create a safer roadway that provides access to many residential neighborhoods. *Note: Spruill Avenue was recently resurfaced and restriped with one lane going in each direction and bicycle lanes on both sides of the street.*

As indicated in the map, the North-South Spine route entails both on-road and off-road facility treatments. Spruill Avenue would provide much of the on-street portion of the Spine using either a standard bike lane as recently marked in North Charleston, or as indicated on the map, a buffered bike lane that further separates bicycles from moving traffic. The off-road portion of the network would consist of a conversion of the existing CSX rail line parallel to Spruill Avenue into a shared use path of at least 10' wide (14' is desirable). Where Spruill merges with King and Meeting Streets, the Spine network would become a combination of on-street bike lanes on Morison Drive and Meeting Street and off-road shared use path on King Street. Bicycle lanes on Rivers Avenue and Morrison Drive would feed into and support the Spine's connectivity to other parts of the Neck and peninsula. Shared lane markings on roads like Dorchester and Montague would maintain existing road capacity while providing support for those cyclists with the experience and comfort to ride with traffic.

Pedestrian access and safety is an equally important consideration. Most of the pedestrian-related strategies are defined in Chapter 5 as part of the discussion of phased development associated with each catalyst area. However, the map also indicates locations for new or enhanced pedestrian crossings to access the Spine network and overcome barriers between residential areas and non-residential destinations. The enhancements would generally consist of improved crosswalk markings and signals, wider sidewalks at intersections, and design strategies that help motorists see pedestrians more easily. Each specific modification will need to be determined on a case-by-case basis.

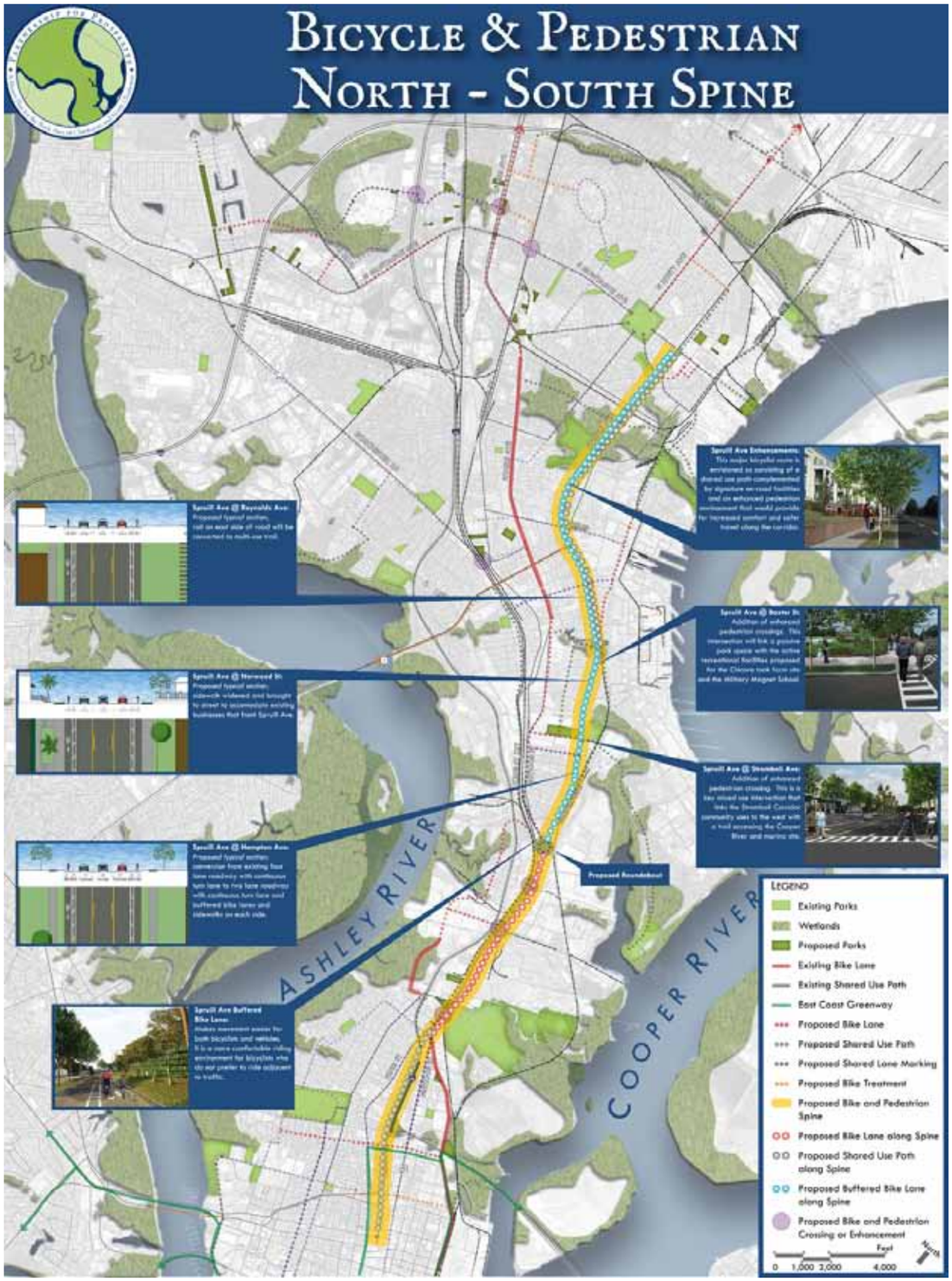


Figure 6.18 Bicycle & Pedestrian North-South Spine (See Appendix A pg. 218)

Developing the Network

The master plan for creating a bicycle network in the Neck are requires a balanced approach of both on-street and off-road riding that accommodates the needs and comfort levels of people of different ages and abilities, or level of experience. There are many different types of facility strategies and treatments that improve safety, convenience and comfort for bicycling. **Figures 6.19** and **6.20** illustrate using diagrams and pictures the different types of bicycling facility treatments that help promote a culture of bicycling. As indicated on the graphic, on-street treatments vary based on the posted speed of the roadway and its function.

When most people rely on bicycling for transportation (or consider it as an alternative to driving), they generally try to find routes where they can reach their destination most efficiently and comfortably. People living in the flat terrain of the greater Charleston area do not have to worry about avoiding hills; instead it is water bodies, the interstate and rail network, industrial lands and busy roadways with little accommodation for cyclists that deter convenient and accessible travel by bicycle. Bicyclists generally want a direct route that has minimal conflicts (with pedestrians, other bicyclists, glass and debris, etc.) and the ability to maintain a steady pace.

Off-road trails offer mobility, but they often lack access to destinations and feature hazards of their own, like dogs on long leashes or groups of slow-moving walkers. Not everyone is willing to take to the streets for bicycling, which are often busy with commuters, delivery trucks and distracted drivers, but they provide the most direct means of connecting neighborhoods, services and employment and the Master Plan has the objective of creating a stronger culture of bicycling in the Neck area. For that to happen it means developing an on-street network that is conducive for bicycling in addition to the shared use path network.

Creating a culture of on-street bicycle riding takes time and education, but perhaps its greatest value is that it does not have to take a lot of money. Well-designed bicycle networks provide economic value for the same reason highways and rail lines do - they improve access

Figure 6.19 Bicycle Facilities & Treatments

and mobility. When integrated into a comprehensive bicycle and pedestrian plan, the two elements of access and mobility have the greatest power of improving the culture of bicycling as transportation, and defining a positive brand identity for a region, community or neighborhood, generating economic returns in several ways. That is part of the strategy for the Neck area. By making the neighborhoods and streets more supportive of bicycling by providing both destinations and well-marked and designed facilities and treatments, the area will become more attractive and people who need transportation options will have them.

Different types of bicyclists clearly need different strategies to account for varying levels of experience and comfort. Destination-oriented cyclists benefit from a direct, well-defined routing plan that offers good flow and reduced conflicts. Most cities and urban areas like Charleston and North Charleston have the basics for such a network already in place using existing streets. Lower speed streets (collector roads and local streets, primarily, with posted speeds of 30 mph or lower) should function as shared streets that accommodate automobiles and bicycles within the travel lane.

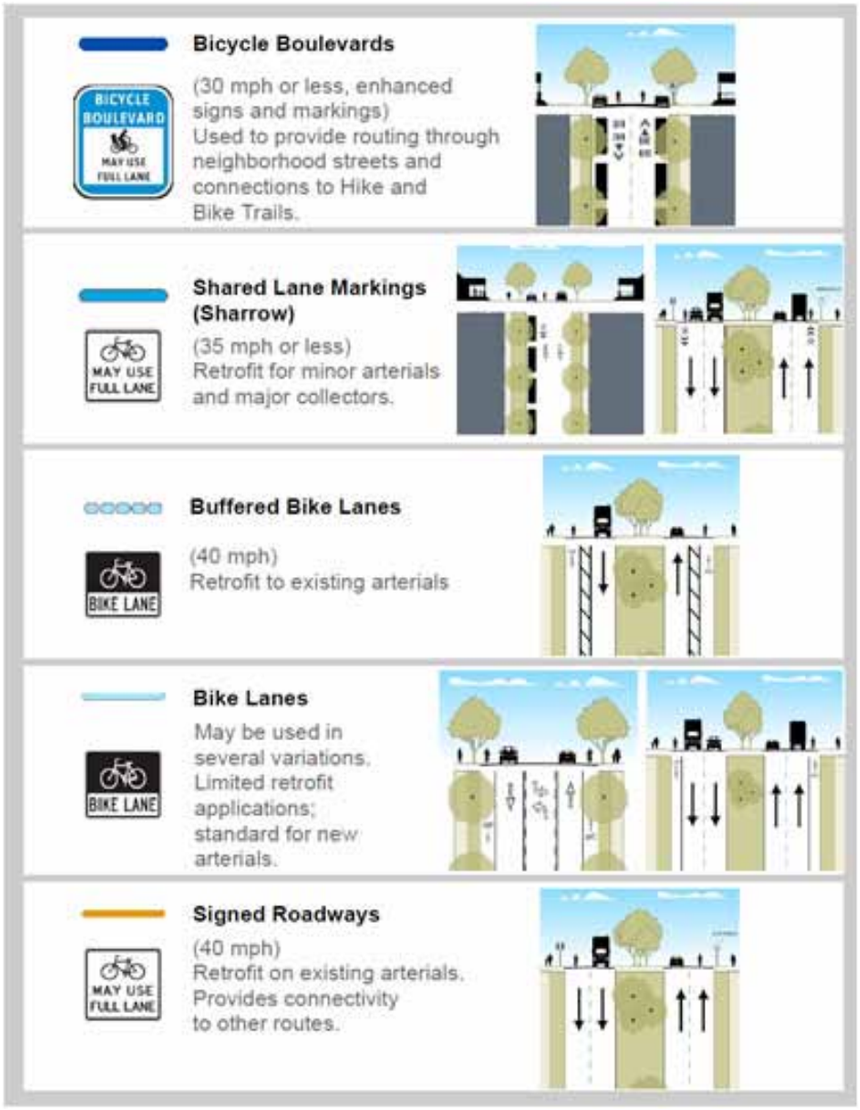


Figure 6.20 Bicycle Facilities by Roadway Speed

Shared Street Facilities

The most common approach of many agencies is to add bike lanes or other expensive retrofits for separated on-street facilities. Unfortunately, they are often poorly designed to reduce costs. Furthermore, narrowing roads to add bike lanes within the right-of-way can run afoul of official design standards and pose problems for commercial vehicles and even some motorists accustomed to traveling faster. Even when properly designed, that approach results in a patchwork of roads with bike lanes, such as the relatively short stretch of Rivers Avenue, and no real continuity of network. That puts cyclists in a quandary when the designated bike lane ends, forcing them to switch from bike lane to sidewalk or merge into the traffic lane, which can present safety problems.

What is needed for the Neck area is a coordinated strategy creating a lower cost shared network to make cycling more accepted and inviting. By using streets that best exhibit a few key traits, a plan for shared streets serves motorists and bicyclists equitably, offering both mobility and accessibility. Using shared lane pavement markings ("sharrows") and clear signage does not require right-of-way, offering a more cost-effective and publicly-accepted way of building a network providing mobility and accessibility, generating greater demand. It can have the added benefit of slowing down motorized traffic in appropriate locations, such as through or adjacent to neighborhoods, and there is evidence that bicyclists spend more money shopping when averaged over the course of a month or year than auto drivers.

Sharrows show cyclists where to ride and alert motorists of bicycle presence.

Six Key Considerations

Selecting the right streets to place bicycling on a more equitable level as cars can have profound effects on personal mobility and economic development. There are six considerations to creating a preferential on-road network offering shared space for bicycle- and car-drivers:

1. **Continuous Traffic Flow.** A network of well-spaced collector or minor arterial streets with few stop signs or signals that traverse the Neck area is good for motorists as well as bicyclists. It serves as the backbone of a good bicycling community. A smooth asphalt, non-brick, surface is important. Too many stops at signs or signals disrupts the flow and introduces safety issues for cyclists. These are the bikeways or bike boulevards that link different parts of a community together east to west, north to south.

2. **A Connected Network.** Cyclists don't mind riding ½ mile or so out of direction to traverse a network of streets offering good flow and fewer conflicts. Stitching this network of different types of streets with distinctive signage, pavement markings, banners and clear maps further reinforces the emphasis on primary routes where cyclists are invited and should be expected.

3. **Capacity Availability.** Very experienced cyclists will ride in heavy traffic, but it is intimidating for others. The Neck area has many 2- and 4-lane roads operating well below capacity much of the day, making it easy for motorists to safely pass cyclists controlling the lane.

4. **Acceptable Speed Differential.** As traffic speeds rise, the need for designated bike lanes or paths increases. Roads with operating speeds of 20 to 35 mph create a more comfortable environment for bicyclists averaging between 10-20 miles per hour without the need for physical separation. Shared lane markings and the presence of bicyclists using the full lane can help keep traffic at the desired target speed.

5. **Education.** Many motorists do not understand that sharing the road means one at a time, not riding side-by-side. Lane widths on most streets are too narrow for safe side-by-side sharing. Similarly, many cyclists do not follow the laws of the road. Using properly designed sharrows and adding signage helps to reinforce the message that bicyclists belong. Sharrows can also indicate where bicyclists should ride in the lane, which is particularly important so that bicyclists ride out of the "door zone" when there is on-street parking. This must be augmented by educational messages explaining the purpose of shared lane signage and markings, which may be unfamiliar to many motorists, and specific training for law enforcement, cyclists and motorists. BCDCOG and both cities should support efforts by non-profits, cycling clubs and other organizations to provide training for bicyclists and motorists.

The Neck area should take advantage of the available capacity for cyclists.

6. **Enforcement.** Laws vary state to state, but roads with travel lanes less than 14' wide are not suitable for side-by-side sharing. Police play an important role in educational and enforcement efforts so that both car drivers and bicycle drivers operate safely and with respect for each other. It is critical to get city and county law enforcement on board for an on-street cycling strategy in the Neck area and throughout the BCDCOG region.

Taking those steps to build an area-wide network one street at a time will prove effective at both attracting riders and creating economic vitality for a more mobile and accessible Neck area community.

Chapter 7
Vision Outcomes: Goods Movement Routing

This chapter describes the facilitation of freight mobility in the Neck area, providing a network that increases reliability, reduces congestion, improves safety, and reduces vehicle emissions.

Goods Movement Routing

Urban Policy for Freight Mobility

From the perspective of facilitating freight mobility, possibly the most important step Charleston and North Charleston can take is the designation of a regional truck route network that is designed, operated and maintained to accommodate the movement of trucks. Historically, many urban areas in the U.S. have designated truck routes as a means of keeping trucks out of residential neighborhoods. However, from the perspective of facilitating freight movements, truck routes should be designated, designed, operated and maintained to accommodate trucks. Growing congestion and the service sensitivity of local industries and major retailers argue for the establishment of a core network that facilitates commercial vehicle flows in the Neck area. The strategic purpose of a designated truck route network should be viewed from two perspectives:

- From a land use and development perspective, the network is protected by zoning, building permits, and enforcement, so it can sustain truck traffic volumes efficiently.
- From an operations perspective, the network is managed for freight. Traffic management centers observe the routes, have staff members conversant with trucking requirements, and can reach the logistics community with timely advisories. Signals are timed for truck movement from known freight generators and receivers.

Goals for the designation of a Neck area truck route network should serve the following purposes:

- Increase freight transit reliability;
- Reduce congestion and provide congestion relief due to incidents on major arterials;
- Improve safety; and
- Reduce truck emissions.

As part of the Neck Area Master Plan effort, a GIS based analysis was undertaken that resulted in a recommended roadway network for a Neck Area Truck Route Network. The proposed truck routes represent a finite set of roadways providing access to, from, and within the Neck area, while providing a minimal level of incursion into residential neighborhoods. The network is illustrated in **Figure 7.1**.

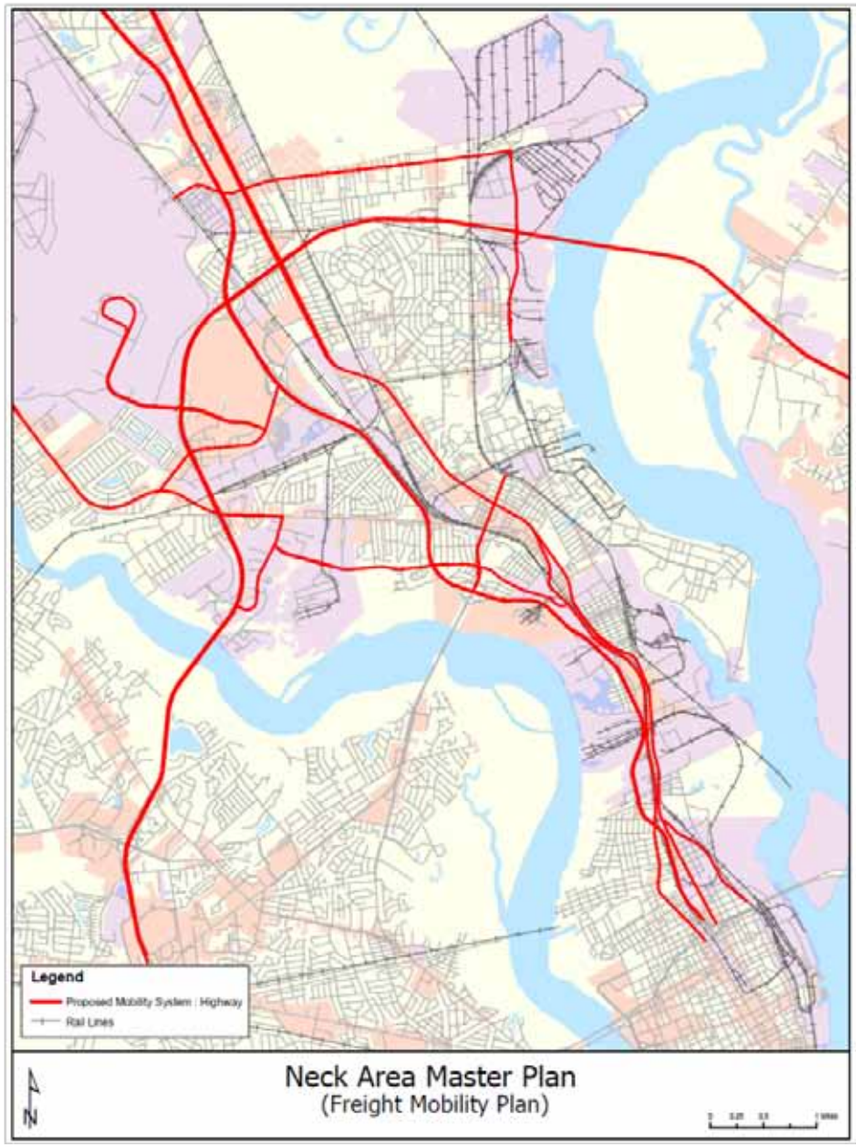


Figure 7.1 Recommended Neck Priority Truck Route Network

This proposed truck route network should be viewed as a good starting point for a network that will need updating over time. For instance, roadways within the former US Navy Yard are not included within this network. For connectivity to current facilities present on the former base, Ave B N., Noisette Boulevard, and both North and South Hobson Avenues would likely need to be included. Using the proposed route network, a series of outreach activities with private and public

sector, and with community leaders, should be conducted using the recommended network as an initial foundation for further discussion.

Analysis of the Freight Network

Methodology Introduction

Commercial vehicle movement, more commonly truck mobility, is a necessary element of local economic vitality and growth. Serving the delivery and shipping needs of a wide range of customers, from residential to big box retail, trucks are essential to the so called "last mile" of product supply chains. This plan seeks to describe a methodical approach, and potential outcomes that will support truck mobility while meeting the needs of current and future communities, as well as public and private stakeholders within the Neck area.

Designating truck routes and managing these routes as a strategic network is a strategy that can both reduce long term investment and maintenance needs, while mitigating negative externalities (noise, pollution, congestion, etc.) that large truck traffic can impart upon communities. While State DOT, COG and MPO plans often identify commercial vehicle roadway networks, such plans do not often translate into a designated network that is managed specifically for freight mobility.

The methodology utilized in recommending the final network designation for the Neck area provides a degree of analysis, using available data, where the efficiency of the infrastructure is characterized and the freight oriented activities are evaluated together. This analysis does not require a designated route network as an outcome, yet provides the ability to map a network to satisfy current and forecasted future needs. The resulting network provides a tool to monitor and manage truck movements and plan for the interaction of other goals of the Master Plan including bicycle and pedestrian, personal vehicle and transit activities.

The analysis and resulting scorecard utilizing the data fields presented below is a strategic exercise to identify a network of roadways to satisfy current and future commercial vehicle traffic needs. The process described in this Master Plan is largely quantitative and should not be considered as a final network without further vetting by stakeholder groups. The consideration of additional quantitative sources, as well as qualitative input from community and public sector leaders, will supplement the methodology and final outcomes.

"Freight mobility" is an encompassing strategy to provide efficient and effective movement of goods and services necessary to the economic health of a given area. This movement may respond to the needs of local shippers and distribution centers or the traffic associated with the various modal providers present in the area. The development of a successful freight mobility plan requires an understanding of the current freight environment, attraction and detraction features present, and the interrelationships resulting from the interactions between transportation providers, shippers, and receivers.

Roadway Characteristics

Functional Class

The first assessment for freight mobility examined the intended utilization of Neck area roadways, based on functional class assignment (see **Figure 7.2**). Optimal assignments of interstate and arterial are founded upon design vehicle dimensions which favor the broad definition of commercial vehicles. Collectors generally provide connectivity and access necessary to service current or future freight activity centers.

ROADWAY	FUNCTIONAL CLASS (Points Awarded)				
ID	INTERSTATE (5)	FREEWAY (4)	ARTERIAL - PRINCIPAL (3)	ARTERIAL - MINOR (2)	COLLECTOR (1)
I-26	X				
I-526	X				
US 52			X		
SC 642 (Dorchester Road)			X		
SC 7 (Cosgrove)			X		
County 48 (McMillan)			X		
County 32 (Spruill Ave: McMillan to Burton)			X		
Virginia Ave (north of I-526)			X		
Remount Road			X		
County 86			X		
N Rhett Ave				X	
Montaque Ave, E and W				X	
Spruill Ave (outside McMillan to Burton)				X	
US 78				X	
Morrison Drive				X	
Virginia Ave (south of I-526)					X
S Rhett Ave					X
Durant Ave					X
Mall Drive					X
International Blvd					X
Meeting Street					X
Leeds Ave					X
Azalea Ave					X
Industrial Ave					X
Woodlawn Ave					X
S Johns Ave					X
O'Hear Ave					X
Buist Ave					X

Figure 7.2 Roadway Functional Classes, Present in the Neck Area

Feature Class Code

Similar to the functional class assignment, Feature Class Code (FFC) provides a more detailed assessment of roadway condition access management. Access management is an increasingly popular set of techniques used by state and local agencies to control access to major thoroughfares. The result is a safer and more efficient roadway network for users. Without access management, roadways could see an increase in traffic congestion, accidents, and pollution from vehicle emissions. The Transportation Research Board (TRB) describes 10 principles of access management, derived from traffic management experts. Those most applicable to using the FFC in this context are:

- **Provide a Specialized Roadway Network:** Design and manage roadways according to their primary functions.
- **Limit Direct Access to Major Roadways:** Roadways that serve higher volumes of through traffic need more access control to preserve their function.
- **Remove Turning Vehicles from Through Traffic Lanes:** Turning lanes reduce the severity and duration of conflicts between turning vehicles and improves the safety and efficiency of intersections.
- **Use Nontraversable Medians to Manage Left Turn Movements:** Nontraversable medians and other techniques that minimize left turns are effective in improving roadway safety and efficiency.

Three categories of FCC are included by the roadway set shown in **Figure 7.3;**

- Primary Highway with Limited Access (A1)
- Primary Road without Limited Access (A2)
- Secondary and Connecting Road (A3)

Each further sub-categorize based on lane separation, which is a further form of access management by restricting turning maneuvers and directional access onto the roadway from adjoining surfaces. Those roadways categorized as local by FCC have been scored as zero (see **Figure 8.3**). US 52, SC 7, County 48, and Montague Ave required further division during this assessment.

Multimodal Facility Access

With a strong multimodal history, the Neck area economy depends on the ability of trucks to provide connectivity to area ports and rail yards. As a result, connectivity must be a central element to any freight mobility plan and truck network for the region. Facility access is associated with many roadways, depending on the facility connections, but connectivity should not be the only criteria for truck route inclusion. However, the degree to which a roadway provides connectivity should affect its ranking in the analysis. The multimodal facility access criterion applies a value to potential future direct access to the ICTF site. The roadways are evaluated in **Figure 7.4**.

ROADWAY ID	FEATURE CLASS CODE (Points Awarded)					
	A1	A2		A3		
	Separated (5)	Separated (4)	Unseparated (3)	Separated (2)	Unseparated (1)	Mixed or Unknown (0)
I-26	X					
I-526	X					
US 52 (north of Piggly Wiggly Drive)		X				
US 52 (south of Piggly Wiggly Drive)			X			
SC 642 (Dorchester Road)						X
SC 7 (Cosgrove Ave, north of Meeting Street)					X	
SC 7 (Cosgrove Ave, south of Meeting Street)				X		
County 48 (McMillan, north of Old Pine Circle)					X	
County 48 (McMillan, south of Old Pine Circle)						X
County 32 (Spruill Ave: McMillan to Burton)					X	
Virginia Ave (north of I-526)						X
Remount Road						X
County 86						X
N Rhett Ave					X	
Montague Ave, W					X	
Montague Ave, E						X
Spruill Ave (outside McMillan to Burton)					X	
US 78			X			
Morrison Drive					X	
Virginia Ave (south of I-526)						X
S Rhett Ave						X
Durant Ave						X
Mall Drive						X
International Blvd				X		
Meeting Street						X
Leeds Ave						X
Azalea Ave						X
Industrial Ave						X
Woodlawn Ave						X
S Johns Ave						X
O'Hear Ave						X
Buist Ave						X

Figure 7.3 Feature Class Code

ROADWAY ID	MULTI-MODAL FACILITY ACCESS / DRAYAGE (Points Awarded)					
	CURRENT DIRECT ACCESS (5)	POTENTIAL DIRECT ACCESS (4)	"NEXT ROAD" (3)	(2)	REGIONAL ACCESS (1)	OTHER (0)
I-26					X	
I-526					X	
US52 (north of Piggly Wiggly Drive)						X
US 52 (south of Piggly Wiggly Drive)		X				
SC 642 (Dorchester Road)			X			
SC 7 (Cosgrove Ave, north of Meeting Street)			X			
SC 7 (Cosgrove Ave, south of Meeting Street)						X
County 48 (McMillan, north of Old Pine Circle)			X			
County 48 (McMillan, south of Old Pine Circle)						X
County 32 (Spruill Ave: McMillan to Burton)		X				
Virginia Ave (north of I-526)	X					
Remount Road	X					
County 86	X					
N Rhett Ave						X
Montague Ave, W			X			
Montague Ave, E						X
Spruill Ave (outside McMillan to Burton)						X
US 78						X
Morrison Drive	X					
Virginia Ave (south of I-526)			X			
S Rhett Ave						X
Durant Ave						X
Mall Drive						X
International Blvd	X					
Meeting Street			X			
Leeds Ave						X
Azalea Ave						X
Industrial Ave						X
Woodlawn Ave						X
S Johns Ave			X			
O'Hear Ave			X			
Buist Ave			X			

Figure 7.4 Multimodal Access

Proximity to High to Moderate Freight Intensity Activity

Roadways with increased freight activities generate higher demands for commercial vehicle traffic. To assess freight activity demand, businesses were analyzed for the level of truck traffic they generate in to, out of, facilities. Commercial traffic can then be projected based on the level of commercial activity or intensity. Though many roadways attract commercial vehicles, the ability to assess where activity is greatest provides the basis for managing through flows onto key routes. Trucks, by servicing local stops, inherently make many cross access movements seeking the shortest route. Visually interpreting business density, as opposed to individual points, can suggest route intensity categorized as low, medium or high. Assigned values are five points for high, three for moderate, one for low, and an additional category of zero points for roadways with no discernible businesses of this type. The assessment is illustrated in **Figure 7.5**.

ROADWAY ID	HIGH TO MODERATE FREIGHT ITENSIVE ACTIVITY DENSITY			
	HIGH (5)	MODERATE (3)	LOW (1)	NONE (0)
I-26				X
I-526				X
US52 (north of Piggly Wiggly Drive)	X			
US52 (south of Piggly Wiggly Drive)	X			
SC642 (Dorchester Road)	X			
SC7 (Cosgrove Ave, north of Meeting Street)	X			
SC7 (Cosgrove Ave, south of Meeting Street)			X	
County48 (McMillan, north of Old Pine Circle)			X	
County48 (McMillan, south of Old Pine Circle)			X	
County32 (Spruill Ave: McMillan to Burton)			X	
Virginia Ave (north of I-526)			X	
Remount Road	X			
County86	X			
N Rhett Ave		X		
Montague Ave, W	X			
Montague Ave, E	X			
Spruill Ave (outside McMillan to Burton)		X		
US78		X		
Morrison Drive		X		
Virginia Ave (south of I-526)			X	
S Rhett Ave			X	
Durant Ave		X		
Mall Drive	X			
International Blvd			X	
Meeting Street		X		
Leeds Ave		X		
Azalea Ave		X		
Industrial Ave		X		
Woodlawn Ave		X		
S Johns Ave				X
O'Hear Ave				X
Buist Ave				X

Figure 7.5 Density of High to Moderate Freight Intensive Business Activities

Private Sector Utilization

When selecting routes for both local and over the road operations, motor carriers generally chose the most productive roads based on performance and meeting customer needs. Considerations of access, congestion, direct flow, and other performance measures direct company leaders and individual drivers to utilize a concise network of roadways when transiting an area. A qualitative measure of private sector selection provides a value which eases compliance and enforcement in future mobility networks. Polling individual carriers and associations in the area resulted in the utilization responses noted in **Figure 7.6**.

Negative Characteristics (Traffic Detractors)

At-Grade Railroad Crossings

For large trucks, railroad crossings can pose safety and productivity limitations, to some extent based on the commodity being transported and equipment dimensions, as well as, time and frequency of train activity at the crossing. Mitigation strategies such as grade separation or closure may provide remedies to the potential negative impacts; such strategies may also present a cost or non-reversible solution which is not acceptable. The degree to which at-grade

ROADWAY ID	UTILIZATION			
	Multiple Trips Daily (5)	Utilized Daily (4)	Weekly (3)	Monthly or Less Frequently (1)
I-26	X			
I-526	X			
US52 (north of Piggly Wiggly Drive)	X			
US52 (south of Piggly Wiggly Drive)	X			
SC642 (Dorchester Road)	X			
SC7 (Cosgrove Ave, north of Meeting Street)	X			
SC7 (Cosgrove Ave, south of Meeting Street)	X			
County48 (McMillan, north of Old Pine Circle)	X			
County48 (McMillan, south of Old Pine Circle)	X			
County32 (Spruill Ave: McMillan to Burton)	X			
Virginia Ave (north of I-526)	X			
Remount Road	X			
County86				X
N Rhett Ave	X			
Montague Ave, W	X			
Montague Ave, E	X			
Spruill Ave (outside McMillan to Burton)	X			
US78	X			
Morrison Drive	X			
Virginia Ave (south of I-526)	X			
S Rhett Ave			X	
Durant Ave			X	
Mall Drive	X			
International Blvd	X			
Meeting Street	X			
Leeds Ave	X			
Azalea Ave	X			
Industrial Ave			X	
Woodlawn Ave			X	
S Johns Ave				X
O'Hear Ave				X
Buist Ave				X

Figure 7.6 Frequency of Route Utilization by Private Sector Carriers

ROADWAY ID	NUMBER OF AT-GRADE CROSSINGS			
	ZERO (5)	ONE TO THREE (3)	FOUR TO TEN (1)	GREATER THAN 10 (0)
I-26	X			
I-526	X			
US52 (north of Piggly Wiggly Drive)		X		
US52 (south of Piggly Wiggly Drive)		X		
SC642 (Dorchester Road)		X		
SC7 (Cosgrove Ave, north of Meeting Street)		X		
SC7 (Cosgrove Ave, south of Meeting Street)	X			
County48 (McMillan, north of Old Pine Circle)		X		
County48 (McMillan, south of Old Pine Circle)	X			
County32 (Spruill Ave: McMillan to Burton)	X			
Virginia Ave (north of I-526)		X		
Remount Road			X	
County86	X			
N Rhett Ave		X		
Montague Ave, W	X			
Montague Ave, E		X		
Spruill Ave (outside McMillan to Burton)		X		
US78		X		
Morrison Drive	X			
Virginia Ave (south of I-526)		X		
S Rhett Ave		X		
Durant Ave	X			
Mall Drive	X			
International Blvd	X			
Meeting Street			X	
Leeds Ave		X		
Azalea Ave		X		
Industrial Ave	X			
Woodlawn Ave	X			
S Johns Ave	X			
O'Hear Ave	X			
Buist Ave	X			

Figure 7.7 Railroad At-Grade Crossings

rail crossings detract potential commercial users from a particular roadway is highly influenced by the number of such crossings on a roadway segment. **Figure 7.7** shows those roadways and the number of at-grade crossings present. The detraction value is reverse scoring technique with fewer crossings resulting in a higher value.

Educational, Medical, Religious Facilities

For reasons unrelated to at-grade crossings, educational, medical, and religious facilities can also pose periodic disruptions to traffic flow and potentially conflict with commercial vehicle traffic. During peak use these facilities also increase the presence of auto, bicycle and pedestrian traffic, raising potential safety hazards. Assigning values in this field are similar to at-grade crossings and illustrated in **Figure 7.8**.

ROADWAY ID	EDUCATIONAL, MEDICAL, RELIGIOUS FACILITIES (Points)			
	ZERO (5)	ONE TO THREE (3)	FOUR TO TEN (1)	GREATER THAN 10 (0)
I-26	X			
I-526	X			
US52 (north of Piggly Wiggly Drive)	X			
US52 (south of Piggly Wiggly Drive)		X		
SC642 (Dorchester Road)		X		
SC7 (Cosgrove Ave, north of Meeting Street)	X			
SC7 (Cosgrove Ave, south of Meeting Street)	X			
County48 (McMillan, north of Old Pine Circle)	X			
County48 (McMillan, south of Old Pine Circle)	X			
County32 (Spruill Ave: McMillan to Burton)		X		
Virginia Ave (north of I-526)	X			
Remount Road		X		
County86	X			
N Rhett Ave		X		
Montague Ave, W	X			
Montague Ave, E		X		
Spruill Ave (outside McMillan to Burton)		X		
US78		X		
Morrison Drive		X		
Virginia Ave (south of I-526)	X			
S Rhett Ave	X			
Durant Ave		X		
Mall Drive	X			
International Blvd	X			
Meeting Street	X			
Leeds Ave	X			
Azalea Ave		X		
Industrial Ave	X			
Woodlawn Ave	X			
S Johns Ave	X			
O'Hear Ave	X			
Buist Ave	X			

Figure 7.8 Educational, Medical, Religious Facilities

Scorecard and Outcomes

The selection of the truck route network elements results from the cumulative scoring of all characteristics. A prioritization value was also assigned to provide greater weight to specific characteristics that were deemed more important to the selection process. **Figure 7.9** lists each characteristic and the weight assigned to it as a percentage of the total calculated value.

CHARACTERISTIC	PRIORITY	PERCENT OF INFLUENCE
Functional Class	1	30%
Proximity to Freight Activity	2	20%
Multi-modal Access	3	15%
At-grade Crossing	4	10%
Proximity to Educational, Medical, Religious Facilities	5	10%
Private Sector Utilization	6	10%
Feature Class Code	7	5%

Figure 7.9 Characteristic Prioritization

Vertical bridge clearance and load restrictions were also considered, but were not found to have an impact on the initial set of roadways selected. If identified, these factors are significant obstacles for at least specific segments of a roadway. Without mitigation, clearance restrictions and load limits would likely keep a road segment from further consideration regardless of other factors.

Figure 7.10 displays the final scorecard results based on the cumulative scores or predictor values of a given roadway to meet the needs of commercial vehicles. **Figure 7.11** presents these values graphically. This view provides a spatial reference for the roadways under review. As the final network should be one of connectivity across the study area, facilitating efficient and controlled movement, identifying what areas may have multiple solutions and those with only one roadway are important factors in the process.

Freight Roadway Network Selection

Determining the roadways advanced for the final truck route network was based on the following considerations for each individual roadway assessment:

- Predictor score
- Connectivity
- Most appropriate, given multiple roadways

The scale of the study area predisposes that all routes are accessible by commercial vehicles within five minutes drive of any roadway in the area. A roadway's assignment to the truck route network and presumably performance enhancing projects related to physical design features that make these routes more "truck friendly" are intended to entice more drivers to utilize the network up to the closest point or connection to the final destination or stop. If implemented successfully, these routes should attract more commercial vehicle traffic.

ROADWAY ID	Functional Class 30%	Proximity to Freight Activity (Density) 20%	Multi-modal Access 15%	At-grade Crossing 10%	Proximity of Educational, Medical, Religious Facilities 10%	Private Sector Utilization 10%	Feature Class Code 5%	Predictor Score
US 52 (south of Piggly Wiggly Drive)	0.90	1.00	0.60	0.50	0.30	0.50	0.15	3.95
SC 7 (Cosgrove Ave, north of Meeting Street)	0.90	1.00	0.45	0.50	0.50	0.50	0.05	3.90
Remount Road	0.90	1.00	0.75	0.30	0.30	0.50	0.00	3.75
County 86	0.90	1.00	0.75	0.50	0.50	0.10	0.00	3.75
SC 642 (Dorchester Road)	0.90	1.00	0.45	0.50	0.30	0.50	0.00	3.65
US 52 (north of Piggly Wiggly Drive)	0.90	1.00	0.00	0.30	0.50	0.50	0.20	3.40
I-26	1.50	0.00	0.15	0.50	0.50	0.50	0.25	3.40
Virginia Ave (north of I-526)	0.90	0.20	0.75	0.50	0.50	0.50	0.00	3.35
Morrison Drive	0.60	0.60	0.75	0.50	0.30	0.50	0.05	3.30
I-526	1.20	0.00	0.15	0.50	0.50	0.50	0.25	3.10
County 48 (McMillan, north of Old Pine Circle)	0.90	0.20	0.45	0.50	0.50	0.50	0.05	3.10
County 32 (Spruill Ave: McMillan to Burton)	0.90	0.20	0.60	0.50	0.30	0.50	0.05	3.05
Montague Ave, W	0.60	1.00	0.00	0.30	0.50	0.50	0.05	2.95
International Blvd	0.30	0.20	0.75	0.50	0.50	0.50	0.10	2.85
Mall Drive	0.30	1.00	0.00	0.50	0.50	0.50	0.00	2.80
SC 7 (Cosgrove Ave, south of Meeting Street)	0.90	0.20	0.00	0.50	0.50	0.50	0.10	2.70
Montague Ave, E	0.60	1.00	0.00	0.30	0.30	0.50	0.00	2.70
Meeting Street	0.30	0.60	0.45	0.30	0.50	0.50	0.00	2.65
County 48 (McMillan, south of Old Pine Circle)	0.90	0.20	0.00	0.50	0.50	0.50	0.00	2.60
N Rhett Ave	0.60	0.60	0.00	0.50	0.30	0.50	0.05	2.55
Spruill Ave (outside McMillan to Burton)	0.60	0.60	0.00	0.50	0.30	0.50	0.05	2.55
US 78	0.60	0.60	0.00	0.30	0.30	0.50	0.15	2.45
Virginia Ave (south of I-526)	0.30	0.20	0.45	0.50	0.50	0.50	0.00	2.45
Leeds Ave	0.30	0.60	0.00	0.50	0.50	0.50	0.00	2.40
Industrial Ave	0.30	0.60	0.00	0.50	0.50	0.30	0.00	2.20
Woodlawn Ave	0.30	0.60	0.00	0.50	0.50	0.30	0.00	2.20
Durant Ave	0.30	0.60	0.00	0.50	0.30	0.30	0.00	2.00
Azalea Ave	0.30	0.60	0.00	0.30	0.30	0.50	0.00	2.00
S Johns Ave	0.30	0.00	0.45	0.50	0.50	0.10	0.00	1.85
O'Hear Ave	0.30	0.00	0.45	0.50	0.50	0.10	0.00	1.85
Buist Ave	0.30	0.00	0.45	0.50	0.50	0.10	0.00	1.85
S Rhett Ave	0.30	0.20	0.00	0.30	0.50	0.30	0.00	1.60

Figure 7.10 Outcome Predictor Scores, Tabular

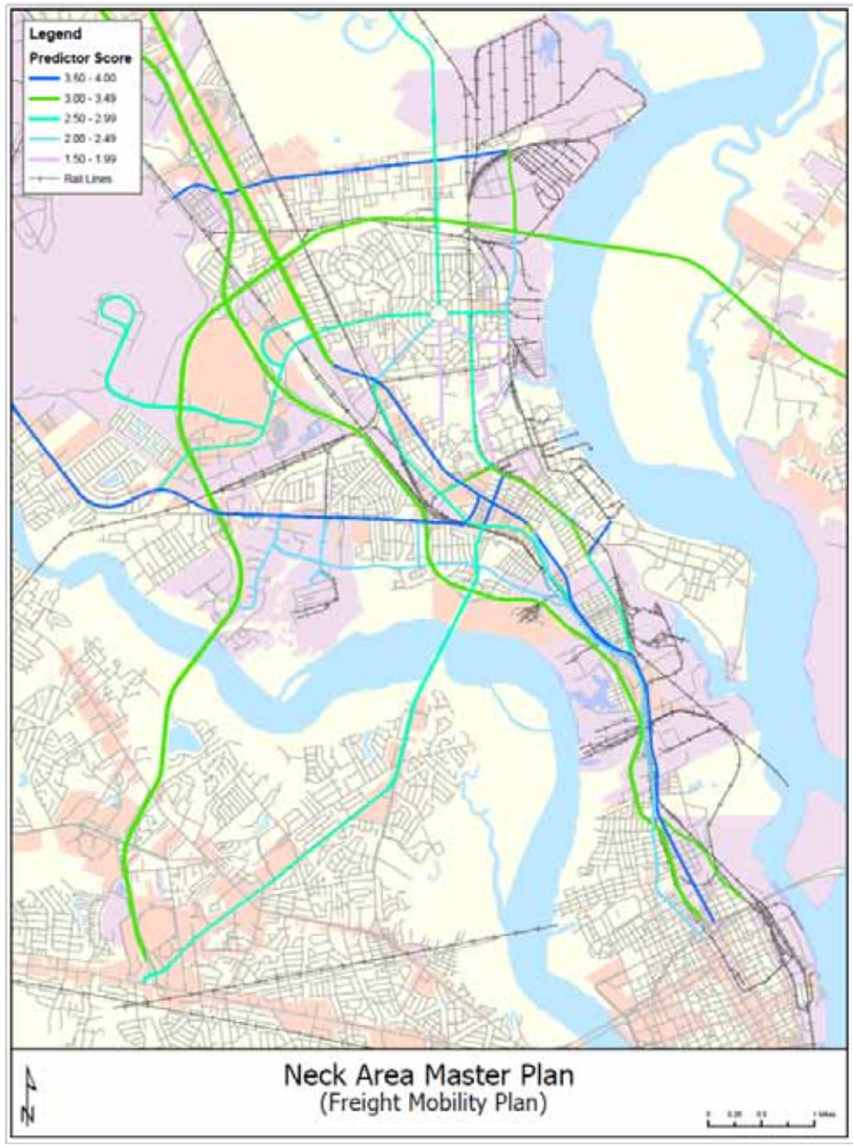


Figure 7.11 Outcome Predictor Scores, Graphically

Figure 7.12 graphically represents the potential selections. With all roadways scoring between 1.50 and 4.00, a categorization process placing the roadways into one of five scoring ranges has been implemented. This will facilitate the selection process and prioritize the inclusion of these roadways.

First Quintile

Those scoring in the top 20 percent (the first quintile scores above 3.5) of compliant roadways are:

- US 52/Rivers Avenue, at Piggly Wiggly Drive, traveling south as Carner Avenue to Meeting Street, at the intersection with Mount Pleasant Street;
- Cosgrove Avenue, from Azalea Drive to Rivers Avenue;
- Dorchester Road, from Rivers Avenue exiting the Neck area to the west;
- Remount Drive, outside the Neck area, yet included due to the influence on traffic flow attempting to bypass I-526 and I-26 junction; and
- County Road 86.

Dorchester Road from Leeds Avenue, east to Rivers Avenue currently experiences heavy automobile and pedestrian traffic, especially near educational facilities along the route. As a result, an alternative will be sought that may satisfy truck movements while providing similar access.

All roadways noted above are recommended to be included in the Neck area freight network except for the segment on Dorchester Road.

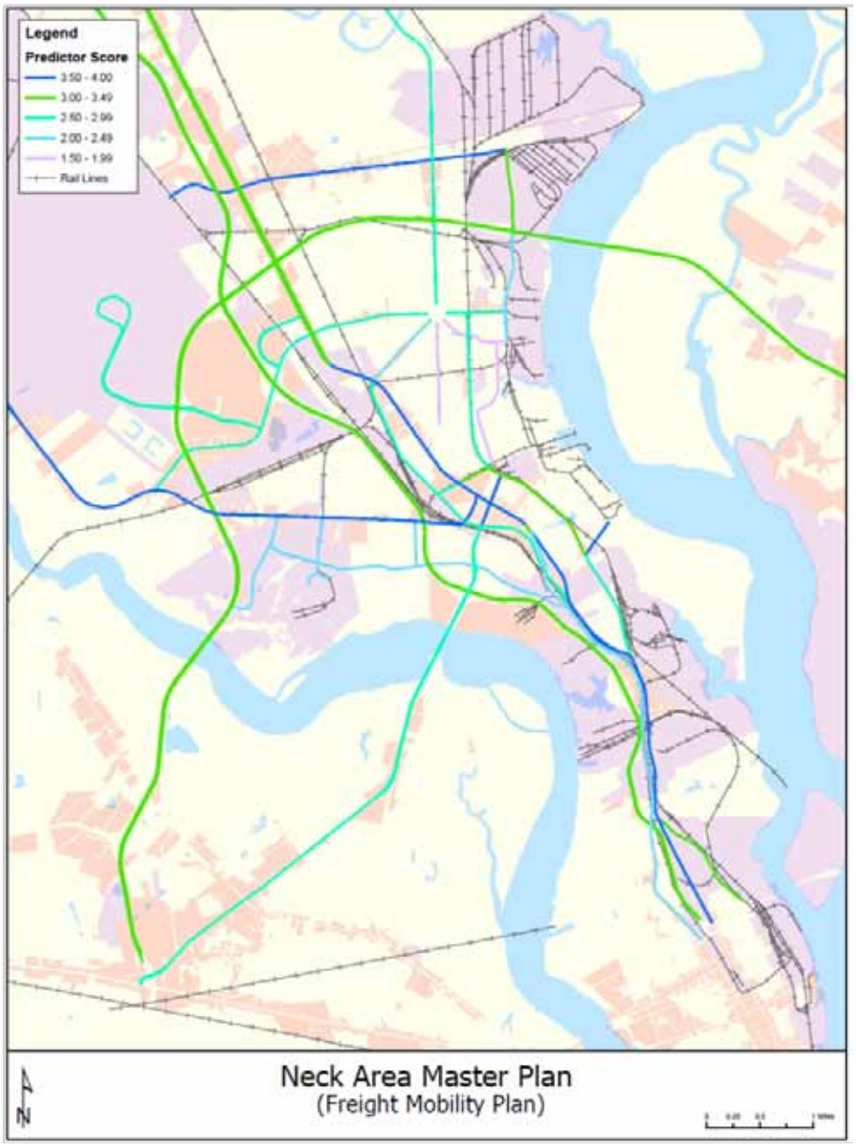


Figure 7.12 Outcome Predictor Scores, Graphical without other roadways

Second Quintile

The second quintile of scores (the next 20 percent), scoring from 3.00 to 3.49, is another set to consider for inclusion in the network. This set includes:

- I-26;
- I-526;
- Rivers Avenue, north of Piggly Wiggly Drive;
- Morrison Drive;
- Virginia Avenue, north of I-526; and
- Spruill Avenue, from McMillan Drive to County Road 86.

As with Dorchester Road previously, since this segment of Spruill Avenue has a high degree of residential land uses, an alternative roadway will be sought.

All noted roadways are recommended for inclusion in the freight network except for the segment of Spruill Avenue.

Third Quintile

The third quintile, scoring 2.50 to 2.99, contains roadways which may serve as alternative corridors to those identified in the first two quintiles. These alternatives may be in lieu of or in addition to the roadways in the top two quintiles, the latter case providing additional capacity for primary roadways which may presently or in the future be expected to be subject to highly concentrated commercial vehicle traffic. These include:

- North Rhett Avenue
  - Motor carrier facilities are located along this roadway north of I-526
  - Potential tertiary roadway within the network
- West Montague Avenue
  - Motor carriers are located at the farthest west segment
  - Provides ready access to businesses, e.g. Tanger Mall
  - Strong evidence for inclusion
- East Montague Avenue
  - Access to local businesses
  - Potential for inclusion in "final mile" network
- Spruill Avenue (north of the second quintile segment)
  - Provides potential access to East Montague Avenue
  - High residential land use

- Spruill Avenue (south of the second quintile segment)
  - Provides access to US 52
  - High residential land use
  - With Virginia Avenue and US 52 already designated for inclusion, Spruill Avenue may be designated within a "final mile" network
- International Boulevard, providing access to Charleston International Airport
- US 78/Meeting Street south as King Street Extension
  - Parallel roadway to US 52
  - Access to railroad intermodal facilities

Roadways recommended for inclusion in the freight network are:

- West Montague Avenue;
- International Boulevard; and
- US 78/Meeting Street south as King Street Extension.

Fourth and Fifth Quintiles

These quintiles identify roadways with a low degree of design characteristics applicable to the assessment methodology. Within these two categories, roadways would be evaluated to satisfy connectivity of the previously identified network components to freight traffic generation centers or activities. These also may serve as alternatives to previously identified roadways, with the expectation that design characteristics or adjacent land uses may require review and mitigation.

- Virginia Avenue, south of I-526
  - Heavy petroleum distribution activity
  - Access to future port terminal
  - Access to future Intermodal Container Transfer Facility
- Durant Avenue
  - Strong residential land use
  - Low connectivity with the exclusion of East Montague and North Rhett Avenue
- Leeds Avenue-Azalea Avenue corridor
  - Alternative for Dorchester Road segment previously identified for exclusion
  - Identified during private sector interaction as highly desirable; currently utilized
- Woodlawn Drive-Industrial Drive
  - Low connectivity
  - May provide tertiary access to Dorchester Road "final mile" solution
- South Rhett Avenue
  - Low connectivity with the exclusion of E Montague and N Rhett Avenue
  - High residential land use
- Buist, O-Hear, and St John's Avenues
  - Collector designated
  - High residential land use
  - Low connectivity

In order to provide connectivity to current and future modal facilities, e.g. the new port terminal, and satisfy alternative routings, the following roadways are recommended for inclusion in the freight network:

- Virginia Avenue, south of I-526; and
- Leeds Avenue-Azalea Avenue corridor.

Recommended Network

The final network represents a finite set of roadways providing access to, from, and within the area, while providing a minimal level of incursion. The network is illustrated in **Figure 7.13**.

Roadways within the former US Navy Yard are not included within this network. For connectivity to current facilities present on the former base, Ave B N., Noisette Blvd, and both North and South Hobson Avenues would be included.

A series of outreach activities with the private and public sectors, and with community leaders, may utilize this network as an initial foundation for further discussion.

Infrastructure Design for Freight Mobility

Historically, many urban areas in the United States have designated truck routes as a means of keeping trucks out of residential neighborhoods, and as such have largely failed to view truck routes as corridors needing special attention to best accommodate the needs of larger, heavier vehicles. However, serving the delivery and shipping needs of residents and commercial businesses, from residential to big box retail, trucks are essential to the so-called "last mile" of product supply chains. This next section discusses roadway geometrics and design features that will support truck mobility while meeting the needs of current and future communities, as well as public and private stakeholders within the Neck area.

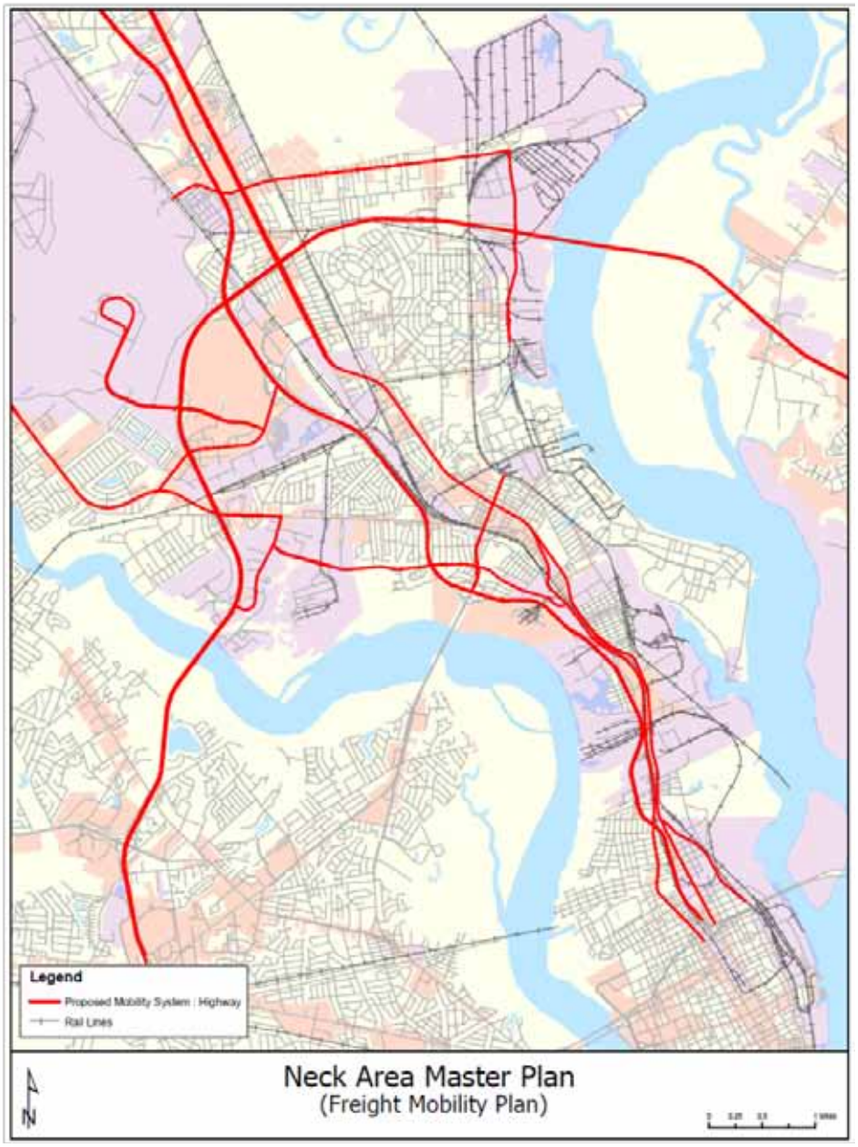


Figure 7.13 Recommended Commercial Vehicle Network

Regional street and highway networks in urban areas have four roles in providing freight mobility:

- Through Routes;
- Regional Arterial Stem Routes;
- Local connectors (to Freight Intensive Activity Centers); and
- Local Connectors (to Non-Freight Intensive Activity Centers).

The Neck area must deal with some through traffic on Interstates I-26 and I-526 to the extent that trucks accessing port facilities in Charleston and Mount Pleasant travel through the area and contribute to congestion on those interstate highways. It is the intent of this Master Plan to recommend a series of roadways that either "encourage" or "discourage" specific types of users to use specific routes within the Neck area. It has been observed that the freight movements through the Neck area have traditionally been disorganized in nature and some routes on local and neighborhood streets are sporadically posted as "truck prohibited."

While traditional freight mobility plans describe in detail "Through Routes" and "Regional Arterial Stem Routes," The Neck Area Master Plan has included "Local Connectors to Freight Intensive Activity Centers" and "Local Connectors to Non-Freight Intensive Activity Centers" to demonstrate the use of roadway design to both "encourage" the flow of trucks in appropriate areas as well as "discourage" the movement of trucks where roads should otherwise focus on other modes of transport. This approach allows for both reinforcement of efficient movement while avoiding conflict between modes, thus reducing safety concerns for all users.

Important Design Considerations for Truck Routes

Designs and specifications for local streets and roads generally focus on passenger movements, and traffic control system designs focus on the performance characteristics of passenger vehicles rather than large combination trucks or even light duty combination vehicles and large straight trucks. In most situations, the percentage of trucks in the traffic stream is small enough that an occasional inability to accommodate the performance or dimensions of a truck is not a safety or operational issue. However, trucks going off the road as they go around street corners with high pedestrian volumes can result in significant safety conflicts between the rear tires of an off-track trailer and pedestrians waiting to cross the road. Accommodating a wide turning radius at and near truck traffic generators is critical for safe operation of streets and sidewalks.

Designing roadways to accommodate trucks requires an understanding of the static and dynamic interactions of the characteristics and performance of the driver, the vehicle, the roadway, and the other motorized and non-motorized roadway users. Designs that accommodate the typical passenger car or light-duty truck cannot always accommodate the largest vehicles in the traffic stream. At locations where there will be significant truck volumes, the performance attributes and characteristics of trucks and their drivers must be taken into account for the roadways and streets to operate efficiently and safely and to obtain the expected life from the roadway or street assets. This is especially true for designated truck routes.

Several previous efforts to examine roadway design for accommodating large trucks have broken geometric and design issues into: (1) point features; and, (2) continuous features:

- **Point features** are located at specific locations on a route, and include bridge condition, railroad crossings, turning radii, and vertical clearance.
- **Continuous features** occur along the length of the route, and include lane width and roadway weight capacity.

TRUCK ROUTE POINT FEATURES

Intersection Design

A large truck making a right turn through an inadequate intersection can cause property damage, injury, and/or create traffic conflicts with other motorists. When the rear wheels of a large truck track outside the lane edge or shoulder of an intersection, the truck may strike objects or persons on the street edge (fire hydrants, signs, or pedestrians) near the intersection. Alternatively, to avoid tracking across curbs in an intersection with insufficient turning radii, trucks often must encroach on opposing traffic lanes. The minimum turning radius for truck is defined as the path of the outer front wheel, following a circular arc at a very low speed, and is limited by the vehicle's steering mechanism.

The layout of urban intersections on heavily used truck routes affects freight mobility through delayed right turns due to oncoming traffic. For instance, during the Master Plan charrette exercise, representatives from Neck area trucking companies noted: "Two crossings on Hackerman and Disher are "awful" and dangerous. Trucks often have to wait at intersections while hanging out over the railroad tracks." Inadequate turning radii can result in lane encroachment or "curb hopping" to navigate intersections, resulting in premature curb deterioration. Impediments, such as telephone poles or signs immediately next to the curb can also affect maneuverability due to the off-tracking characteristics of large trucks. Landscaping, when combined with either oncoming traffic or center medians, can place a tremendous burden on truck drivers in terms of sight distance and maneuverability. Such effects can directly impact intersection safety for freight and passenger traffic alike.

An FHWA research effort from 1990 the Truck Characteristics Study[1], found that the turning or swept path width for trucks with a wheelbase of 62 feet (WB-62) or larger are so great that the truck cannot make a 90-degree right turn from one two-lane road to another while remaining within a 12-foot lane for turning radii of 75 feet or less. Trucks making such turns at locations with curb return radii less than 75 feet must either encroach on the roadway shoulder (or curbline) or into an opposing lane of traffic. On a turn between multilane roads, trucks with sizes up to the WB-77 can make a 90-degree right turn while encroaching on an adjacent same-direction lane, but without encroaching on an opposing lane. **Figure 7.14** provides selected examples of off-tracking for several intersection turn radii.

A more recent evaluation in 2003 by the National Cooperative Freight Research Program (NCFRP) of roadway design for trucks suggested revisions to the

		Maximum off-tracking (ft) for specified turn radius				Maximum swept path width (ft) for specified turn radius			
Design vehicle	Symbol	50 ft	75 ft	100 ft	150 ft	50 ft	75 ft	100 ft	150 ft
Single-unit truck	SU	3.8	2.7	1.8	1.1	11.8	10.7	9.8	9.1
Single-unit truck (three-axle)	SU25	6.1	4.3	3.2	2.1	14.1	12.3	11.2	10.1
Interstate semitrailer	WB-62	17.0	13.1	10.3	7.0	25.3	21.3	18.6	15.3
Interstate semitrailer	WB-67	17.0	13.1	10.3	7.0	25.3	21.3	18.6	15.3
Long interstate semitrailer	WB-71	17.0	13.1	10.3	7.0	25.3	21.3	18.6	15.3
"Double-bottom"-semitrailer/trailer	WB-67D	11.5	8.3	6.3	4.2	19.7	16.6	14.6	12.5

Note: For combination trucks with a wheelbase (WB) of 62, 67 and 71 feet the distance between the kingpin and center of the rear tandem axle is assumed to be 41 feet.

Figure 7.14 Maximum Low-Speed Off-tracking and Swept Path Width (Selected design vehicles in 90-degree turns)

American Association of State Highway and Transportation Officials (AASHTO) design manual. A summary of the recommended changes to the AASHTO Green Book for single unit and tractor-semitrailer truck combinations included:[2]

Single-Unit Trucks:

- The current two-axle SU design vehicle should be retained and designated the SU-30 design vehicle.
- A longer three-axle SU design vehicle should be added and designated the SU-25 design vehicle.

Single-Trailer Combinations (Five-Axle Tractor-Semitrailers):

- The WB-40 should be retained for application to container trucks and local pickup and delivery operations.
- The WB-50 is no longer common and should be dropped.
- The WB-62 design vehicle represents a truck configuration specified in Federal law and should be retained. The kingpin to center of the rear tandem (KCRT) distance for this design vehicle should be increased from 40.5 ft to 41 ft to correspond to the maximum limits applicable in 19 states. The WB-62 design vehicle should be used for design of offtracking and swept path width for all longer tractor-semitrailer combinations that are configured with a 41-ft maximum kingpin-to-center-of-rear axle-set distance.

1 Harwood, D. W., J. M. Mason, W. D. Glauz, B. T. Kulakowski, and K. Fitzpatrick, Truck Characteristics for Use in Highway Design and Operation, Volume I, Research Report, Report No. FHWA-RD-89-226, Federal Highway Administration, August 1990.

2 Review of Truck Characteristics as Factors in Roadway Design, NCHRP Report # 505, Transportation Research Board (TRB), 2003. Available online at: http://www.onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_505.pdf

- The WB-65 design vehicle represents an "in between" axle placement that is neither a best nor a worst case for design. This design vehicle should be dropped.
- The WB-67 design vehicle should be retained, but the KCRT distance should be increased from 43.5 to 45.5 ft to represent a "worst case" condition.

In South Carolina commercial vehicle operators can use semitrailers up to 53 feet in length, provided the KCRT setting does not exceed 41 feet (SCCL § 56-5-4070). Thus, South Carolina law corresponds to the WB-62 vehicle with a 41 foot KCRT. It should be noted however that over dimension cargoes moving in and out of Neck area ports may warrant at least some routes being designed to accommodate the larger WB-67 vehicle.

If North Charleston designates a priority truck route network, a simple intersection metric can be applied to begin programming those intersections most in need of redesign or expansion. Initial criteria can be based upon whether or not the selected intersection was able to accommodate tractor semi-trailer combinations with a 67-foot wheelbase or longer. For example:

- **Preferred:** Intersections designed to accommodate tractor semi-trailer combinations with a 67-foot wheelbase or longer.
- **Less than Adequate:** Intersections that are not designed to accommodate tractor semi-trailer combinations with a 67-foot wheelbase.

A low cost procedure for determining intersection turning radii can be based on high-resolution aerial photography and AutoTURN Software to develop a WB-67 design vehicle turning movement template. The WB-67 design vehicle turning template can then be manually laid-over aerial photographs of intersections along the proposed truck route network.

During discussions with trucking officials, several intersections in the Neck area were noted as needing improvement:

- Hackerman Ave and Disher Street intersections with King Street
- The intersection of Azalea Ave and King Street, improve turning radii for southbound King Street onto Azalea Ave
- Virginia Ave and Ave B N redirect priority direction to align Virginia with Ave B
- Ave B N and Noisette Blvd, redirect priority direction to align Ave B N with Noisette
- The intersection of Leeds Ave and Azalea Ave, adjust signal timing to accommodate more efficient truck movements

Signalization

The spacing and timing patterns of traffic signals are typically based on accommodating light-vehicle mobility and in most cases fails to account for the time it takes heavy truck traffic to attain a reasonable speed or to stop. Abrupt starting and stopping by heavy trucks wastes fuel, increases transport costs, and diminishes air quality in the Neck Region. Research has also show that the dynamic forces from heavy trucks repeatedly stopping at intersections results in premature pavement deterioration at the intersection approach. With just-in-time delivery practices, truckers must maintain tight delivery schedules. The less delivery schedules are impeded by inadequate signalization or intersection maneuverability, the greater the ability for truck drivers to make multiple deliveries during a trip.

Bridge Condition

This point feature represents the physical and structural condition of a bridge to determine whether commercial vehicle traffic may be safety accommodated. The sufficiency rating formula evaluates highway bridge data by calculating four separate factors to obtain a metric indicative of the overall bridge condition. The resulting score from 1 to 100 suggests that a score of 100 represents an entirely sufficient bridge and zero represents an entirely deficient bridge.

One approach to assessing this feature for bridges located on truck routes is to monitor the bridge condition rating. Under the Federal Highway Bridge Replacement and Rehabilitation Program, a bridge with a sufficiency rating less than 80 qualifies a bridge for rehabilitation. A sufficiency rating lower than 50 qualifies a bridge for replacement. The adequacy ranking is also influenced by the presence or absence of a bridge posting for load carrying capacity. The National Bridge Inspections Standards require the posting of load limits only if the maximum legal load configurations in the State exceed the load permitted under the operating rating. A "less than adequate" bridge has a lower operating rating than the legal maximum gross vehicle weight (GVW) of operating trucks. Under these circumstances (legal truck GVW exceeds bridge operating rating) the bridge would be posted. At publication, the only bridge in the study area restricted to truck traffic is the US 78 bridge near the Military Magnet School, and this bridge is part of the active Bridge Replacement Program through SCDOT. The bridge, along with the Cosgrove Avenue overpass, is scheduled for replacement in late 2012, early 2013.

Bridges in the Neck area and corresponding data from the National Bridge Inventory is included in **Figure 7.15**.

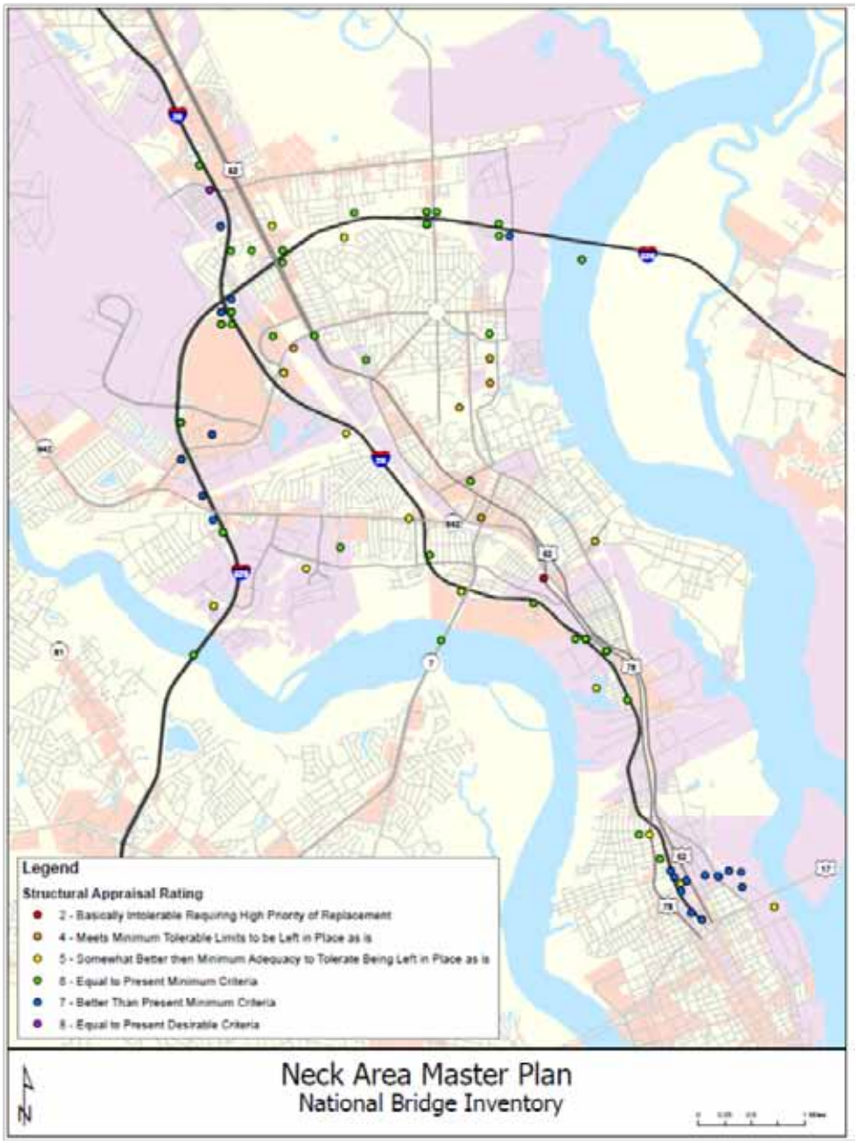


Figure 7.15 Neck Area Bridge Inventory

Vertical Clearance

This point feature is defined as the vertical clearance height of bridges and over head signs or gantries along a route, to determine the routes ability to accommodate truck traffic. There is no federal regulation for vehicle height regarding commercial trucks, and so states may set their own height restrictions. South Carolina law establishes a maximum height limit for commercial vehicles in normal operations of 13 feet, 6 inches; however, automobile transporters are allowed 14 feet under special permit (SCCL § 56-5-4060). Once again, the likelihood of over-dimension cargoes moving to and from the port may warrant at least some routes accommodating permitted loads in excess of 13 feet 6 inches. The AASHTO Green Book recommends a vertical clearance of 14 feet on local roads and collectors, and 16 feet on arterials and freeways.

Railway Crossings

On steep approaches, trucks require longer distances to accelerate and cross railroad tracks following a complete stop. The increased time needed by some trucks to clear certain at-grade rail crossing, may also require longer sight distances at unsignalized crossings to ensure that trucks clear safely. At-grade rail crossings with steep approach grades or "humped crossings" can also cause trucks with a long wheelbase to "bottom out" and become stuck on the tracks.

One method of assessing the sufficiency of at-grade railroad crossing design is to examine a crossing's accident prediction rate (as defined by the USDOT Accident Prediction Formula). Rating factors from the Accident Prediction Formula are predicated on the following five factors:

- The at-grade crossing intersection should be close to 90 degrees,
- The crossing should have sufficient sight distance (if there is insufficient sight distance, warning gates and/or signals should be present),
- Crossings should have smooth pavement/surface quality,
- Crossing should have nearly level approach grades, and
- Have an accident prediction rate of less than .05 (less than one accident every 20 years).

TRUCK ROUTE CONTINUOUS FEATURES

Lane Width

Lane width can have significant implications for the safe operation of commercial vehicles, especially in areas with high pedestrian or bicycle traffic. Trucks are significantly wider than passenger cars, and as a result the problems resulting from inadequate lane widths are greater for trucks. The AASHTO Green Book encourages wide lanes when designing roads to accommodate trucks. The preferred lane width for roads carrying high truck volumes is 12 feet or more, with adequate shoulders to accommodate trucks that may need to pull over to the side of road in an emergency situation.

Lane width was another issue mentioned by trucking representatives during stakeholder outreach meetings. Some udeas that came out of the meeting included:

- 0.7 to 1.9 miles north of Azalea Avenue and King Street: improve and or widen existing two lane configuration to correspond to adjoining roadway at either end.

- Avenue B between Virginia Avenue and Noisette Boulevard: improve or widen existing roadway
- Noisette Boulevard between Avenue B N to 5th Street: improve or widen existing roadway
- Hobson Ave/S. Hobson Avenue, from Noisette to Register street: improve or widen existing roadway

A parallel feature to wide shoulders for accommodating trucks pulling to the side of the road is the need for occasional staging areas where truck drivers can stop and wait for scheduled appointment times, use cell phones, or check their load upon departing from a terminal.

Categorization of Route Types in the Neck Area

In order to best describe the route types needed to shape a freight mobility network for the Neck area, the following categories of route types have been compiled: Through Routes, Regional Arterial Stems, Local Connectors to Freight Intensive Activity Centers, and Local Connectors to Non-Freight Intensive Activity Centers. This categorization and characterization is preliminary in nature for the purposes of the Master Plan and will require additional engineering level analysis and recommendations as projects move towards programming phases.

Through Routes

The goal of Through Routes is moving freight and autos longer distances between local and regional locations. Also, Through Routes are intended to provide efficient connections to the Interstate System. Drawing from the guidelines above, Through Routes should strive to provide the following characteristics:

- 13 foot lanes
- Turning radii to accommodate large commercial vehicles
- Minimal signals; traffic operations to support truck movements
- Wide shoulders and/or pull outs for commercial vehicles
- Pavement types (resurfacing) that support higher tonnage, to reduce long term maintenance costs
- Appropriate signage for trucks
- Minimal tree and other vision obstructions
- Setbacks for utility poles and other objects in right of way, particularly at or near intersections
- Limited access and access management strategies
- Reduce grades
- Minimal super-elevated curves
- Urban to Suburban speeds (35–55 miles per hour)

Regional Arterial Stems

Within the Neck area context, Regional Arterial Stems have the goal of moving all users quickly across a roadway and making regional connections to activity centers and/or the Interstate System. These roadways are more urban in nature and have more access management concerns than Through Routes. It is expected that these routes would be the location for warehouses and other businesses more industrial in nature which require truck access. Characteristics of Regional Arterial Stems should include:

- 12 Foot Lanes
- Turning Radii to accommodate large commercial vehicles
- Traffic operations, ITS to support safe truck movements
- Apply pavement types (resurfacing) that supports tonnage to reduce long term maintenance costs
- Appropriate signage for trucks (particularly "out of town" trucks looking for destinations or more "Through Routes")
- Minimal street trees and other vision obstructions
- Setbacks for utility poles and other objects in the right of way, particularly near intersections
- Reduce grades
- Minimal super-elevated curves
- Clearly marked facilities for bicycles and pedestrian users
- Separated, clearly marked facilities for transit stops

Local Connectors to Freight Intensive Activity Centers

Local Connectors to Freight Intensive Activity Centers should be designed to balance the needs of all roadway users - autos, freight, transit, bicycles, and pedestrians - in a slower, multimodal roadway environment. These typically carry regional and local transit service, resulting in higher use of bicycle and pedestrian to access businesses, residences, and transit stops in the corridor. These routes will not be designed to prohibit freight movements, but rather to make local deliveries safe and efficient while minimizing conflicts with other users in the urban environment. Freight users will be accommodated by design, but land uses should not encourage freight intensive businesses to locate directly on a corridor of this type.

Desirable characteristics to balance this range of users safely and efficiently include:

- 10 to 12 foot lanes
- Turning radii to accommodate large commercial vehicles

- Traffic operations and ITS to support safe truck movements
- Appropriate signage for trucks (particularly "out of town" trucks looking for destinations or more Through Routes)
- Minimal street trees and other vision obstructions
- Setbacks for utility poles and other objects in the right of way, particularly near intersections
- Reduce grades
- Minimal super-elevated curves
- Clearly marked, potentially separated facilities for bicycle and pedestrian users
- Separately, clearly marked facilities for transit stops
- ITS facilities for autos, bicycle, and pedestrian users
- Urban speeds (25-35 miles per hour)

Local Connectors to Non-Freight Intensive Activity Centers

It is the intent of designing facilities such as Local Connectors to Non-Freight Intensive Activity Centers to make local and regional connections for users other than freight. These are envisioned to be the preferred routes of commuters and other travelers looking to avoid conflict with freight vehicles. These corridors are designed to encourage use by non-freight users: autos, transit, bicycles, and pedestrians in an even slower, more multimodal roadway environment than the freight intensive local connectors. These typically carry local transit service, resulting in higher use of bicycle and pedestrian users. Freight users will not be encouraged but accommodated, as these routes will serve some warehousing and retail locations, as necessary, but land uses will not be freight intensive. The implementation of this strategy will depend on infrastructure design and operations as well as land use regulation.

Desired characteristics of a Local Connector to Non-Freight Intensive Activity Centers include:

- 9 -10 foot lanes
- Tighter turning radii to discourage large commercial vehicles
- Traffic operations to support auto, bicycle, transit and pedestrian movements
- Appropriate signage, including truck prohibitions as needed
- Street trees and overhead lighting
- Sidewalks and other treatments for bicycle and pedestrian users
- On-street parking where appropriate
- Clearly marked facilities for bicycle and pedestrian users
- Integrated, clearly marked facilities for transit stops (pull outs where necessary)
- On street or buffered bicycle lanes
- ITS facilities for transit, auto, bicycle, pedestrian users
- Urban speeds (25-35 miles per hour)

Strategies beyond Infrastructure Design to Improve Freight Mobility

The traffic design issues reviewed in the previous section are sometimes referred to as "supply side" answers for creating a more reliable freight network. However, there are also "demand side" actions can promote freight mobility. Demand side actions that are typically policy or regulatory actions that are intended to limit or influence undesirable actions or consequences associated with commercial vehicles. However, it is important to note that unless well thought-out, some demand side actions can actually impede freight mobility (an example might be land use policy that prohibits truck terminals from being located in urban areas near freight activity centers that trucks must continue to access on a daily basis).

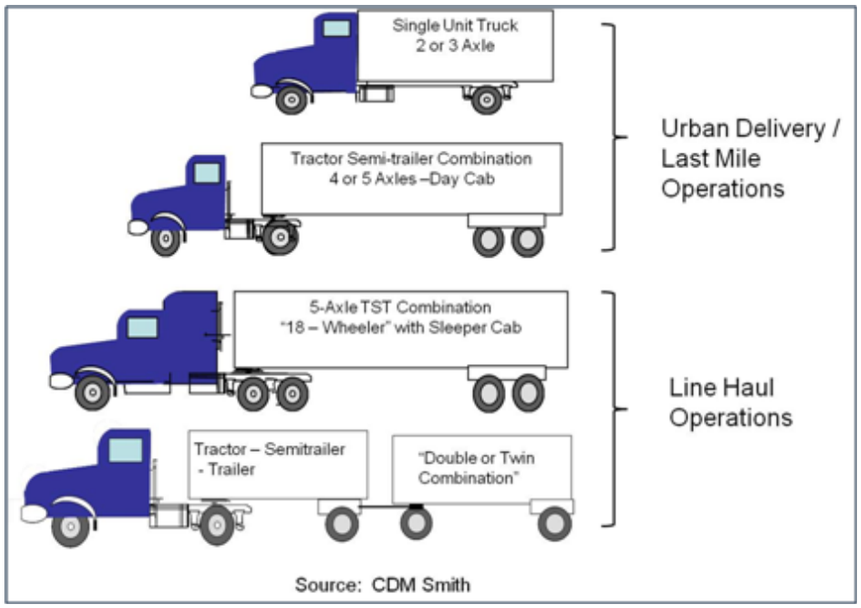
The following policy discussion is premised on the idea that in developing a defined truck route network and understanding the specific roles played by key routes such as "connectors" and "last mile routes" highway design improvement strategies such as those already discussed are likely to be more successful. There are several common commercial vehicle regulatory policy issues that often go hand-in-hand with defined truck routes:

- Route restrictions;
- Commercial vehicle parking regulation / curbside access;
- Size and weight regulation; and
- Idling regulations/emission controls.

Some cities may also enforce safety regulations; however, for the most part commercial vehicle safety compliance is typically handled by state and federal jurisdictions through the Federal Motor Carrier Safety Assistance Program (MCSAP).

Prior to discussing various forms of commercial vehicle regulations, it is important to note that commercial vehicles are defined differently across jurisdictions. A consistent definition for a commercial vehicle is a necessary prerequisite to a regulatory framework for defining truck routes and enforcing truck regulations. Trucks are be defined in a number of different ways, depending on the regulating entity. Generally, in an urban context trucks are defined in one or more of the following ways:

- **Vehicle Purpose:** Trucks can be defined as commercial vehicles that haul goods. This type of definition is generally used in the context of defining other commercial vehicles, including commercial passenger vehicles such as buses and taxis, or in combination with dimension or axle attributes.



- Vehicle Dimensions: Federal and state laws typically regulate commercial vehicles according to length, width, and height. However, some urban areas that may have more restrictive roadway geometry or low clearance issues may also impose dimensional restrictions on some routes.
- Number of Axles/Tires: Many urban areas define trucks as commercial vehicles designed to carry property with more than two axles, or more than four tires.
- Vehicle Weight and Capacity: Trucks conforming to federal regulations are typically registered with a maximum gross vehicle weight that includes the weight of the truck plus the weight of the cargo. Many definitions identify trucks as any cargo-carrying commercial vehicle rated at a particular gross weight or higher.

Marketing Truck Routes and Selling Compliance

Three overarching strategies are presented to market the improved truck routes and sell compliance to drivers in the Neck area, local communities, and local and regional authorities. These strategies include:

- Positive route guidance;
- Enhanced route enforcement; and
- Freight quality partnerships – a grass roots approach to win-win solutions.

Positive Route Guidance

Improve Signs –Larger, Directional, Improved Lettering

The use of larger signs and larger lettering could be implemented for truck-oriented signage if a high priority truck route is adopted in the Neck area. The signs would specifically include regulatory and other information for truck drivers using bigger and brighter signs, larger lettering, and a higher print contrast. This will help to improve safety and compliance and increase the effectiveness of the signs.

Improve Advanced Signage on Arterials for Freeway Entrances

Signage guiding drivers to the correct lane for a freeway entrance could be placed upstream from freeway interchanges, allowing truck drivers enough time to move to the correct lane in advance of the interchange. Where it is practical, guide signs should be placed upstream for the ramp anywhere from one-quarter of a mile to one mile, depending on the local conditions. This would allow truck drivers and other travelers to travel fewer miles, as well as enable drivers to select the correct lanes to travel on the freeway. Lane assignment in advance of the interchange reduces the risk of crashes.

Provide Advance Route Information

The ability to provide advance route information, including weather, road conditions, and work zone activity can help drivers to navigate truck routes in the Neck area more efficiently. Intelligent Transportation Systems (ITS) that use telecommunications and other technology to convey information and

In 2008, NYCDOT petitioned the FHWA to conduct a truck route signage pilot program that would allow the city to experiment with new truck route sign designs to make signs more identifiable to truck drivers. The first generation of experimental truck route signs incorporated a green circle, the universally accepted symbol for positive guidance, into the existing conventional sign. A prohibitive route sign incorporated the red circle and diagonal line. The pilot signage program was implemented in the Hunts Point area of the Bronx in 2010, and NYCDOT is now monitoring truck route compliance in the project area and a control area adjacent to it.

data to the drivers and operators to make better informed trip decisions could be implemented. Virtual maps that can be accessed by smart phones would indicate the location of roadway hazards for trucks resulting in fewer issues routing trucks through locations where they are too large to navigate. A CB alert system could also be used for roadway hazards such as work zone activities. Benefits include less wear and tear on the infrastructure and reduced delays for the truckers.

Develop a Trucker's Guide

A trucker's guide document with maps, truck routes, and truck parking information would provide useful information to the truckers especially if a new route system is designated. This would help truckers and dispatchers to navigate the area more efficiently resulting in reduced truck miles and less time spent on the routes. The guide could be a virtual document accessed via the web. It might also be possible to work with GPS application providers to the trucking industry to highlight key truck routes and also incorporate features such as low clearance bridges, hazardous ramp locations and other special features.

Enhance Truck Route Enforcement

Enforce Compliance with Truck Routes and Restrict Non-truck Routes

If a truck route system is designated in the Neck Area of North Charleston, City Officials should make the time and effort to ensure that enforcement staff is fully knowledgeable of the routes and the rules governing their use, and the rules that would allow trucks off primary routes.

Congestion, noise, pollution and safety are major concerns for citizens in the Neck area as expressed during public outreach activities conducted for the Master Plan. Mobility on poorly designed streets can be especially challenging for tractor-semitrailer combinations with "sleeper cabs" or long trailers typically used in line-haul operations or for over-dimension cargoes such as pipe or wind turbine components. It is prudent for city planners to restrict certain vehicle types or cargos from residential areas or in areas challenged by older infrastructure with low clearances and short turning radii.

Planners and local decision makers recognize the conflicts between these competing and somewhat incompatible uses. They may impose truck routing restrictions in these areas as well as limitations on delivery times and idling. These are reasonable restrictions provided that viable routes exist to carry commercial traffic. However, if restrictions on non-commercial truck routes are imposed they must also be enforced, either through active patrols or by providing residents a web portal or phone number to lodge complaints when trucks needlessly use non-designated routes.

Commercial Parking Regulations / Curb Side Access

Central business districts and urban corridors with high commercial activity often experience significant parking challenges, especially for trucks. This includes on-street parking (curbside) as well as off-street parking (on commercial properties). The inability to find parking near the delivery point slows down delivery for multiple-stop routes, the penalty being higher cost and diminished service (delivery services only serve areas that are viable from an economic standpoint). The decline in service ultimately impacts downtown business vitality. Poorly managed curbside access also raises the cost of goods to consumers; in many large urban areas delivery fleets pay millions of dollars each year in parking fines – a cost of doing business.

Most curbside parking, even for commercial purposes, is designed for smaller vehicles such as pickup trucks, vans, and single unit trucks. Curbside Management can be enhanced using a variety of methods, including strict enforcement of designated commercial parking zones for use by commercial vehicles only, providing larger curbside parking spaces, increasing the frequency of commercial curbside spaces, designating commercial curb parking during peak periods, and peak hour pricing mechanisms to regulate parking behavior.

Parking on commercial properties that attract significant truck traffic can also be a concern in many urban areas. Retail strip malls, shopping malls, hotels and recreational areas, convention centers, and office parks often do not plan for truck parking needs. Building codes for urban commercial properties should include specifications for truck parking and loading/unloading.

Freight Quality Partnerships – A Grass Roots Approach to Win-Win Solutions

Freight Quality Partnerships (FQPs) are an emerging concept whereby all stakeholders, including local government, business, freight operators, and local communities agree upon freight transport solutions in response to the needs of any particular region or area. FQPs aim to provide safe, efficient, and environmentally-friendly solutions to freight transport issues by implementing positive and tangible actions at a regional or location level. Establishing an effective FQP in the Neck area can result in the following:

- Help regional and local authorities to better understand the needs of the freight transport industry and its customers to have timely and efficient delivery of freight, and the views of other legitimate stakeholders;
- Provide a single point of contact for early consultation, yet represent a large number of organizations;
- Agree upon realistic and achievable actions that provide clear economic, social, and environmental benefits; and
- Provide an effective working forum in which to agree and deliver solutions.

The FQP can also assist in land use planning by helping to establish freight provisions to include in local development plans in the Neck Area, as well as other actions that would generally fall within the area of transport or traffic management.

Corridor Level Design Improvements: Designing "Complete Corridors"

Similar to "complete streets," "complete corridors" are for everyone. The concept of "complete streets" has often included consideration, principally, of autos, pedestrians, transit users and bicyclists in an urban area. This Master Plan suggests the following expansion of the principles of "complete streets" to the larger urban-suburban corridor level, developing a concept of the "complete corridor." The thinking behind this concept is to include freight mobility and goods movement into the next phase of completing urban-suburban corridors. Corridors, in this context, are not limited to a single roadway or street level project. For this planning exercise, corridors are considered general routes, or group of routes, connecting origins and destinations within a community or region.

By examining the Neck Area Master Plan freight network, as established earlier in this chapter, one quickly observes the range of land uses in those subareas as well as parallel routes that could support the movement of both people and goods. The challenge within the Neck area has been to organize and identify optimal routes for both people and goods. In some cases that movement can be safely achieved on a common roadway. In other cases, those movements can be separated for safer, more efficient mobility for all users.

This section details recommended roadway improvements on the corridor level for the following corridors included in the freight network:

- Dorchester Road Corridor (which includes Azalea Drive and Leeds Avenue);
- Cosgrove Avenue Corridor;
- Virginia Avenue Corridor;
- US 52/US 78/Rivers Avenue Corridor (which includes Spruill Avenue, McMillan Avenue and King Street Extension); and
- Montague Avenue Corridor.

It is important to note that these specific roadways included in the freight corridor discussion are not necessarily designated as "freight routes." Rather, these roadways are considered part of the corridors where freight movements occur and improvements are recommended to make them "complete corridors" for all users, including autos, transit, pedestrians, bicycles, and freight vehicles.

This collection of recommendations for infrastructure improvements includes both point features (bridge crossings, rail crossings, intersections, vertical clearances) and continuous features (lane widths, roadway capacities, speeds, pavement condition).

Roadways included in these corridor improvement recommendations are generally categorized using the four route types described earlier in this chapter. Route types included in the improvement tables in this section are presented in more detail by purpose and design characteristics in **Figure 7.16**. **Figure 7.17** depicts the recommneded road improvements through the study area.

Through Routes
Goal: Move freight and autos longer distances between local and regional locations. Provide efficient connections to the Interstate system.
13 foot lanes
Turning radii to accommodate large commercial vehicles
Minimal signals; traffic operations to support truck movements
Wide shoulders and/or pull outs for commercial vehicles
Appropriate signage for trucks
Minimal tree and other vision obstructions
Set backs for utility poles and other objects in right of way
Reduce grades
Minimal super-elevated curves
Urban to Suburban speeds (35 - 55) MPH
Recommended roadways: Azalea Drive, Cosgrove Avenue, Virginia Avenue, West Montague Avenue

Regional Arterial System
Goal: Move all users quickly across a roadway, making regional connections to activity centers and/or the Interstate System. These roadways are more urban in nature and have more access management concerns than "Through Routes."
12 foot lanes
Turning
Turning radii to accommodate large commercial vehicle
Traffic operations to support truck movement
Appropriate signage for trucks
Minimal tree and other vision obstructions
Set backs for utility poles and other objects in right of way
Reduce grades
Minimal super-elevated curves
Clearly marked facilities for bicycle and pedestrian users
Separated, clearly marked facilities for transit stops
Urban speeds (35 - 45 MPH)
Recommended roadways: Leeds Avenue, Noisette Avenue/Avenue B, West Montague

Local Connector to Freight Intensive Activity Center
Goal: Balance the needs of all roadway users: autos, freight, transit, bicycle and pedestrian in a slower, more urban roadway environment. These typically carry regional and local transit service, resulting in higher use of bicycle and pedestrian users. Freight users will not be encouraged but accomoda ted, as these routes will serve some warehousing and retail locations.
10 - 12 foot lanes
Turning radii to accommodate large commercial vehicles
Traffic operations to support truck movements
Appropriate signage for trucks
Minimal tree and other vision obstructions
Set backs for utility poles and other objects in right of way
Reduce grades
Minimal super-elevated curves
Clearly marked facilities for bicycle and pedestrian users
Separated, clearly marked facilities for transit stops
ITS facilities for transit, auto, bicycle, pedestrian users
Urban speeds (25 - 35 MPH)
Recommended roadways: Dorchester Road, Misroon Street, Hobson Avenue, Rivers Avenue

Local Connector, Not Frieght Intensive
Goal: Encourage the use by non-freight users: auto, transit, bicycle and pedestrian in an even slower, more urban roadway environment. These typically carry local transit service, resulting in higher use of bicycle and pedestrian users. Freight users will not be encouraged but accomoda ted, as these routes will serve some warehousing and retail locations.
9 - 10 foot lanes
Tighter turning radii to discourage large commercial vehicles
Traffic operations to support auto, bicycle, transit, and pedestrian movements
Appropriate signage for trucks (where prohibited or towards appropriate routes)
Higher occurance of street trees and lighting
Sidewalks and other treatments for bicycle/pedestrian and transit users
On-street parking where appropriate
Clearly marked facilities for bicycle and pedestrian users
Separated, clearly marked facilities for transit stops
On street bicycle lanes, where appropriate
ITS facilities for transit, auto, bicycle, pedestrian users
Urban speeds (25 - 35 MPH)
Recommended roadways: Spruill Avenue, US 78/King Street Extension, East Montague

Figure 7.16 Freight Route Characteristics

Figure 7.17 Recommended Road Improvements (See Appendix A pg. 254)

Dorchester Road Corridor

Dorchester Road is an urban minor arterial and ranges from two to six lanes. It is currently posted at 45 MPH from I-526 to Leeds Avenue and then posted at 35 MPH between Leeds Avenue to Rivers Avenue. Average daily traffic along Dorchester Road ranges from 7,500 to 28,810 vehicles. In 2010, the roadways carried a range of 4 percent to 16 percent trucks. The types of trucks observed in this corridor include light trucks, buses, and heavy trucks.

In addition to vehicular traffic, this is also a heavily used transit route. CARTA bus routes currently serving the Dorchester Road Corridor are 11, 12, and 103. Coupled with the transit service, pedestrians and bicycles traverse this corridor on a regular basis throughout the day.

Since freight movement in the Dorchester Road Corridor includes travel on other important roadways that connect with Dorchester Road, this corridor also includes Azalea Drive and Leeds Avenue. This network of roadways connects the lower Neck area (via Meeting Street Road and King Street Extension) to both I-26 and I-526.

Azalea Drive is an urban collector street with five lanes. Azalea is currently posted as 45 MPH from Leeds Avenue to Cosgrove and is currently posted at 35 MPH from Cosgrove Avenue to King Street. Average daily traffic along Azalea Drive ranges from 8,400 to 12,650 vehicles. In 2010, the roadway carried a range of 6 percent to 21 percent trucks.

Leeds Avenue is an urban collector street with a five lane cross section. Leeds Avenue is currently posted at 40 MPH. Average daily traffic along Leeds Avenue ranges from 7,800 to 16,800 vehicles. In 2010, the types of trucks observed in this corridor included light trucks, buses, and heavy trucks and ranged from 11 percent to 81percent trucks out of the total traffic counts.

To make the Dorchester Road a more "complete corridor" the following are recommended:

- Azalea Drive is designed to function as a Through Route. This route would be designed and signed to encourage truck traffic more regional in nature by both designing for safe, efficient movements, and utilizing access management techniques.
- Dorchester Road is designed to function as a Local Connector to Freight Intensive Activity Center. It is envisioned that Dorchester Road be designed for and function as a roadway for all users.
- Leeds Avenue is recommended to be designed to function as a Regional Arterial Stem. Leeds Avenue should be designed and signed to allow both local and regional trucks to smoothly connect across Dorchester Road and Azalea Drive, and access I-526.
- Establish a better east-west connection using Misroon Avenue, designed to be a Local Connector to Freight Intensive Activity Center.

Azalea Drive

As part of the regional movement of goods, Azalea Drive serves as a principal route for the movement of freight and other goods. There are predominantly industrial and other businesses that generate freight vehicles along Azalea Drive south of Cosgrove Avenue. This makes Azalea a Regional Arterial Stem, and a Local Connector to Intensive Freight Intensive Activity Centers. North of Cosgrove Avenue, Azalea Drive becomes much more conducive to through truck movements. There are few driveways and other obstructions to through traffic on Azalea. There are also fewer conflicts with other users of the roadway (pedestrians, bicycles, housing) that are more prevalent on Dorchester Road.

Leeds Avenue

Leeds Avenue connects perpendicularly with Dorchester Road and Azalea Drive to I-526. This connection provides an alternative route to the interstate system from the Dorchester Road-I-526 connection. Leeds Avenue is home to the CARTA maintenance shed for all CARTA buses, so this corridor will continue to support regional bus movements. This is also the location for Charleston County Public Works departments, a regional origin and destination for work trucks and supply trucks throughout the day.

Dorchester Road

Dorchester Road connects Rivers Avenue through interchanges with both I-26 and I-526 on to the proximity of the Charleston International Airport. The nature of this roadway ranges from local urban at the intersection with Rivers Avenue to suburban shopping centers and neighborhoods as it passes under I-26 and then more commercial as it gets closer to Leeds Avenue and I-526.

Freight activity on Dorchester Road would include local deliveries to retail stores and other local service trucks. Otherwise, it would be desirable to limit through or regional truck movements on this roadway. This would enhance the safety and efficiency for other roadway users, specifically pedestrians and bicyclists and transit users. Dorchester Road is also included in the regional premium transit network for increased bus, streetcar or other regional transit service. Roadway improvements for Dorchester Road should include transit design elements throughout.

Figure 7.18 depicts the improvements that are recommended to complete the Dorchester Road Corridor.

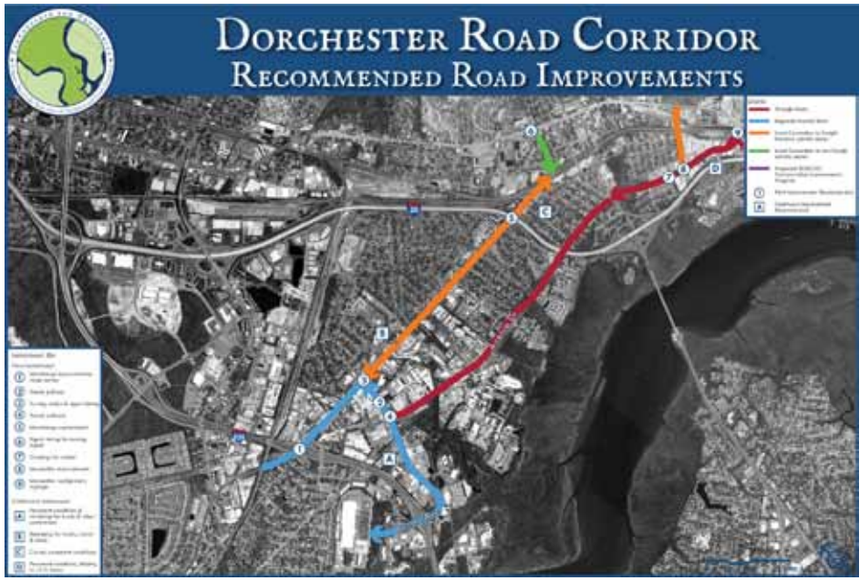


Figure 7.18 Dorchester Road Improvements (See Appendix A pg. 255)

MISROON AVENUE

Misroon Avenue currently connects S.T. Simmons Street and State Route 10. It is recommended that this road be extended to fully connect Carner Avenue, intersect with Rivers Avenue, and fully connect with Azalea Drive. This east-west connectivity would be designed to allow freight trucks to pass through to access Azalea Drive and I-26 more quickly and safely. This connection is not imperative to the completion of this corridor, but would benefit the connectivity goals for all users of the system, as depicted in **Figure 7.19**.

In summary, the complete Dorchester Road Corridor should be redesigned to encourage heavier freight movements and regional freight movements through Azalea Drive and Leeds Avenue to most efficiently reach I-26 or I-526. Freight on Dorchester Road should be limited as much as possible to local deliveries or other short distance trips for trucks. Dorchester Road should be designed to accommodate more than encourage freight vehicles and focus more on the balanced needs of local deliveries, autos, pedstrians, bicyclists and transit users.

COSGROVE AVENUE CORRIDOR

Cosgrove Avenue is an urban collector with cross sections of five and six lanes and is currently posted at 35 MPH. Average daily traffic along Cosgrove ranges from 8,300 to 16,000 vehicles.

In addition to vehicular traffic, this is also a heavily used transit route. Coupled with the transit service, pedestrians and bicycles traverse this corridor on a regular basis throughout the day.

Figure 7.19 Misroon Avenue Improvements

Land uses on Cosgrove Avenue include residential and commercial. While adjacent land uses are not high generators of freight vehicles, Cosgrove is a principal connector between north-south routes and I-26. This connection will increase in importance on a regional level as the Navy Yard redevelopment progresses. This area, formerly Naval Base Charleston, is planned for a range of redevelopment options from a mixed use, new urban community to rail intermodal activities at the ICTF site. Additionally, the SCPR master plan calls for Cosgrove Avenue to be extended past Spruill Avenue into the Naval Base, connecting with McMillan Avenue by a flyover above proposed rail track extensions coming north out of the ICTF.

Regardless of the eventual development, this site will generate a minimum of local delivery trucks to a maximum of regional and/or interstate freight trucks. Also connected to I-26 via Cosgrove Avenue are the Clemson Restoration Institute (CURI) and the Federal Law Enforcement Training Center (FLETC). Both operations generate traffic and expect to grow in activity in coming years. CURI will house a state of the practice offshore wind turbine testing facility and spin off industrial activities on the site, generating auto and truck trips.

Few parallel routes exist to support a multi-roadway corridor to complete the

Cosgrove Avenue Corridor. This roadway will function much like a local connector to intensive freight hubs as described above. Cosgrove Avenue should be considered a Through Route roadway and should be maintained as such for the foreseeable future. This route will continue to serve as a principal connection to both I-26 and the West Ashley portion of the Charleston region.

Figure 7.20 depicts improvements that are recommended to complete the Cosgrove Avenue Corridor.

Figure 7.20 Cosgrove Avenue Improvements (See Appendix A pg. 256)

Virginia Avenue Corridor

Options are a key element of sustainable transportation networks. If people and goods are limited by route options, the network will quickly suffer inefficiencies when incidents, such as traffic accidents or blocked rail crossings, occur.

Virginia Avenue is the northeastern connection from the Navy Yard area to the Interstate System. While Cosgrove Avenue provides interstate access (I-26) to proposed developments, CURI, and FLETC, Virginia Avenue provides that connection to I-526. Similar to Cosgrove Avenue, Virginia Avenue serves as a critical primary and secondary route for vehicles accessing the Interstate System from the Neck area, particularly in cases of incidents or roadblocks elsewhere.

Virginia Avenue presents an interesting balance in roadway design. It is an urban collector street with a five lane section and is currently posted at 45 MPH. Average daily traffic along Virginia Avenue ranges from 7,000 to 8,800 vehicles. In 2010, the roadways carried a range of 11 percent to 32 percent trucks of the total traffic volume. The types of trucks observed in this corridor include light trucks, buses and heavy trucks. There is also an active rail line that parallels Virginia Avenue, presenting grade separation challenges with the connection to Naval Base Charleston. There is also a historic residential community to the West of Virginia Avenue, known as Olde North Charleston and Park Circle. East Montague Avenue has been successfully redeveloped into an active retail and restaurant district within this community. Balancing the needs of this residential community with the industrial uses of the riverfront and redeveloping Navy Yard has been carefully weighed in this analysis. Currently, this roadway has excess capacity and has available right of way for design modifications.

The future Intermodal Container Transfer Facility will play an important role in the evolution of the Virginia Avenue corridor. Although it will have an impact on traffic patterns, it will also be an economic driver that attracts a variety of goods and service providers that cater to the daily needs of the people that will be using and working at the ICTF. Additionally, affiliated or synergistic businesses and industry are likely to spring up in areas adjacent to the ICTF where the close proximity can provide a competitive advantage.

In the short term, few enhancements are needed to complete this corridor. The five lanes of travel currently accommodate all users of the roadway. **Figure 7.21** depicts the recommended improvements to Virginia Avenue to complete this Through Route corridor.

Figure 7.21 Virginia Avenue Improvements (See Appendix A pg. 257)

US 52 / US 78 – Rivers Avenue Corridor

US 52, also known as Rivers Avenue, has served the Neck area since before the introduction of the Interstate System. This roadway was planned and designed to serve as the spine of the region. Rivers Avenue has functioned as a typical suburban roadway, lined with suburban strip malls and other retail and service outlets. This connects I-526 and a CSX Transportation rail intermodal terminal in the "Iron Dog District" of North Charleston. It also provides the primary non-interstate highway route through North Charleston to Charleston. Moving north to south, Rivers Avenue becomes less suburban and more industrial inside of the I-526 loop.

Rivers Avenue is an urban principal arterial with varying sections of five and six lanes. This roadway is currently posted at 45 MPH near the interchange with I-526 and is reduced to 35 MPH in the Iron Dog District (near Durant Avenue) and south. Average daily traffic along Rivers Avenue ranges from 3,800 to 25,800 vehicles. In 2010, the roadways carried a range of 2 percent to 17 percent truck as total of traffic volumes. Currently, the Rivers Avenue portion of US 52 crosses an overpass onto US 78, also known as the King Street Extension. It is recommended that this connection be enhanced to continue along US 52/Carner Avenue/Meeting Street Road. This road then merges with Meeting Street and continues into Downtown Charleston. This would repair the singular connection through the two cities for all users and improve the connectivity for regional transit, as proposed in the transit network of the Neck Area Master Plan.

Rivers Avenue is also the highest ranking ridership route in the CARTA bus system. These riders represent a community of commuters and shoppers who choose transit over driving for a list of reasons, including auto ownership, ability to drive, and access to jobs and services.

Like the Dorchester Road Corridor, the Rivers Avenue Corridor presents the challenge of balancing commercial activity that generates freight vehicles but also provides access to transit, bicycle, pedestrian and auto traffic as well. To complete the context of the Rivers Avenue Corridor, both McMillan Avenue and Spruill Avenue have been included in the corridor level analysis.

Spruill Avenue is an urban collector street with varying sections of two to five lanes and is currently posted at either 35MPH or 40 MPH. Average daily traffic along Spruill ranges from 9,700 to 11,200 vehicles.

In addition to vehicular traffic, this is also a heavily used transit route. Coupled with the transit service, pedestrians and bicycles traverse this corridor on a regular basis throughout the day.

McMillan Avenue is an urban collector street with varying cross sections of four to five lanes and is currently posted at 30 MPH. Average daily traffic along McMillan Avenue is 10,600 vehicles.

For the purpose of completing this corridor, it is recommended that Rivers Avenue be designed as a Local Connector to Freight Intensive Activity Center, balancing transport needs for all users. The parallel routes of Spruill Avenue and King Street are recommended for the route type Local Connector to Non-Freight Intensive Activity Centers, providing one route for freight and alternatives for non-freight users, enhancing connectivity by modes and safety improvements.

Figure 7.22 depicts the improvements recommended to complete the US 52/ Rivers Avenue Corridor for all users.

Figure 7.22 Rivers Avenue Corridor Improvements (See Appendix A pg. 258)

Montague Avenue

Montague currently serves as the principal east-west connector inside of I-526 through the City of North Charleston. The character of this road varies from one end to the other. At the western end of Montague, near the interchange with I-526, land uses are more industrial in nature, supporting local industry and the Charleston International Airport. Average traffic volumes in this area are in the range of 15,000 vehicles per day. Closer to the interchange with I-26, West Montague becomes much more congested as the land uses include both local industry as well as retail and services near the Tanger Factory Outlet Center. Average daily volumes in this area are close to 30,000 vehicles per day.

On the eastern side of the I-26 interchange, East Montague is industrial in nature as this road is the principal connection to the Norfolk Southern rail intermodal terminal. Beyond that, though, the road quickly drops to a slower, more residential community. Traffic volumes, too, decrease as the road continues eastward.

Montague Avenue will continue to play a role in the Neck area freight mobility network, but it is recommended that the current character be reinforced with design and policy elements to do so. It is recommended that West Montague be categorized as a Through Route for the purpose of design and resurfacing to support commercial vehicle movements through this region. Through Route characteristics are recommended for East Montague from I-26 to Rivers Avenue, providing safe mobility for trucks accessing the Norfolk Southern rail intermodal terminal, Rivers Avenue and the CSX rail intermodal terminal, and I-26. East of Rivers Avenue, it is recommended that East Montague be categorized as a Local Connector to Non-Industrial Intensive Activity Centers with such features as narrow lanes, bicycle lanes, and on-street parking where appropriate. **Figure 7.23** depicts the improvements recommended to complete the Montague Avenue Corridor.

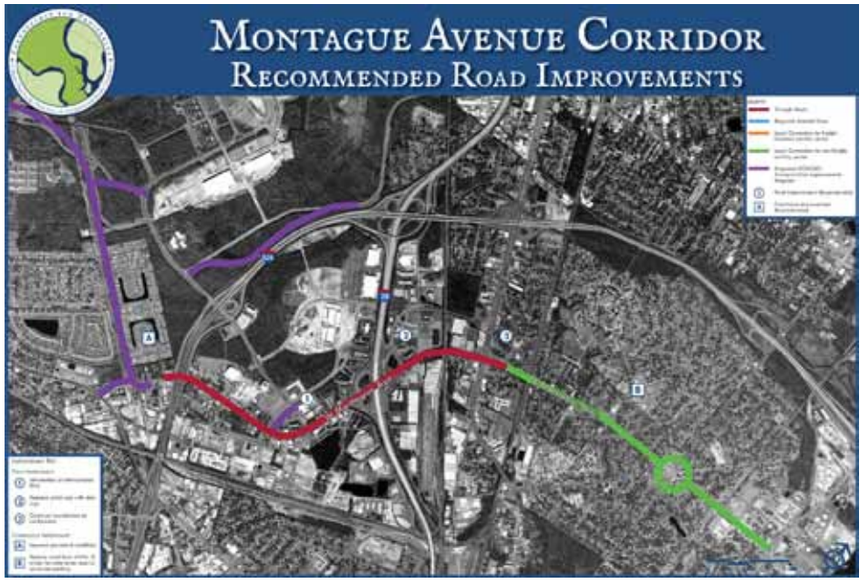


Figure 7.23 Montague Avenue Improvements (See Appendix A pg. 259)

Major Infrastructure Construction for Regional Freight Mobility

While the improvements and recommendations presented above offer near and mid-term solutions for regional freight mobility, major investment in infrastructure was also considered as part of the Neck Area Master Plan. Understanding the limitations of available infrastructure funding, it was appropriate to evaluate scenarios of using available roadways for an improved network as well as a bold approach to making regional connections to solve the challenges of the Neck area.

It should be understood that this is a planning level proposal of infrastructure improvement, realignment and construction. Detailed planning, alternatives analyses, and engineering level studies are necessary to progress any element of this concept plan into a programming phase. No costs have been attached to this concept at this level of planning.

New Freight Mobility Network - Conceptual

The presented freight mobility network consists of several key elements needed for its success. First and foremost, this concept strives to reorganize freight traffic towards the eastern corridor of the Neck area, spanning as far southeast as Morrison Drive and the Columbus Street Terminal and as far northwest as the Port Access Road near the border of Charleston and North Charleston. The Port Access Road, in particular, provides dedicated access to I-26 for Navy Base traffic, keeping freight traffic off local neighborhood roadways. This reorganization was based both on available rights-of-way as well as land uses and would then allow for all other modes of travel to be focused on routes through central and western Neck areas. The eastern banks of the Neck area are populated with such industries as Kinder-Morgan, Pepsi Bottling, CNC Terminal of the State Ports Authority, MacAlloy site, Federal Law Enforcement Training Center, and the Clemson University Restoration Institute. These uses are in operation or are under construction, and are expected to continue supporting the regional economy through job growth and supportive development.

The western side of the Neck area is experiencing land use development more in line with mixed use, residential, and service-based uses. While generalized, these land uses suggest the current make up of roadways and railways are inverted from what would be considered most appropriate given their surrounding contexts. The capacity for substantial new growth is on the western side and the potential for stable, gradual growth is on the eastern side. The bulk of roadway capacity, however, is on Meeting Street on the eastern side and only two roadway lanes provide access to potential growth areas on the western side. There is little argument in the community that these roadways are in disrepair and are poorly connected to local origins and destinations within the Neck area. In addition to roadway right of way, rail right of way is misaligned with development and connectivity potential. Currently three railroad tracks run through this portion of the Neck area. Those tracks currently serve industrial sites within the Neck Area as well as the Columbus Street Port Terminal. It is recommended that the rail rights of way be preserved, but realigned.

Key elements of the proposed freight network include:

- A two lane, limited access Through Route be constructed in place of the easternmost right of way of the existing Meeting Street;
- All three rail lines be shifted eastward as close to the above two lane, limited access roadway;
- A natural buffer on the west and/or east side of this combined right of way (buffering both the two lane Through Route and the rail lines;
- Reconstruct the existing King Street Corridor into a four or five lane section as a Local Connector to Freight Intensive Activity Center, continuing the recommended US 52/US 78 corridor through North Charleston and beyond;
- Interstate access from the two lane facility in the proximity of the proposed Port Access Road, separating through truck trips from local routes;
- Continuous connectivity of the two lane facility through the Navy Yard through to Virginia Avenue with defined westbound connection to Cosgrove Avenue, allowing interstate highway access to both the west and north; and
- New single ICTF site that will ensure dual and equal access for both CSX and Norfolk Southern to all port facility operations.

Figure 7.24 illustrates how as applied in the context of the land use and transportation goals of the Neck Area Master Plan, this concept plan accomplishes and reinforces a series of goals for the region.

Concept Element	Neck Area Master Plan Goal
A two lane, limited access Through Route be constructed in place of the easternmost right of way of the existing Meeting Street	• Provides limited access roadway for trucks and other commercial vehicles passing through the Neck Area to move efficiently • Provides access for trucks to industrial sites on East side of Neck Area • Remains open to traffic for all users • Expects low traffic volumes, relatively, reducing conflicts with rail crossings • Available right of way • Provides a non-interstate option for both truck and auto traffic patterns • Efficiency in freight movement results in better air quality and fuel savings for operators • Keeps regional freight movements on the East, less likely to pass through neighborhoods in Central and Western portions of the Neck Area, boosting safety, exposure to emissions and noise impacts • Provides the opportunity to construct a road with specific design and pavement to support freight movements, reducing long term maintenance costs
All three rail lines be shifted eastward as close to the above two lane, limited access roadway	• Reconstruction provides opportunity to improve rail crossing safety • Planning effort would include transit considerations • Planning effort may increase rail access to industrial and port related sites, providing more intermodal options for goods movement
A natural buffer on the west and/or east side of this combined right of way (buffering both the two lane Through Route and the rail lines	• Provides extension of green infrastructure through the center of the Neck Area • Provides natural buffer for both visual and noise impacts of development in Neck Area • Provides additional safety barrier between non-freight users and freight oriented facilities
Reconstruct the existing King Street Corridor into a four or five lane section as a Local Connector to Freight Intensive Activity Center, continuing the recommended US 52/US 78 corridor through North Charleston and beyond	• Reconstruction allows for an improved alignment with modern design guidelines • Provides access management strategies for local development plans • Provides continuous corridor for regional travel by all users: Auto, Bike, Pedestrian, Transit, and minimal truck • Reduces the travel demand (traffic) on the two lane facility, further reducing the potential for conflict with freight • Provides design opportunity to support regional transit projects • Provides a non-interstate alternative for regional traffic patterns • By providing alternate route on the East side for freight vehicles, allows for design and construction components to reduce long term maintenance costs

Implementing the Freight Mobility Plan

It is clearly understood by the planning team, through stakeholder meetings, charrettes, and focus groups held during the development of the Neck Area Master Plan that truck movements are critical to the success of many businesses in the Charleston region. With the expansion of the Port of Charleston and support for the transportation and logistics industry to help move goods on the land side, the efficient movement of trucks through the Charleston region should be on the agenda of local and state policymakers.

The Neck Area Master Plan addresses this issue on both the operational (infrastructure) and development (land use) sides of transportation management. While improvements can be made to existing roadways and techniques such as zoning and building codes can support desired development, the region must continue to monitor the performance of the freight mobility network.

Federal MAP-21 legislation provides support for the integration of freight planning and freight accommodations in transportation planning and finance. This suggests to all planners that the federal funding sources recognize the connection between infrastructure investment and economic development. For the Charleston

Interstate access from the two lane facility in the proximity of the proposed Port Access Road, separating through truck trips from local routes	• Provides a separated interstate access point away from other roadways, including existing access at Meeting Street Road • Allows for regional trucks to access the interstate without crossing other roadways, reducing delays and congestion potential • Efficiency in freight movement results in better air quality and fuel savings for operators
Continuous connectivity of the two lane facility through the Navy Yard through to Virginia Avenue with defined Westbound connection to Cosgrove Avenue, allowing Interstate access to both the west and north	• Provides a non-interstate option for trucks out of Mount Pleasant, Downtown Charleston and North Charleston directly to I-526 and Remount Road in North Charleston • Provides alternate routes for freight vehicles during incidences blocking an otherwise preferred route
	• Efficiency in freight movement results in better air quality and fuel savings for operators

Figure 7.24 Concept Elements Accomplishing Neck Area Master Plan Goals

region, and South Carolina as a whole, transportation infrastructure connects the goods into and out of the Port of Charleston to areas ripe for economic development and job growth. With regional goals of continuing to support economic development, improving our natural environment and air quality, the provision of a transportation network that includes multiple routes for rubber tire vehicles and supports rail connections where possible is imperative.

It is suggested that local planners with BCDCOG engage City, County, and State leaders to identify opportunities to prioritize the suggested short term projects for implementation. Some are possible in the already funded resurfacing programs. Others, required more interagency coordination and funding, should begin to appear on project lists, both for state and federal funding programs but also local option sales tax programs.

Chapter 8
Implementation & Strategy

This chapter provides a strategic plan that organizes the vision into achievable and actionable steps that can be undertaken over time. The plan includes both policy and implementation framework to maintain the vision momentum and provide accountability over time for the outcomes recommended in the plan.

Implementation & Strategy

IMPLEMENTING THE VISION

A vision is a community's process for determining where it wants to be in the future. Implementing that vision is done through a strategic action plan that organizes the vision into achievable and actionable steps that can be undertaken over time. The Partnership for Prosperity Master Plan outlined both a far-reaching vision and a specific Master Plan for the Charleston Neck area based on a foundation of prior plans and community input. Implementing that vision and Master Plan will take a coordinated effort among many local, regional and state entities over the coming years. **Figure 8.1** illustrates the project time horizons.

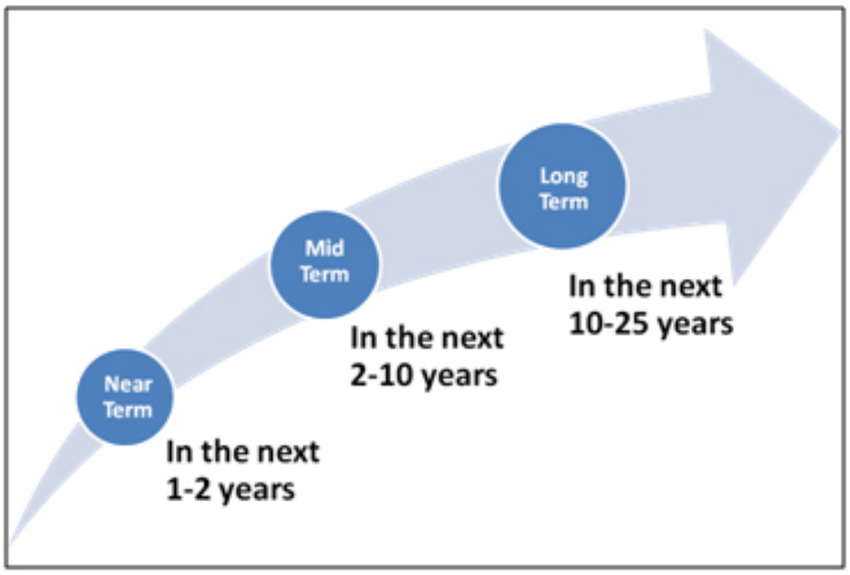


Figure 8.1 Project Time Horizons

IMPLEMENTATION FRAMEWORK

Through the Partnership for Prosperity planning process, the Neck area has emerged with a new focus and new impetus for improvement among a diverse array of local and regional stakeholders. While the cities of North Charleston and Charleston and groups like LAMC have been establishing a policy and implementation framework for portions of the Neck over several years, the Partnership for Prosperity plan is the first true intergovernmental and interagency plan to focus on the human and physical resources of the whole Neck area. The Partnership for Prosperity plan not only establishes a unifying vision for the future of the Neck area, it identifies a wide array of potential actions and projects to implement that vision over time. Realizing the vision and implementing this array of projects will take concerted and coordinated action through long term partnerships among many groups and entities.

> *"…. the Partnership for Prosperity plan is the first true intergovernmental and interagency plan to focus on the human and physical resources of the whole Neck area."*

The most important factor in successful implementation of long range plans is to have a central alliance or entity that is accountable for the ultimate outcome of the plan. Formation of a central entity responsible for Master Plan implementation will provide the framework or organizing all of the Master Plan implementation activities in the Neck area, not just economic development and revitalization but educational and community improvement as well as physical improvements such as transportation infrastructure. For continuity purposes, it is recommended that this entity continue the name of the Partnership for Prosperity (the Partnership for short) and remain under the umbrella of the BCDCOG in order to provide an overarching level of accountability.

The first step is to determine its membership and organization, including naming principals and stakeholders and establishing a structure for regular interaction. A Memorandum of Understanding or similar document should be signed by all principals to define the mission and goals of the organization and establish commonly agreed-upon commitments, responsibilities, staffing, and funding. Principal members would be expected to be the cities of Charleston and North Charleston, Charleston County, Chambers of Commerce, the South Carolina Department of Transportation, and the SC Ports Authority. Other local and regional stakeholders, service providers, institutions, and individuals would be invited as part of a broader stakeholder group to interact regularly with the Partnership with a goal of attracting a broad range of expertise and representation within relevant issue areas.

Figure 8.2 shows how the key partners could interact with a standing entity like the Partnership. It shows a feedback loop with the Partnership regularly reporting on progress achieved toward the implementation priorities.

REGULAR COMMUNICATION

Critical to the effective work of the Partnership in implementing the vision for the Neck will be establishing protocols and agreements for regular communication and meetings. It is recommended that the current Steering Committee for

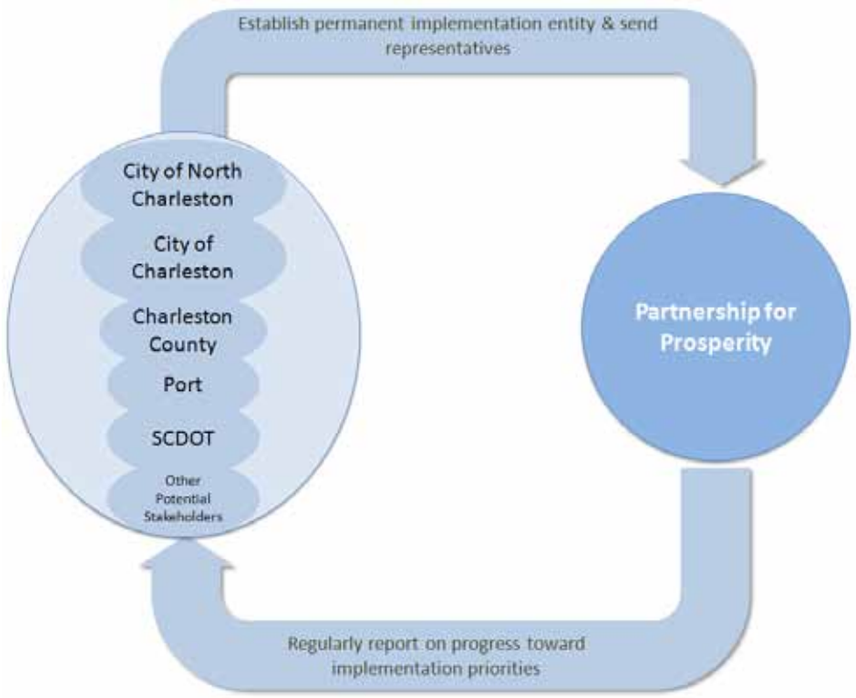


Figure 8.2 Project Information Loop

this project be the basis for the establishment of a long term and standing implementation entity – i.e. to continue the Steering Committee structure as the long term "Partnership." While other options may also be considered, the most obvious coordinating agency to steward the Partnership for the long term is the BCDCOG. The Partnership will need dedicated staffing to ensure coordination of meetings, preparing progress reports and helping catalyze and integrate individual implementation actions and projects. Two possible staffing approaches for the Partnership that share the responsibility among the key partner entities are the following:

Partnership for Prosperity – Potential Support Staffing

Option One	Dedicated COG staff member(s) – may need funding support from Partners
Option Two	Rotating staff members from each City (annual rotation basis)

Option One is recommended given the BCDCOG's role as a convener of stakeholders around regional issues, including recognition of its role staffing the CHATS MPO for the urbanized area. A rotation among staff members might make sense if all the partners were equally responsible for plan implementation and had similar missions (e.g., if all were MPOs working within a similar region); however, in light of their different areas of emphasis and agency missions, the BCDCOG is in a better position to facilitate the continued function of the Partnership to advance strategies and coordinated planning within the Neck area.

In addition to providing support staffing, an agreement will have to be established for the timing and frequency of regular meetings among the partners and stakeholders to review progress among the implementation priorities. Potentially, regular communications could be set up at three levels:

- Partners – the Partners would be the standing representatives from the cities, county, SCDOT and Port, as in the composition of the current Steering Committee. Partners could meet semi-annually at the COG or each partner could host the meeting on a rotating basis.
- Mayors – the mayors of each city and the County Administrator could meet on a semi-annual basis. One meeting should be for big picture coordination and to maintain the level of mutual political commitment to the implementation of the Master Plan, and the other should be in an annual forum including Partnership, leadership, stakeholders and residents.
- Stakeholders – a larger group of stakeholder participants that would include community, private, governmental and industry representatives could meet on the most frequent basis with the Partnership staff member(s) to coordinate specific implementation roles and priorities.

Communication is a key to long-term success. of the Neck Master Plan.

This structure would allow for communication to flow at multiple levels and be guided by a common commitment to the Master Plan, vision and a specific plan of action. In addition, it is important to have a quarterly convocation of all three of these groups at a "Partnership Forum." This combined meeting would help reinforce solidarity among key partners, stakeholders and elected officials in the implementation of the plan, including pursuit of regional, state or federal funding sources. It could also be a forum for updating all on the progress of the implementation actions through a "sharing of stories" that highlight successful completion of actions by individual stakeholders. In addition, the Forum would be an opportunity for the Partnership to recognize particular key accomplishments since the prior Forum with awards or a recognition program.

Figure 8.3 summarizes the three levels of communication flow as well as the annual or semi-annual Forum that integrates all the levels.

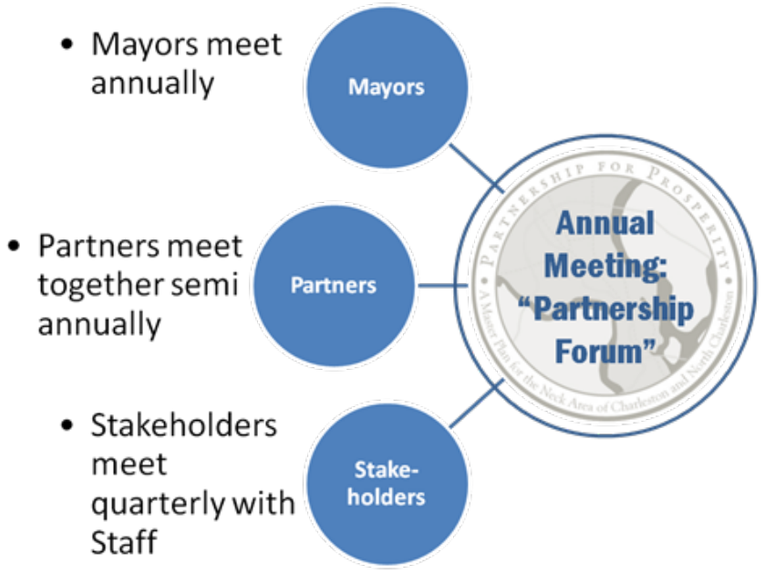


Figure 8.3 Partnership for Prosperity Communication Flow

Success of the Action Plan will ensure the longevity of the Neck area.

The Action Plan is intended to be a living document and it will be the most subject to change as the plan is tested against assumptions among the partners and stakeholders. It will be critical at all times to keep momentum and a focus on the Action Plan to capitalize on unforeseen opportunities that may arise if they are consistent with the overall vision and Master Plan.

The Action Plan is presented on the following pages in the form of a matrix that lays out projects and actions by category and identifies the key responsible agents and time frames for completion. Each project is described along with the entity responsible for the effort, and where possible, the estimated cost, and potential funding sources for the effort. The projects are organized into a number of categories with a corresponding color and are generally arranged with the most far reaching and general projects first, followed by more specific projects and actions.

Phase	Project/Action	Description/Notes	Implementation Partners	Probable Costs	Potential Funding Sources
ECONOMIC AND EDUCATIONAL DEVELOPMENT					
Near Term	Community Cornerstone Inventory project	Conduct an inventory of the existing or emerging community centers and other focal points in each neighborhood that act as cornerstones for community cohesion. Analyze the physical condition, function of each in the neighborhood and opportunities for each to be enhanced physically and programmatically.	City of Charleston, City of North Charleston	Staff time	n/a
Mid Term	Community Cornerstone Enhancement project	Implement the recommendations for physical and program enhancement in each neighborhood that has an existing or emergent community center or strong potential for the development of one.	City of Charleston, City of North Charleston	Depends on recommendations	- Grants and donations - Partnerships with nonprofits and institutions - TIF for construction/rehab costs
Near term	Satellite job training center	Construct a pilot of a small "neighborhood job center" in a strategic neighborhood location that would provide a staffed space with computer stations, temporary child care and facilities for resume workshops, job boards and other targeted job training programs. Explore potentials for corporate or non-profit underwriting of the center.	City of Charleston, City of North Charleston, Charleston County, BCDCOG	- $20,000/year for leasing or financing space - $20,000-$60,000/year for new personnel costs - $5,000 for equipment and fixtures - Staff time	- Grants and donations - Partnerships with nonprofits and institutions - TIF for construction/rehab costs
Mid Term	Coordination with LAMC job training initiatives	Coordinate with LAMC initiatives like the Local Vendor/Contractor program and the Maritime Training Institute as described in the LAMC Revitalization Plan.	City of Charleston, City of North Charleston, Charleston County, BCDCOG	Staff time	n/a
Near Term	Adopt a School Program	Develop a program to match private industries and businesses that are willing to adopt a school and provide equipment, mentorship and educational programs to enhance the students exposure to technical employment opportunities.	City of Charleston, City of North Charleston, Charleston County, BCDCOG	Staff time	n/a
COMMUNITY REDEVELOPMENT PROGRAMS					
Near Term	Redevelopment Opportunity Inventory	Conduct an economic and engineering analysis of prime redevelopment opportunities in the Neck. Develop a database of each site or building that summarizes physical, ownership and economic data on each property to facilitate marketing them as redevelopment opportunities. Identify regulatory, environmental or technical impediments to redevelopment and recommend strategies for addressing each impediment.	City of Charleston, City of North Charleston, Charleston County, BCDCOG	- $30,000-$60,000 for site studies, depending on number of sites and extent of analysis - Staff time for database	TIF for site studies
Near Term	Revitalization Manager Program	Establish a special position within Planning Departments with focused responsibility for citywide revitalization. While not focused exclusively on the Neck, establishing these positions (and ensuring close cooperation between each city's Revitalization manager) will help reinforce joint initiatives for revitalizing areas in the Neck.	City of Charleston, City of North Charleston, Charleston County	Staff time	n/a
Near Term	Zoning Alignment Project	Conduct revisions or rezoning strategies for each catalyst site area in order to determine the best zoning framework that would spur redevelopment according to the master plan. Design guidelines can provide additional illustration and clarity about what is expected of developers in specific locations, providing them greater certainty when initiating projects.	City of Charleston, City of North Charleston, Charleston County	Staff time	n/a
Near Term	TOD Development Incentives	Realign existing codes and development approval processes to provide incentives for Transit Oriented Development projects. Incentives may include expedited plan review and approval, or reduced development fees, for projects that align with the Master Plan objectives, as well as density/intensity bonuses that can enhance developer profitability while maximizing activity levels near the station.	City of Charleston, City of North Charleston, Charleston County	Staff time	n/a
Near Term	Redevelopment Guide	Complete a redevelopment guide for focus projects. Pacakage the vision and market opportunities in a 2-page fact sheet that highlights projects underway, recent investments and any new development planned.	BCDCOG	Staff time	n/a
TRANSIT PROJECTS					
Near Term	Bus service enhancement	Enhance coverage/frequency of bus service to neighborhoods.	CARTA, City of Charleston, City of North Charleston, Charleston County	TBD	- Charleston County sales tax - Development impact fees - Local revenue options
Near Term	Rivers Avenue bus service	Enhance bus service on Rivers Avenue: improved shelters, passenger information, branding, etc.	CARTA, City of Charleston, City of North Charleston, Charleston County	$5,000 - $15,000/stop	- Charleston County sales tax - Development impact fees - Local revenue options

Phase	Project/Action	Description/Notes	Implementation Partners	Probable Costs	Potential Funding Sources
Near Term	Dorchester Road bus service	Enhance bus service on Dorchester: improved shelters, passenger information, branding, etc.	CARTA, City of North Charleston	$5,000 - $15,000/stop	- Charleston County sales tax - Development impact fees - Local revenue options
Mid Term	New circulator service	Create circulator/shuttle routes in port and airport areas.	CARTA, City of North Charleston	TBD	- Charleston County sales tax - Development impact fees - Local revenue options
Mid Term	I-26 express bus service	Develop express bus service on I-26 to create regional coverage.	CARTA, City of Charleston, City of North Charleston, Charleston County, Berkeley County, Dorchester County	TBD	- Charleston County sales tax - Development impact fees - Local revenue options
Mid Term	Dorchester Road express bus service	Develop express bus service on Dorchester Road (Intermodal Center to Summerville).	CARTA, City of Charleston, City of North Charleston, Charleston County, Berkeley County, Dorchester County	TBD	- Charleston County sales tax - Development impact fees - Local revenue options
Mid Term	Intermodal facility redesign	Design intermodal facility at Dorchester Road and Montague Avenue and provide street connection from Dorchester Road.	CARTA, AmTrak, Greyhound, City of Charleston, City of North Charleston, Charleston County	TBD	- Charleston County sales tax - Development impact fees - Local revenue options
Long Term	Major light rail project	Develop light rail/BRT along major roadways (Rivers Avenue and Meeting Street/KingStreet rail corridor).	CARTA, SCDOT, City of Charleston, City of North Charleston, Charleston County	TBD	- Charleston County sales tax - Development impact fees - Local revenue options
Long Term	Major commuter rail project	Create commuter rail service along existing rail tracks.	CARTA, CSX, NS, City of Charleston, City of North Charleston, Charleston County	TBD	- Charleston County sales tax - Development impact fees - Local revenue options
Mid Term	Shipwatch Square transfer facility	Replace bus SuperStop with expanded transfer facility in Shipwatch Square catalyst area.	CARTA, City of North Charleston	$500,000	- Charleston County sales tax - Development impact fees - Local revenue options
ROADWAY PROJECTS					
Network-Wide Projects					
Mid Term	Complete streets enhancements	Develop "complete streets" to promote a variety of travel modes.	SCDOT, CARTA, City of Charleston, city of North Charleston, Charleston County	TBD	- Safe Routes to School - Complete Streets grants - Charleston County sales tax program
Long Term	Montague Avenue realignemnet	Realign Montague Ave to alleviate traffic congestion near the airport.	City of North Charleston	TBD	- State infrastructure bank - Charleston County sales tax
Mid Term	Neighborhood connectivity projects	Extend street grids to increase neighborhood connectivity.	City of Charleston, City of North Charleston, Charleston County	TBD	- Charleston County sales tax
Long Term	Montague Avenue parallel facility	Create a new multimodal roadway parallel to Montague Ave.	SCDOT, City of North Charleston	$5,000,000	- State infrastructure bank - Charleston County sales tax
Mid Term	Mount Pleasant St/Meeting St realignment	Realign Mount Pleasant St/Meeting St intersection.	SCDOT, City of Charleston	$875,000	- Charleston County sales tax
Long Term	Rivers Ave/Montague Ave realignment	Realign Rivers Ave/Montague Ave intersection.	SCDOT, City of North Charleston	$1,250,000	- Charleston County sales tax
Virginia Avenue Projects					
Point Improvements					
Mid Term	Noisette Creek bridge	Replace bridge over Noisette Creek (Noisette Boulevard).	SCDHEC, City of North Charleston	$1,000,000	- SC Public Railways - Charleston County sales tax
Near Term	Misroon Street crossing	Improve railroad crossing at Misroon Street between Meeting Street and Appleton Avenue for safety.	CSX, NS, City of North Charleston	$200,000	- SC Public Railways - Charleston County sales tax
Near Term	Virginia Avenue crossing	Improve railroad crossing at Virginia Avenue between I-526 and Remount Road for safety.	CSX, NS, SCDOT, City of North Charleston	$200,000	- SC Public Railways - Charleston County sales tax
Continuous Improvements					
Mid Term	Hobson Avenue connections	Improve connections from Hobson Avenue to Navy Yard.	City of North Charleston	$850,000	- SC Public Railways - Charleston County sales tax
Montague Avenue Projects					
Point Improvements					
Mid Term	Montague Ave/International Blvd intersection	Improve Montague Ave/International Blvd intersection.	City of North Charleston	$150,000	- Charleston County sales tax
Near Term	Mall Drive improvement	Replace yield sign with stop sign on Mall Drive coming from Montague Ave.	City of North Charleston	$15,000	- Charleston County CTC
Long Term	Montague Ave/Rivers Ave roundabout	Construct roundabout at Montague Ave/Rivers Ave intersection.	SCDOT, City of North Charleston	$1,250,000	- Charleston County sales tax

Phase	Project/Action	Description/Notes	Implementation Partners	Probable Costs	Potential Funding Sources
		Continuous Improvements			
Mid Term	Montague Avenue pavement	Improve pavement conditions on Montague Avenue between I-526 and Rivers Avenue ramps.	City of North Charleston	$1,500,000	- Charleston County CTC - Charleston County resurfacing program
Mid Term	Montague Avenue road diet - west	Implement road diet to reduce Montague Avenue to two travel lanes (west side of Park Circle to Liberty Hill).	City of North Charleston	$75,000	- Charleston County CTC - Charleston County resurfacing program
Mid Term	Montague Avenue road diet - east	Implement road diet with potential for on-street parking on Montague Avenuenue (Liberty Hill to Rivers Ave ramps).	City of North Charleston	$75,000	- Charleston County CTC - Charleston County resurfacing program
		Dorchester Road Projects			
		Point Improvements			
Long Term	Dorchester Road/I-526 interchange	Improve Dorchester Road interchange with I-526.	SCDOT, City of North Charleston	$3,000,000	- Charleston County sales tax
Mid Term	Leeds Avenue transit pull outs	Add transit pull-outs on Leeds Avenue between Dorchester Road and Azalea Drive.	SCDOT, CARTA, City of North Charleston	$600,000	- Charleston County sales tax - Complete Streets grants - Charleston County CTC
Mid Term	Dorchester Road/Leeds Avenue intersection	Improve turning radius and signal timing at Dorchester Avenue/Leeds Avenue intersection.	SCDOT, City of North Charleston	$75,000	- Charleston County CTC - Charleston County sales tax
Mid Term	Leeds Avenue/ Azalea Drive transit pull outs	Add transit pull-outs at Leeds Avenue/Azalea Drive intersection.	SCDOT, CARTA, City of North Charleston	$600,000	- Charleston County sales tax - Complete Streets grants - Charleston County CTC
Long Term	Dorchester Road/I-26 interchange	Replace Dorchester Road interchange with I-26.	SCDOT, City of North Charleston	$3,000,000	- Charleston County sales tax - State infrastructure bank
Near term	Dorchester Road/Rivers Avenue intersection	Improve timing for turning signal at Dorchester Avenue/Rivers Avenue intersection.	SCDOT, City of North Charleston	$50,000	- Charleston County CTC
Near Term	Azalea Drive school crossings	Add school crossings and other intersection improvements on Azalea Drive at Greg Mathis Charter High School.	SCDOT, City of North Charleston	$40,000	- Safe Routes to School - Complete Streets grants - Charleston County sales tax program
Mid Term	Dorchester Road/King Street intersection	Realign Dorchester Road/King Street intersection, including signage.	SCDOT, City of North Charleston	$200,000	- Charleston County sales tax - I-26 improvement projects
		Continuous Improvements			
Mid Term	Leeds Avenue pavement improvements	Improve pavement conditions and restripe Leeds Avenue between I-526 interchange and Dorchester Avenue.	SCDOT, City of North Charleston	$600,000	- Charleston County resurfacing program - Charleston County CTC
Near Term	Dorchester Avenue restriping	Restripe Dorchester Road between Leeds Avenue and Meeting Street.	SCDOT, City of North Charleston	$50,000	- Charleston County sales tax - Complete Streets grants - Charleston County CTC
Mid Term	Dorchester Avenue pavement improvements	Improve pavement conditions and curves on Dorchester Road between Leeds Avenue and Meeting Street.	SCDOT, City of North Charleston	$1,500,000	- Charleston County sales tax - Complete Streets grants - Charleston County CTC
Mid Term	Azalea Drive pavement improvements	Improve pavement conditions and restripe Azalea Drive between Cosgrove Avenue and King Street.	SCDOT, City of North Charleston	$1,500,000	- Charleston County sales tax - Charleston County resurfacing program - Charleston County CTC
		US 52/78 Corridor Projects			
		Point Improvements			
Mid Term	Rivers Avenue/I-526 interchange	Improve curves and pavement condition at Rivers Ave/I-526 interchange.	SCDOT, City of North Charleston	$2,100,000	- State infrastructure bank - Charleston County sales tax
Long Term	Rivers Avenue/Durant Avenue intersection	Redesign intersection and improve signal timing at Rivers Avenue/Durant Avenue intersection.	SCDOT, City of North Charleston	$750,000	- Charleston County sales tax - Charleston County resurfacing program - Charleston County CTC
Mid Term	Rivers Avenue/Meeting Street/Macon Street improvements	Provide alternative connection to Rivers Avenue and Meeting Street at Macon Avenue.	SCDOT, City of North Charleston	$250,000	- Charleston County sales tax - Charleston County CTC
Mid Term	Rivers Avenue/King Street intersection	Realign intersection at Rivers Avenue and King Street.	SCDOT, City of North Charleston	$750,000	- Charleston County sales tax
Long Term	Meeting Street/I-26 interchange ramps	Improve I-26 ramps at Meeting Street.	SCDOT, City of Charleston	TBD	- Charleston County sales tax - State infrastructure bank

Phase	Project/Action	Description/Notes	Implementation Partners	Probable Costs	Potential Funding Sources
					- State infrastructure bank
Mid Term	Spruill Avenue/Meeting Street intersection improvements	Redesign Spruill Avenue/Meeting Street intersection for freight turns.	SCDOT, City of North Charleston	$750,000	- Charleston County sales tax - State infrastructure bank
Near Term	Accabee Road RR crossing	Improve railroad crossing at Accabee Road between Meeting Street and Appleton Avenue for safety.	CSX, NS, City of North Charleston	$200,000	- Port access road funding - SC public railways - Charleston County sales tax
Near Term	Meeting Street RR crossing	Improve railroad crossing at Meeting Street between Cunnington Avenue and Mount Pleasant Street for safety.	CSX, NS, SCDOT, City of Charleston	$200,000	- Port access road funding - SC public railways - Charleston County sales tax
		Continuous Improvements			
Near Term	Rivers Avenue restriping	Restripe Rivers Avenue for trucks and transit between Durant Avenue and McMillan Avenue.	SCDOT, City of North Charleston	$50,000	- Charleston County resurfacing program -Charleston County CTC
Mid Term	Rivers Avenue restriping & resurfacing	Resurface Rivers Avenue and restripe for all modes between McMillan Avenue and King Street.	SCDOT, City of North Charleston	$750,000	- Charleston County resurfacing program -Charleston County CTC
Near Term	McMillan Avenue restriping	Restripe McMillan Avenue to narrow lanes between Meeting Street and Hobson Avenue.	City of North Charleston	$600,000	- Charleston County resurfacing program -Charleston County CTC
Mid Term	King Street restriping	Resurface, restripe, and add curb and gutter to King Street between Rivers Avenue and Mount Pleasant Street.	SCDOT, City of North Charleston, City of Charleston	$850,000	- Charleston County resurfacing program -Charleston County CTC
Mid Term	Meeting Street transit pull outs	Provide transit pull-outs and add bike lanes on Meeting Street between Spruill Avenue and Mount Pleasant Street.	SCDOT, CARTA, City of North Charleston, City of Charleston	$450,000	- Complete Streets grants - Charleston County sales tax - Charleston County CTC
		FREIGHT MOVEMENT PROJECTS			
		Network-Wide Projects			
Mid Term	General rail relocation	Redirect rail from neighborhood areas	CSX, NS, City of Charleston, City of North Charleston, Charleston County	TBD	- SC public railways - State infrastructure bank - Tiger grant programs
Mid Term	General freight bypass routes	Create multiple freight routes to bypass residential areas.	City of Charleston, City of North Charleston, Charleston County	TBD	- State infrastructure bank - Charleston County sales tax
Near Term	General freight buffers	Create buffers between freight areas and neighborhoods.	City of Charleston, City of North Charleston, Charleston County	$25,000 - $50,00/mile	- SC public railways
Long Term	General grade separations	Develop grade separated intersections for freight traffic.	City of Charleston, City of North Charleston, Charleston County	TBD	- SC public railways - State infrastructure bank - Tiger grant programs
		Location Specific Projects			
Mid Term	Hackerman Avenue/King Street intersection	Improve Hackemann Avenue intersection with King Street and railroad crossing to safely accommodate truck movements.	CSX, NS, SCDOT, City of North Charleston	$500,000	- Port access road funding - Charleston County sales tax
Mid Term	Discher Street/King Street intersection	Improve Discher Street intersection with King Street and railroad crossing to safely accommodate truck movements.	CSX, NS, SCDOT, City of Charleston	$500,000	- Charleston County resurfacing program - Charleston County sales tax
Mid Term	Azalea Drive/King Streetintersection	Improve Azalea Drive/King Street intersection to safely accommodate truck movements.	SCDOT, City of North Charleston	$500,000	- Charleston County resurfacing program - Charleston County sales tax
Mid Term	Virginia Avenue/ Avenue B N intersection	Redirect priority direction to align Virginia Avenue with Avenue B N where they intersect.	SCDOT, City of North Charleston	$750,000	- Charleston County resurfacing program - Charleston County sales tax - SC public railways
Mid Term	Noisette Boulevard/ Avenue B N intersection	Redirect priority direction to align Noisette Boulevard with Avenue B N where they intersect.	City of North Charleston	$750,000	- Charleston County resurfacing program - Charleston County sales tax - SC public railways
Near Term	Leeds Avenue/Azalea Drive intersection	Adjust signal timing at Leeds Avenue/Azalea Drive intersection to accommodate more efficient truck movements.	SCDOT, City of North Charleston	$50,000	- SCDOT
Mid Term	Azalea Drive/King Street north improvements	Just north of Azalea Drive and King Street, improve and/or widen existing two lane configuration to correspond to adjoining roadway at either end.	SCDOT, City of North Charleston	$500,000	- State infrastructure bank - Charleston County sales tax

Phase	Project/Action	Description/Notes	Implementation Partners	Probable Costs	Potential Funding Sources
Mid Term	Avenue B N intersection improvements	Improve or widen Avenue B N between Virginia Avenue and Noisette Boulevard.	SCDOT, City of North Charleston	$250,000	- Charleston County sales tax - SC public railways - State infrastructure bank
Mid Term	Noisette Boulevard improvements	Improve or widen Noisette Boulevard between Avenue B N and 5th Street.	City of North Charleston	$500,000	- Charleston County sales tax - SC public railways - State infrastructure bank
Mid Term	Hobson Avenue improvements	Improve or widen Hobson Avenue from Noisette Boulevard to Register Street.	City of North Charleston	$500,000	- Charleston County sales tax - SC public railways - State infrastructure bank
Long Term	Virginia Avenue freight improvements	Separate freight traffic from local traffic on Virginia Avenue.	SCDOT, City of North Charleston	$1,500,000	- Charleston County sales tax - SC public railways - State infrastructure bank
Mid Term	Port access road	Develop port access road from I-26.	SCDOT, City of Charleston, City of North Charleston, Charleston County	TBD	- Port access road funding
BICYCLE/PEDESTRIAN IMPROVEMENT PROJECTS					
Network-Wide Projects					
Near Term	General bicycle enhancements	Add bicycle lanes and shared lane markings to enhance safety.	SCDOT, City of Charleston, City of North Charleston, Charleston County	$2,000 - $5,000/mile	- Grants and donations - TIF for construction/rehab costs
Near Term	General sidewalk enhancements	Repair/close gaps in neighborhood sidewalk network.	City of Charleston, City of North Charleston, Charleston County	$25 - $50/LF	- Grants and donations - TIF for construction/rehab costs
Near Term	General RR crossing improvements	Improve railroad crossings for bicycles and pedestrians.	CSX, NS, City of Charleston, City of North Charleston, Charleston County	$25,000 - $50,000/ea	- Grants and donations - TIF for construction costs
Near Term	General park access enhancements	Provide connections to parks and community elements.	City of Charleston, City of North Charleston, Charleston County	$50 - $100/LF	- Grants and donations - Partnerships with nonprofits, institutions and private entities
Near Term	Streetscape Enhancements	Improve the travel time experience and aesthetics along street corridors by undertaking a variety of streetscape projects including landscaping, lighting, crosswalks, signage, pedestrian bulb-outs and furniture.	City of Charleston, City of North Charleston, Charleston County	$50 - $100/LF	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction costs
Mid Term	Rail to trail enhancements	Convert abandoned rail lines to multi-use trails.	CSX, NS, City of Charleston, City of North Charleston, Charleston County	$100,000 - $150,000/mile	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction costs
Location Specific Projects					
Near Term	Dorchester Avenue ped crossings	Enhanced pedestrian crossings on Dorchester Avenue.	SCDOT, City of North Charleston	$3,000 - $5,000/ea	- Grants and donations - TIF for construction/rehab costs
Mid Term	Noisette Creek path	Shared use path: Noisette Creek corridor (Cooper River to Rivers Avenue).	SCDHEC, City of North Charleston	$250,000 - $350,000/mile	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction costs
Mid Term	King Street path	Shared use path: King Street (on west side, from bridge over RR tracks south to Mount Pleasant Street area).	SCDOT, City of Charleston, City of North Charleston, Charleston County	$150,000 - $200,000/mile	- Grants and donations - TIF for construction/rehab costs
Mid Term	Petty Street path	Shared use path: Petty Street (approx) to southern end of Austin Avenue.	City of Charleston	$150,000 - $200,000/mile	- Grants and donations - TIF for construction/rehab costs
Mid Term	Filbin Creek path	Shared use path: Along Filbin Creek/I-526 from Virginia Avenue to Piedmont Avenue.	SCDHEC, City of North Charleston	$250,000 - $350,000/mile	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction costs

Phase	Project/Action	Description/Notes	Implementation Partners	Probable Costs	Potential Funding Sources
Mid Term	Least Term Road path	Shared use path: Least Term Road/Tidewater Road (Spruill Avenue to Cooper River Marina).	SCDHEC, City of North Charleston	$250,000 - $350,000/mile	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction costs
Long Term	Ashley Shores waterfront path	Shared use path: Along shoreline from west of Azalea Drive at Ashley Shores Drive west to Bridge View Drive.	SCDHEC, City of North Charleston	$250,000 - $350,000/mile	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction costs
Mid Term	Spruill Avenue parallel path	Shared use path: parallel to Spruill Avenue (from approx Delaware Avenue to Montague Avenue).	SCDOT, City of North Charleston	$150,000 - $200,000/mile	- Grants and donations - TIF for construction/rehab costs
Mid Term	Mount Pleasant Street path	Shared use path: Mount Pleasant Street south to Spring Street.	City of Charleston	$150,000 - $200,000/mile	- Grants and donations - TIF for construction/rehab costs
Mid Term	Rivers Avenue/Spruill Avenue multimodal spines	Create multimodal transportation spines on Rivers Avenue and Spruill Avenue.	SCDOT, City of Charleston, City of North Charleston, Charleston County	$200,000 - $250,000/mile	- Grants and donations - TIF for construction/rehab costs
Near Term	Spruill Avenue bike lane	Buffered bike lane on Spruill Avenue (Meeting Street to Montague Avenue).	SCDOT, City of North Charleston	$5,000 - $10,000/mile	- Grants and donations - TIF for construction/rehab costs
Near Term	Montague Avenue bike lane	Buffered bike lane on Montague Avenue (Virginia Avenue to Rivers Avenue).	City of North Charleston	$5,000 - $10,000/mile	- Grants and donations - TIF for construction/rehab costs
Near Term	Austin Avenue bike lane	Bike lane striping on Austin Avenue (southern end to east of I-26).	City of North Charleston	$2,000 - $5,000/mile	- Grants and donations - TIF for construction/rehab costs
Near Term	Meeting Street bike lane	Bike lane striping on Meeting Street (Morrison Drive to Spruill Avenue).	SCDOT, City of Charleston	$2,000 - $5,000/mile	- Grants and donations - TIF for construction/rehab costs
PARKS & OPEN SPACE PROJECTS					
Network-Wide Projects					
Mid Term	General neighborhod park enhancements	Develop active recreation facilities in neighborhood areas.	City of Charleston, City of North Charleston, Charleston County	$50,000 - $200,000/ea	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction/rehab costs
Near Term	General residential green space enhancements	Create public green spaces in residential and mixed use areas.	City of Charleston, City of North Charleston, Charleston County	$50,000 - $75,000/ea	- Grants and donations - Partnerships with nonprofits, institutions and private entities - Development fees
Mid Term	General shoreline enhancement	Shoreline and wetland mitigation and restoration.	SCDHEC, COE, City of Charleston, City of North Charleston, Charleston County	TBD	- Grants and donations - Partnerships with nonprofits, institutions and private entities
Mid Term	General open space enhancements	Designate open spaces for environmental preservation.	SCDHEC, City of Charleston, City of North Charleston, Charleston County	TBD based on underlying land values	- Grants and donations - Partnerships with nonprofits, institutions and private entities
Mid Term	Increase river access	Provide public accessibility to Ashley and Cooper Rivers for recreation and fishing activities.	SCDHEC, City of Charleston, City of North Charleston, Charleston County	$25,000 - 75,000/ea	- Grants and donations - Partnerships with nonprofits, institutions and private entities
Near Term	Gateways and Wayfinding	Establish a unified signage and identification system.	City of Charleston, City of North Charleston, Charleston County	$75,000 - $100,000	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction costs

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Phase	Project/Action	Description/Notes	Implementation Partners	Probable Costs	Potential Funding Sources
Location Specific Projects					
Mid Term	Stromboli Corridor Community Center	Establish new Community Center as focal point of catalyst area.	City of North Charleston, LAMC	TBD	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction costs
Mid Term	Chicora tank farm park	Develop community park on Chicora tank farm site.	City of North Charleston, LAMC	$5,000,000	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction/rehab costs
Mid Term	Riverfront Park expansion	Expand riverfront park into the Noisette Creek Path.	SCDHEC, City of North Charleston	$350,000	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction/rehab costs
Near Term	Hampton Park improvement	Improve Hampton Park access and traffic patterns.	City of Charleston	$100,000	- Grants and donations - Partnerships with nonprofits, institutions and private entities - TIF for construction/rehab costs
Mid Term	Cooper River access	Create public access and park at the Cooper River as an eastern terminus to East Montague Avenue.	SCDHEC, City of Charleston, City of North Charleston, Charleston County	$150,000	- Grants and donations - Partnerships with nonprofits, institutions and private entities
Near Term	Skate Park	Develop a skate park west of Meeting Street under and between the I-26/US-17 interchange.	SCDOT, City of Charleston	$50,000 - $75,000	- Grants and donations - Partnerships with nonprofits, institutions and private entities

Figure 8.4 Action Plan

The Action Plan

The second most important factor in successful implementation of a long range plan, after the establishment of an accountable coordinating entity, is to have a detailed Action Plan that becomes the blueprint for implementation of short, mid and long term priorities and actions.

The Action Plan (see **Figure 8.4**) cites recommendations for the specific projects identified in the planning process. It sets forth specific objectives, tasks, priorities and time frames for getting the plan done. In many ways, the Action Plan is the most critical component of the Master Plan. More than the Master Plan itself, the

Economic Development and Revitalization Strategies

The starting point of an effective strategy for economic development and revitalization is the physical plan that lays out a framework for development in the Neck area. Besides establishing a rational plan for land use, transportation, and environmental sustainability, the plan also presents a compelling vision for the Neck area's future that will guide investment. The developers, investors, companies, institutions, and other stakeholders that will be participating in the area's revitalization will be looking for guidance and inspiration in conceiving and executing projects that will advance the vision. The plan components described earlier in this document provide a framework of catalyst area developments, transportation system improvements, land use and urban design principles, and details related to community structure, environmental issues, and goods movement that establishes the "road map" for long-term redevelopment and revitalization of the Neck area. With this map available, participants will be more confident in taking actions that advance their own interests and collectively contribute to the realization of the Master Plan vision.

With the physical plan setting the context and providing the vision of what the future Neck area may look like and how it may function, the economic development and revitalization strategies focus on creating economic opportunities, channeling their impacts to increase local prosperity, and managing the process effectively. This approach is organized into three elements: development product, programs, and organizing to implement revitalization over time.

In a built-up place like the Neck area land acquisition is often very challenging for developers due to cost, environmental conditions, demolition or infrastructure needs, and/or the need to assemble multiple small properties in order to obtain a parcel of sufficient size.

Development Product

In order to capture new investment and attract new residents and businesses, the Neck area must be able to offer a supply of development "product" that is competitive in multiple market sectors at the regional, state, and even national levels. This product comes in many forms, but essentially represents the basic units of real estate development and economic activity: land, homes, stores, work spaces, etc. It is through new development product that the Neck area can attract new residents, new businesses and jobs, and new consumer spending by residents and nonresidents alike. The strategies listed below are intended to encourage and facilitate the creation of development product across a variety of key types.

Developable Land

The availability of suitable land is the starting point for all new development. In a built-up place like the Neck area, land acquisition is often very challenging for developers due to cost, environmental conditions, demolition or infrastructure needs, and/or the need to assemble multiple small properties in order to obtain a parcel of sufficient size. There are several strategies that can help developers find the sites they need.

- **Address brownfields.** Brownfields are contaminated sites that usually present significant challenges to redevelopment. A comprehensive inventory of brownfields in the Neck area should be maintained that includes as much information as available about their past uses, current conditions, and remediation needs. Simply tracking such parcels can facilitate their redevelopment, and key parcels can be prioritized for attention. A local fund could be established that provides financial assistance for the initial assessment and/or cleanup of eligible sites. Local staff can seek similar assistance from state and federal brownfield programs, which are often competitive grants. Given the complexity of brownfield redevelopment, expedited plan review and approvals, reduced development fees, and other incentives can help developers bring projects to fruition. It should also be noted that the LAMC plan recommended Phase 1 Environmental Site Assessments (ESAs) of a series of candidate sites within the LAMC study area. In addition, the City of North Charleston has recently received EPA brownfields grant funds that will allow for Phase I and Phase II ESAs to be completed for various properties within the City to determine sites where no remediation actions would be necessary or to help further refine the cleanup priority list. The Neck Master Plan presents another opportunity to bring these efforts into congruence and develop a consolidated brownfields assessment and remediation approach to the entire area.
- **Monitor the local land market.** Local staff should monitor the land market in the Neck area on a regular basis in order to stay current on the ownership of large and important parcels, track any new land assemblage activity, and build relationships with major landowners and key real estate brokers. This knowledge base will help with planning and implementation activities, but it also can be provided to developers interested in the Neck area to encourage and facilitate land acquisition.
- **Help maintain a healthy land market.** Public policies and local actions can help discourage excessive land speculation that drives up prices and can

Local staff should stay "in the know" about the local land market for potential planning and implementation activities as well as to help facilitate land acquisition.

produce negative impacts on neighborhoods that also hinder redevelopment. Code enforcement should be robust to require adequate maintenance by owners. Tax delinquencies, code violations, and other indicators of potential property abandonment should be tracked in order to identify sites where public intervention may be desirable or necessary.

- **Explore land banking**. Land banks are legal entities that are set up by jurisdictions or nonprofit community development organizations to buy and hold land for future redevelopment; typically vacant, abandoned, or tax-delinquent properties that may be a hindrance or discouragement to private investment. The key benefit of land banks is that they can acquire properties before they are ripe for development when prices are lower, and make those properties available to developers later on. Informal land banking has been exercised in the Neck area already, mainly consisting of strategic properties being acquired by the locality and then resold to private developers in order to further community development goals. However, new state legislation would be required in South Carolina to allow municipal land banks that systematically acquire, manage, and dispose of a large number of properties for community revitalization purposes, or a nonprofit entity could potentially be created. Technical resources are available to assist in the financial and legal structuring of land banks.
- **Consider strategic land acquisitions.** Even without a land bank, municipalities and community development organizations can acquire properties to further redevelopment objectives when opportunities arise. Such decisions are not to be made lightly given the costs and risks involved, but these should be balanced against the strategic value of the land in question. In general, such acquisitions should be made with a defined ownership time frame and disposition strategy in mind.
- **Align zoning with the Master Plan.** Inappropriate zoning can be as much of a barrier to redevelopment as physical constraints or environmental contamination, because it creates additional costs and risks for a developer seeking to change its designation. As illustrated in Chapter 3, Setting Context, both Charleston and North Charleston utilize conventional zoning codes, which generally separate residential, commercial and industrial uses, creating the requirement for increased travel time and distance from one area to another.
- Existing zoning in the Neck area should be evaluated to identify possible conflicts with the Master Plan, and revisions or clarifications made as necessary. In particular, rezoning strategies should be explored for each catalyst site area to determine the best zoning framework that would spur redevelopment according to the Master Plan. This may include PUD or mixed use zoning designations aimed at fostering TOD development and a mixing of uses, both horizontal and vertical, as well as form-based codes. Design Guidelines can be created as supplemental materials to provide additional illustration and clarity about what is expected of developers in specific locations, providing them greater certainty when initiating projects. Design Guidelines are included as Appendix F in this report as guidance in designing and executing projects that will advance the Partnership for Prosperity vision.

> *Strategies that facilitate the development of mixed-use centers are necessary to create urban development products in sufficient quantities to create new places and spark change in the Neck area.*

Mixed-Use Centers around Transit

The Master Plan is centered on a series of catalyst areas where development is generally concentrated around future transit stations and reflects a mix of uses that puts more activities within walking and bicycling distance. While this is a traditional approach to urban development, it is currently not as prevalent for new development in much of the Charleston region, including the Neck area, where auto-oriented suburban patterns predominate

Incentives, such as density/intensity bonuses for projects adjacent to transit stations, may help new projects begin.

- **Create interim and final zoning for transit-oriented development.** High quality transit service is not yet present in the catalyst areas, but their potential for Transit Oriented Development (TOD) must be preserved until transit is available and market demand for walkable, higher density development exists. Given the time frame involved, it may be necessary to create interim zoning for future

transit station areas to ensure that new development of inappropriate land uses and low densities does not occur. This interim zoning would be set to transition to final zoning that is aligned with TOD principles.

- **Outreach to developers and lenders.** TOD and mixed-use development are still fairly new in most regions, and Charleston is no exception. It will likely be necessary to promote these concepts with local developers and lenders to educate them on the opportunities they represent and the differences with traditional suburban development practices. Experienced developers may need to be actively recruited in order to communicate what the Neck area has to offer. Case study examples of successful mixed-use projects in the region or South Carolina may be useful in telling the story of development opportunity.
- **Development incentives.** New projects in the catalyst areas may need assistance through incentives to be feasible, especially in the early years of redevelopment in the area. Such incentives may include expedited plan review and approval, as well as reduced development fees for projects that align with the Master Plan objectives. Projects in key locations, particularly those adjacent to transit stations, could be worthy of density/intensity bonuses that can enhance developer profitability while maximizing activity levels near the station.
- **Infrastructure financing.** Successfully redeveloping the catalyst areas around transit will require significant enhancements to the pedestrian environment and other infrastructure improvements to promote connectivity and transportation access. Funding those improvements will probably require one or more defined revenue sources to supplement what may be available from other public sources. Creating tax increment financing (TIF) districts around the future transit stations would be a natural use of a common redevelopment tool. Special tax and/or assessment districts also are methods where infrastructure projects could be essentially self-financed by the development that uses them. More broadly, a mobility fee for the entire Neck area could be used to fund transportation infrastructure that facilitates TOD. Mobility fees differ from conventional road impact fees in that they enable funding for non-roadway improvement projects and are scaled to account for different trip characteristics by geographic location. State enabling legislation would likely be needed to support a shift toward this type of funding program.

More and Diverse Housing

Strategies for increasing the production of new housing will be an important component of revitalization in a Neck area that has seen its population decrease over the past two decades. If its population is to grow, the Neck area needs not only more housing overall but also housing of a variety of types and price levels that meet the demands of a changing residential market and an increasingly affluent region. This emphasis on new production would be supplemented by programs addressing the improvement and maintenance of the existing housing stock (discussed later in this chapter).

- **Reduce barriers to development.** Existing zoning and building codes may contain requirements that unintentionally present barriers to the development of new housing, particularly higher density multifamily units that may not have been commonly seen before. One of the most common is excessive minimum parking requirements, especially where transit service is available, that increase construction costs considerably. Others may be excessive setbacks, height requirements, or restrictions on construction methods or materials. Existing codes should be reviewed to identify and address any requirements that may pose an unreasonable barrier to economically feasible new housing development.

Horizon Village is a successful example of a mixed-income housing development.

- **Encourage new mixed-income and affordable housing.** Zoning can also be used as an incentive to facilitate the development of mixed-income housing, where market rate and affordable units are combined in the same project. Inclusionary zoning requirements can set the targets for affordable housing provisions, and density bonuses can address the issue of generating sufficient profitability for developers when providing affordable units. Expedited plan review and approval, reduced development fees, and other regulatory relief can be used to assist all affordable housing projects, both mixed-income developments and those with only affordable units such as Low Income Housing Tax Credit projects and other subsidized projects. Affordable housing development typically works on very tight profit margins, so any public sector actions that can reduce development costs will make such projects more financially feasible. An important public financing tool for affordable housing is the federal HOME investment Partnership Program, which allocates money through the South Carolina State Housing Finance & Development Authority to local jurisdictions and other grantees. HOME funding can be used to provide home purchase or rehabilitation financing assistance, build or rehabilitate rental or ownership housing, or for other related expanses such as site acquisition, demolition, and payment of relocation expenses. Affordable housing development often needs multiple fundning sources, so HOME finds can be used in conjunction with other federal and state housing programs as well as with private lenders. The South Carolina Housing Trust is the primary state-level source of affordable housing financing.

> *The Neck area's central location and regional accessibility make it an attractive employment location, and the improvements proposed in the Master Plan will only enhance its appeal.*

- **Facilitate the restarting or repositioning of existing proposed projects.** As was common across the country, a number of development projects in

the Neck area were put on hold after the financial crisis and real estate market downturn disrupted economic conditions. Magnolia and Ashley River Center are two prominent examples of major mixed-use projects that have residential components and could be the sources of significant amounts of new housing product in the Neck area. Given the time elapsed and shifts in the market, some projects may need to be revised and/or repositioned in order to move forward, and some of these necessary changes might be encouraged or facilitated by local governments – site plan changes, zoning adjustments, ownership transitions, etc. Projects in key locations with viable concept plans should be monitored to see if there are appropriate ways that local jurisdictions can help restart them.

- **Protect existing residential neighborhoods**. New housing development can be problematic for existing neighborhoods if it is not carefully planned for, especially when higher densities and multifamily products are envisioned. For this reason, the Master Plan focuses on the catalyst areas around future transit stations as the primary locations of new housing development. These areas will connect with existing neighborhoods, but would have different characters that are compatible with significant redevelopment. Neighborhood housing development would be characterized primarily by small-scale infill and rehabilitation of single-family dwellings. Strong design guidelines and careful review of all housing developments in the Neck area should be established to ensure neighborhood compatibility and housing quality.

Having a supply of appropriate work spaces such as high-tech and creative firms, conventional corporate and professional office space, and flexible spaces, will allow the Neck area to capture new investment and help stimulate the local economy.

Work Spaces

The Neck area is and will continue to be a major employment center. But to maintain its competitive position and provide new employment opportunities for local residents it will need to add more work spaces tailored toward shifts in the economy. While manufacturing and freight movement should remain strengths, a greater emphasis on spaces for high-tech and creative firms, conventional corporate and professional office space, and flexible spaces that can serve new and growing businesses will be necessary. Having a supply of appropriate work spaces will allow the Neck area to capture new investment and attract companies and employees that can stimulate the local economy.

Recognizing the importance of new jobs and investment to revitalization efforts, LAMC has advanced a number of possible actions aimed at increasing the supply of competitive work spaces in its neighborhoods. Several of the strategies described below are taken from LAMC's Revitalization Plan.

- **Establish and capitalize upon business/technology incubators**. Facilities that offer low-cost space, training programs, and other assistance to small, entrepreneurial companies can help grow the market for work spaces in the Neck area. These incubators can focus on technology firms, creative enterprises, or even local professional and business services or they can be more broad-based. The City of Charleston already has incubator programs and facilities focused on technology firms (the Digital Corridor) and life sciences operating within the southern end of the Neck area. A similar approach could be applied elsewhere in the area. Incubator tenants periodically "graduate" from their initial homes as they grow larger and need more space, and these companies would be prime candidates for work spaces in the Neck area.
- **Implement a business retention, expansion, and recruitment program**. Such a program would focus on office-using sectors and target all sizes of businesses from major regional employers to small local-serving service firms. The LAMC Revitalization Plan noted the importance of creating a professional services cluster, where medical, dental, legal, accounting, and similar occupations that grow with the local population and capitalize on proximity to major employment centers can thrive while serving local needs. When pursuing large, region-serving employers, close coordination with the Charleston Regional Development Authority (CRDA) and sometimes even the South Carolina Research Authority (SCRA) will be important to tailor strategies and identify potential sites that best meet the requirements of prospective companies.
- **Target government tenants as anchors/catalysts**. Government facilities are stable occupants and often less selective in their location decisions than private businesses. They can therefore be important early tenants in places that are still emerging as centers of office development. Landing a major anchor tenant early can often mean the difference between success and failure of a development project. Government agencies (at any level) can help jump-start development in parts of the Neck area that currently are not viable for market-driven investment.

- **Establish an office building renovation fund.** Existing buildings in the Neck area may be candidates for rehabilitation into modern work spaces, particularly smaller low-cost spaces that would be attractive to new and entrepreneurial businesses. Renovation funding could be made available to building owners as matching grants or low/no-interest loans. Alternatively, funding could be awarded directly to tenants for space build-outs as incentives for locating in the Neck area. Either way, the renovation fund would help to improve buildings and lower tenant occupancy costs. The funding could be widely available or targeted toward specific locations and/or types of tenant companies.
- **Strategic building acquisition and disposition.** As redevelopment occurs in the Neck area, there could be a danger of losing buildings that offer low-cost work spaces, interesting architectural features and historical character, and other elements that could be attractive to companies looking for unique work environments. Selected buildings could be candidates for public acquisition in order to preserve them until a viable use is found. They could then be renovated through other revitalization strategies or sold directly to developers or end users.
- **Explore and promote available project financing tools.** Two of the most commonly used place-based project financing tools that could help deliver new work spaces are Historic Tax Credits and New Markets Tax Credits. Buildings must be certified as historic structures in order to receive Historic Tax Credits, but this tool provides valuable assistance in funding the restoration and adaptive reuse of buildings that shape the character of established neighborhoods. Eligibility for New Markets Tax Credits is based on location within a qualifying census tract that generally has a low income or otherwise disadvantaged population. Nearly all of the Neck area is eligible for these tax credits. Both of these financing tools are intended for commercial, income-producing projects and are often used to finance the development of work spaces. Local staff should be conversant in both programs, familiar with properties that may be eligible or good prospects for development, and able to assist developers in learning more about the programs and applying for financing.
- **Encourage work space development in key locations and/or for targeted industries.** Similar to housing development, public sector actions can create private sector incentives for work space development activity. Expedited plan review and approval, reduced development fees, and other regulatory relief can be used to assist projects that deliver office space, research and development facilities, business incubators, and other work spaces. The incentives can be tailored to particular locations and/or industries to meet public goals and objectives.

> *Adding more retail and local services will help keep more spending within the local community rather than having it captured by other locations.*

- **Facilitate the restarting or repositioning of existing proposed projects.** Major on-hold development projects in the Neck area such as Magnolia and Ashley River Center also have office components that could deliver new work spaces in the Neck area. As was described in the housing strategies section, these projects should be monitored to see if there are appropriate ways that local jurisdictions can help restart or reposition them.

Plan for walkable retail spaces to be built in key catalyst sites in the Neck area.

Retail and Local Services

Residents and employees both need places to shop, so new spaces for retail and local services will be needed in greater amounts as redevelopment and revitalization of the Neck area occurs. The area is positioned in between two major existing retail clusters (the Rivers Avenue/airport corridor and Downtown Charleston), and it seems unlikely that a new region-serving retail center could be developed. However, an influx of new residents and workers will drive demand for more shopping, dining, and services, and existing residents who have been underserved in these areas in the past will contribute their spending power.

- **Walkability improvements in key commercial districts.** Shoppers are increasingly gravitating to places where they can walk comfortably and find a wide range of goods, services, and experiences. While the auto-oriented strip mall is not dead yet, places where people can park once and shop extensively, or arrive by transit or bicycle, are performing well for retailers. With the Neck Master Plan oriented around walkable, transit-oriented catalyst areas, it will be important to make sure that areas designated for commercial development are conducive to non-automobile modes of travel. Narrower streets, wider sidewalks, bike lanes, streetscaping, wayfinding signage, street lighting, and similar improvements that are part of a "complete streets" design approach have all been shown to revitalize retail districts. "Authenticity" is an increasingly important draw for retail and residential markets, and much of the Neck area has established residential and non-residential areas that reflect the area's history, urban character and diversity. With the right capital investments and support programs focusing on safety and accessibility, those traits can provide positive economic benefits without all of the development constraints of the Charleston Historic District.
- **Identify, preserve, and manage key retail sites.** The success of retail businesses is highly dependent on location, visibility, and customer access. As the Neck area redevelops and revitalizes over a long term time frame, it will be important to identify the key sites where retail is likely to be most successful within the Master Plan framework and work to preserve them, since some sites may not become viable until years later. These key sites should be

managed through zoning and design guidelines to ensure that elements such as walkability, parking, loading, signage, and other details that affect retail operations are implemented effectively and the retail development blends well with other uses and fits appropriately into the neighborhood fabric. A good example of this is the master revitalization plan for Shipwatch Square. In addition to continuing the local assistance for new businesses within the shopping center, the City should look to tie the Shipwatch Square planning into the overall Neck Master Plan vision for that catalyst area specifically.

- **Evaluate the current supply of land zoned for retail.** Much of the land along major arterial roads is typically zoned for retail and related uses, without regard for how much land is actually needed to satisfy local demand. An oversupply of retail land can lead to excess building space and high vacancy rates that hurt landlords and make an area less attractive for investment. In particular, the Urban Land Institute recommends reframing the zoning along stale retail corridors by creating "pulses" of higher density mixed use zoning at key nodes or intersections and revising the strip commercial zoning between these nodes to encourage more high density housing. Local staff should seek to optimize the amount of retail zoned land in the Neck area through market analysis and prioritization of key retail centers while reducing the supply in marginal locations through rezoning.
- **Establish a retail renovation fund.** As with office buildings, there may be retail buildings in the Neck area that with assistance could be renovated to become more competitive business locations. Renovation funding could be made available to building owners as matching grants or low/no-interest loans to perform façade and/or interior rehabilitation. Funding also could be awarded directly to tenants for space build-outs in either existing or new buildings as incentives for locating in the Neck area. Tenant assistance could be restricted to local and independent retailers who have fewer financial resources but add valuable diversity to the retail mix. Specific retail categories with strategic or community value also could be targeted, such as grocery stores or restaurants.
- **Explore and promote available project financing tools.** The two financing tools mentioned above, Historic Tax Credits and New Markets Tax Credits can also be used for retail projects. Local staff should be aware of any opportunities to make use of these tools and able to communicate them to prospective developers.
- **Create a retail recruitment and technical assistance office.** The LAMC Revitalization Plan identified a need for commercial district management program focused on retail revitalization in the area. Such an office would focus on providing incentive funding, technical assistance, and organization of local businesses. With a broader focus on the entire Neck area, it would be the logical implementer and manager of many of the strategies described in this section.

Programs

Achieving and sustaining local prosperity in the Neck area will call for long term efforts to connect existing residents and businesses with the benefits and opportunities generated by the development that is taking place around them. New development product will create economic activity, but many residents will need tools, training, and assistance to take advantage of the opportunities that emerge. Programs that address long-standing needs in the Neck area such as education, job training, and housing can equip residents to compete effectively in a revitalized local economy and succeed in one of the key economic centers of the region.

Good schools providing better educations are key components of the Neck area plan.

Education Improvement

Education is the fundamental basis for a competitive workforce and educational attainment is tightly linked with personal income. Good schools will be an important part of a revitalized Neck area, and more and better education will help residents share in the benefits of future development, especially job opportunities with new companies that locate there. The LAMC Revitalization Plan directly addressed the need for education improvement in the Neck area, and described a number of strategies for tackling the issue. The Master Plan should support this approach.

- Develop a more robust parental education program in Neck area schools.
- Reform Neck area School Improvement Councils.
- Build partnerships to lobby for increased resources for early childhood education.
- Build community awareness of existing early childhood development programs.
- Develop and strengthen the partnership between Charleston County Community Education and Wings for Kids.
- Develop a publicity campaign on early childhood development resources.
- Integrate design principles into new school planning processes to emphasize community schools.
- Develop a parental education program modeled after the Harlem Children Zone's Baby College.
- Enhance high school curricula, including maritime industries training, career academies, and other cooperative linkages with area employers and industries.
- Expand and promote magnet schools and partial-magnet schools.
- Assist organizations exploring the establishment of charter schools.

JOB AND SKILLS TRAINING

Only a small percentage of Neck area residents currently work at companies located in the area. To increase this percentage significantly, residents will need access to job and skills training that prepares them for the higher value positions in manufacturing, technology, and logistics that the Neck area is well positioned to attract. The redevelopment of the Neck area itself also will generate job opportunities that require advanced skills in construction, engineering, and other technical subjects. Building a skilled workforce in the Neck area will benefit both companies and residents by increasing productivity and quality of life through minimizing commuting time. Even if residents do not end up working in the Neck area, access to training can help them secure better paying jobs throughout the region.

> *Building a skilled workforce in the Neck area will benefit both companies and residents by increasing productivity and quality of life through minimizing commuting time*

The following items should be pursued by various stakeholders as ways to broaden the level of participation in local economic opportunities by Neck area residents:

- Develop a Maritime Training Institute as described in the LAMC Revitalization Plan
- Coordinate with LAMC initiatives like the Local Vendor/Contractor program
- Work with the Trident One Stop Career Center to improve their visibility and availability within the community
- Apprenticeship Carolina is a program of the South Carolina Technical College System that helps create and manage employer-sponsored training programs. For no charge, companies can set up demand-driven customized programs for growing their workforces by taking on apprentices screened and registered by Apprenticeship Carolina. The apprentices gain practical on-the-job training and contribute to companies as they learn. Coordination with this program can help register local job-seekers as apprentices and encourage local businesses to create apprenticeship programs. Apprenticeship programs in the Neck area can be aligned with state, regional, and local economic development strategies by emphasizing key industries:
  - South Carolina high-demand industries: advanced manufacturing, construction trades, energy, health care, and transportation/logistics
  - Charleston region industry targets: advanced security and IT, aerospace, biomedical, and wind energy
  - Neck area redevelopment industries: construction, engineering, environmental remediation, etc.
- Coordinate with opportunities created at or spun off from the Clemson University Restoration Institute (CURI) research park located in the Navy Yard.
- Coordinate with Metanoia and any other non-profit, faith-based or community initiatives that are working with residents and businesses, and ensure that local efforts share information and success stories.
- Negotiate community benefit agreements (CBAs) for major development projects to obtain local hiring and wage commitments.

HOUSING

As new housing is built in the Neck area, it will be important to maintain the availability of low and moderate income housing.

Increasing housing opportunities in the Neck area will require more than producing new development product. While new product will be important to attract new residents to the area, programs also are needed to increase the availability of affordable, quality housing to current residents and maintain that availability to low and moderate income households as redevelopment occurs, neighborhoods improve, and housing costs rise. LAMC has made affordable housing a centerpiece of its Revitalization Plan with the Model Blocks program, and the Master Plan should support this approach and other neighborhood-oriented programs that can make housing more attainable, such as:

- Support LAMC's Model Blocks program, which develops owner-occupied single-family homes on vacant and underutilized lots, and preserves long-term affordability through a Community Land Trust.
- Explore land banking of troubled single-family properties to build a lot pipeline for future development and assist nonprofit developers with holding costs.
- Work with owners of existing affordable multifamily rental properties to preserve affordability through tax abatements, renovation and energy efficiency grants or low-interest loans, or even acquisition.
- Provide homeownership training and financing assistance to current residents, particularly those who are renting but wish to purchase a home.
- Use code enforcement and financial incentives to encourage home rehabilitation by owners (both owner-occupants and investor-owners).
- Create a funding pool for Deferred Payment Loans to finance home rehabilitation by current owners.
- Create a marketing program to promote housing opportunities to middle income buyers.

- Work with major area employers to establish employer-assisted housing (EAH) programs that can provide homeownership counseling and financial assistance to help employees live closer to work.

Implementing Revitalization over Time

Effective organization will be important to keeping the redevelopment of the Neck area on track over the long term. Clear responsibilities for plan and program implementation should be established. For economic development and revitalization, these responsibilities should be undertaken primarily by one convening, organizing, and implementing entity to ensure close coordination between related initiatives and opportunities for leveraging resources across multiple activities. As discussed above, a standing partnership of the cities, port, SCDOT and other stakeholders should be established as the **Partnership for Prosperity** that has overall accountability for implementing the vision and Master Plan for the Neck. Under this umbrella entity, a number of new implementing initiatives may need to be established. The exact structure, mission and composition of such initiatives will need to be carefully developed and agreed to by all in the partnership.

LAMC occupies an important place in the core of the Neck area and with the creation of some new entities it can focus on specific revitalization programs that will advance its own Revitalization Plan as well as the Master Plan. Other new entities can address specific areas and issues. LAMC is working to implement its Revitalization Plan and one of its recommended capacity-building actions is the creation of two new entities focused on revitalization and housing development. One is a Community Development Corporation (CDC), which serves as the lead developer on neighborhood projects, coordinates programs, and seeks and receives funding from various sources. The CDC is the lead agent for LAMC's redevelopment and revitalization activities. The second entity is a Community Land Trust (CLT), which receives and holds land in LAMC neighborhoods for the purposes of maintaining the long-term affordability of housing, either existing homes or new homes developed by the CLT/CDC or others. The CLT works in tandem with the CDC within a defined organizational relationship; the LAMC Revitalization Plan lists five possible approaches to structuring their interaction. If LAMC is willing, its CLT could expand its area of activity to encompass the entire Neck area. Otherwise, it may be desirable to establish another CLT to address affordable housing needs in the non-LAMC portions of the Neck area.

> *"There will be a wide range of issues on the Partnership for Prosperity's agenda, but one of the most important means of helping Neck area residents share in the benefits of redevelopment will be an emphasis on improving education and access to job training."*

In order to preserve key sites for future redevelopment and manage the availability of suitable land in the Neck area over a long-term time frame, it may be necessary to create one or more land banks to acquire, prepare, hold, and dispose of properties. The land banking mission can focus on both housing and commercial/industrial uses, since there will be a need for both over the course of the Neck area's redevelopment. A land bank holds and conveys land for redevelopment, but is not the permanent owner. The exact nature and organization of the land bank(s) in the Neck area will depend on legal and strategic details. Municipally operated land banks exist elsewhere in the U.S., but would require enabling legislation in South Carolina. Creating a nonprofit land bank that covers the entire Neck area also is an option. The land bank(s) could be organized under the auspices of the Partnership for Prosperity, and would work closely with LAMC's redevelopment and housing entities.

There will be a wide range of issues on the Partnership for Prosperity's agenda, but one of the most important means of helping Neck area residents share in the benefits of redevelopment will be an emphasis on improving education and access to job training. To demonstrate the importance of this subject, an Education and Job Training Committee should be established that has a clear mission, role, and activities within the larger entity. The committee would work with key stakeholder organizations, service providers, and institutions such as LAMC, Trident Technical College, Charleston County Schools, Apprenticeship Carolina, and CURI. It would also perform an important liaison function with area employers, identifying the sorts of skills and employees they need and communicating those needs to the education and training providers.

Implementing Transportation Projects

The BCDCOG has the authority under state and federal law to perform the transportation planning and programming functions of the Charleston Area Transportation Study (CHATS), the metropolitan planning organization (MPO) for the Charleston Urbanized Area. BCDCOG carries out those responsibilities in cooperation with the South Carolina Department of Transportation (SCDOT), the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

CHATS
Long Range Transportation Plan

CHATS serves 800 square miles comprised of the Tri-County region's Charleston–North Charleston–Summerville Urbanized Area. Generally, the study area

contains of all the land expected to be urbanized within the next 20 years. It now consists of portions of all three counties in the BCD Region. CHATS is governed by a 47-member board representing governmental and transportation-related organizations from throughout its coverage area.

As the MPO, the CHATS committee structure provides the forum for cooperative decision making in developing regional transportation plans and programs to meet changing needs. It is composed of elected and appointed officials representing local, state, and federal governments or agencies having interest or responsibility in comprehensive transportation planning.

Transportation projects identified in the Partnership for Prosperity Master Plan must be included in the CHATS adopted Transportation Plan to be eligible to receive federal transportation funding. The current CHATS 2035 Long Range Plan sets priorities for highway, transit, bicycle, pedestrian and related transportation projects throughout the region. A new updated plan will need to be developed and adopted by 2015, but the plan may be amended at any time to add or modify projects. Furthermore, CHATS programs fund transportation projects from federal, state and local revenue sources through its five-year Transportation Improvement Program (TIP), which may include money allocated for various project phases from planning and feasibility studies to engineering, right-of-way acquisition, final design and construction.

Impacts of MAP-21

Recent changes in transportation policies and funding programs at the federal level will have a substantive impact on CHATS and SCDOT's process of planning and setting priorities for funding of regional transportation projects. The new law, known as MAP-21 (Moving Ahead for Progress in the 21st Century), merges the number of transportation funding programs, introduces new planning responsibilities and eligibility requirements, raises the importance of freight planning, increases funding for safety, and streamlines the transportation development process. Those actions have the effect of raising the level of accountability for states and metropolitan areas, and increasing competition for project funding within MPOs like CHATS. While additional policy guidance and Congressional funding authorizations will influence how the new law is ultimately carried out in coming years, MAP-21 mandates that CHATS develop and apply a performance-driven, outcome-based transportation planning process that has significant implications for the next update of its adopted Long Range Plan and other aspects of its continuing transportation planning process.

Essentially, MAP-21 eliminates most discretionary funding programs and merges set-aside funding for popular programs like Enhancements and Safe Routes to Schools into a new formula program called Transportation Alternatives with greater flexibility. Similarly for transit projects, MAP-21 eliminates set-aside funding for the Small Starts program (for projects below $250 million), meaning that smaller Bus Rapid Transit and similar projects must now compete within the larger pool regions seeking funding through the New Starts program. Most notably for CHATS, MAP-21 mandates a performance driven, outcome-based planning process that requires MPOs to work in partnership with the state and transit providers such as CARTA to establish a vision, agree upon performance measures that align with national goals, statewide measures and transit system performance measures, and define performance targets to achieve desired outcomes for the region. Most notably, MAP-21 also increases federal funding for safety and freight mobility projects, and expands the scope and funding of the Transportation Infrastructure Finance and Innovation Act (TIFIA), a program that applies federal credit assistance to eligible transportation projects. TIFIA offers more favorable terms for projects in rural areas.

The federal funding priority for freight mobility projects is a significant opportunity for the Neck area. MAP-21 incentivise improvements in freight mobility by increasing the federal share of funding up to 95 percent if a project is included as part of SCDOT's statewide freight plan, which is under development. Many of the freight-related projects identified in the Master Plan would be eligible, including those that help reduce or eliminate freight impacts in residential neighborhoods. They first must be included in the statewide freight plan.

In essence, MAP-21 reflects fiscal constraints at the federal and state levels and results in a transportation law that reflects a demand for a more competitive, performance-based process for project selection and funding, and a desire for greater flexibility among stakeholder agencies. The changes highlight a need for aligning broad-based coalitions and resources to respond to the shifting roles and relationships at the federal, regional, state and local levels. MAP-21 gradually, but clearly, raises the bar for regional and local organizations to advance projects in this more competitive, fiscally challenged environment. To succeed, CHATS and its partner organizations must develop a stronger case for transportation projects and tell a more effective story about their value and benefits toward meeting desired regional outcomes and national goals.

Economic development and freight mobility will need to be linked with development of the 2040 RMP's regional framework vision and long range transportation plan. The process will need to engage freight operators and include identification of economic catalyst areas and the supporting transportation and development activities that will help diversify and sustain the region's economic vitality over the long term. It will be essential to examine the use of rail corridors that link air and seaports, as well as trucking intermodal facilities. MAP-21 provides increased federal funding for freight mobility projects that support economic vitality, including safety and mobility improvements.

There are significant funding challenges for transportation in the nation and South Carolina as declining gas tax revenues from improved fuel efficiency, decreased

travel in recent years due to the economic recession, and lack of indexing to inflation fail to keep pace with an ever-growing and changing backlog of funding needs. Declining state revenues and reduced purchasing power of the Transportation Trust Fund due to inflation results in a growing gap of MPO funding shortfalls.

Transportation Planning, the Environment and Economic Development

As articulated in the Partnership for Prosperity Master Plan, it is important to talk about economic development and environmental or livable community goals as part of the vision for transportation so that it is reflected in criteria for setting project priorities and project selection for funding. It is essential for CHATS to coordinate and have a dialogue with the land use planners from each government agency to avoid disconnecting transportation, livable communities and economic development. This needs to be reflected in agreed-upon measures, benchmarks and targets that are used by SCDOT, CARTA, local agencies and CHATS.

Land use change follows transportation investments. Freight and economic vitality are critical from a regional standpoint, and the Neck Area Master Plan articulates a clear vision and shared plan for strategic economic assets like the Port, intermodal facilities, catalyst areas and existing employment, commercial and tourism centers. An example of how this might work is creating a database for trucking and intermodal facilities, enabling CHATS, state and local partners to have the ability to identify and plan for the best available sites for freight and how transportation serves them.

Agency Coordination and Integration in the Regional Planning Process

Even with MAP-21 there remains the issue of who determines the design of transportation projects and how to reach agreements on that design when substantial local money is involved for a project on the state highway system. There is a need for agencies and their leadership to be involved in the early stages of project conceptual planning to flesh out the possibilities and potential conflicts. MAP-21 makes it increasingly clear that both vertical and horizontal alignment of plans and policies is increasingly important for project design and funding agreements. For any agency, early communication leads to assistance with funding for projects rather than missed opportunities.

A Sustainable Neck

The concept of a sustainable community today has become a reality that is increasingly seen as a competitive advantage in attracting high quality businesses to a community and in protecting the long term quality of life for the residents. Sustainable communities operate compatibly with the environment, using resources that can be regenerated where possible. These communities reduce harmful waste, either re-using materials or discharging them safely back into the natural environment. Sustainable communities create environmental, economic, and social conditions that support the ability of future generations to meet their needs and make plans and decisions that balance the three elements of the "triple bottom line:" economic prosperity, environmental quality, and community quality of life.

> *"Sustainability is not a trend, but a way of life that we embrace to help preserve our future."*
> *- City of North Charleston Mayor Keith Summey*

With the goal of making the Neck area a place and a destination in its own right, there is an opportunity to also make it a newly sustainable and healthy place by cleaning up the existing built environment and restoring and reestablishing the natural systems and processes that underlie the built environment. Furthermore, there is an opportunity to leverage existing environmental and sustainability initiatives in the area and extend them into the implementation of the Partnership for Prosperity plan.

The City of Charleston is undertaking a "Charleston Green Initiative" to set goals for the City of Charleston to reduce CO2 emissions by seven percent below the 1990 levels. The city's "Staff Green Team" and the "Charleston Green Committee" have been tasked with greening the city. In addition, North Charleston has moved towards greater sustainability with several green initiatives through the Charleston Area Convention Center, numerous green businesses and environmental improvements. Further, the LAMC plan implemented a number of targeted environmental initiatives, such as a $1.2 million grant from the National Institute of Environmental Health Sciences in order to conduct a four year environmental monitoring program specifically targeting the seven LAMC neighborhoods.

Sustainability should be a core consideration in the implementation of the Neck area Partnership for Prosperity plan. In particular, the long time horizon for this type of plan for a large and diverse area argues for special attention to sustainability because of the need for showing long term benefits that accrue to all stakeholders over a very long time frame. **Figure 8.5** shows four key dimensions of sustainability that should be considered in assessing implementation actions for this Master Plan. They are the "lenses" through which proposed projects and actions should be viewed to ensure a long term and sustainable approach to the implementation plan:

Specific projects and implementation actions that address sustainability are listed in more detail in the Implementation Matrix in this report.

Dimensions of Sustainability	Questions to consider
Resiliency	Will the action improve the area's resiliency in terms of responding to changing economic conditions? Will it strengthen and diversify the current local economy? Does it increase the area's resistance and responsiveness to natural or man-made disasters?
Equity	Does the action accrue benefits equally to stakeholders in the region – if not equally, are there any groups that are specially disadvantaged by the action? Are costs (including environmental and social) being borne by those who receive the benefits of the action?
Longevity	Does the proposed action consider the impacts and benefits over the long term, i.e. beyond the current generation? Will the benefits of the action lay a foundation for long term success?
Community	Does the action consider the immediate impacts on the surrounding community and its residents and stakeholders? Does it strengthen the long term viability of the local community?

Figure 8.5 Sustainability Actions

Accessibility Analysis

As a way to assess the viability and value of the proposed Master Plan for the Neck, an analysis of the improvements to accessibility in the study area provides the ability to identify measures and targets for monitoring progress toward achieving some of the key desired outcomes for the Neck's future physical form. From the community and the stakeholder input throughout the project, improving accessibility was one of the major and recurring themes. **Figure 8.6** details how accessibility is interconnected to values of the Neck area. Accessibility entails various aspects that the public and stakeholders defined in community forums to guide development of the Master Plan, including:

- Improving overall neighborhood accessibility
- Improving access to transit, walking, biking and other non-automobile travel modes
- Improving accessibility to employment, education and recreation
- Improving overall connectivity of the street network

To assess those aspects of accessibility that can be quantified, the following Accessibility Analysis was conducted on the project area as it is today and as it could be in the future if the improvements and target growth areas defined in Master Plan occur as planned. This analysis builds on the work completed to establish a baseline set of accessibility measures in the first phase of the study and uses the same methodology to look at accessibility in the study area at buildout of the plan.

In addition, this analysis looks at two scales. First, the study area as a whole is

Figure 8.6 Diagram from the Vision Process for the Master Plan

examined for the larger project context; then, the same analysis is applied to one-mile circles around each of the premium transit (light rail, BRT or commuter rail) station areas identified in the study. The value of this more detailed scale accessibility analysis – in addition to corresponding closely with the original catalyst areas proposed – is that it will inform future transit market studies that will be looking at the ultimate viability of premium transit in the Neck. Portions of this accessibility analysis will show potential buildout of employment and population in the station areas as well as the improved access to the stations by walk and bike modes. This information can be useful to the BCDCOG and its agency partners to identify targets for jobs, households and transportation accessibility improvements, and measure progress toward achieving them over time.

Accessibility

How Accessibility was Defined

Most definitions of accessibility in current transportation planning have to do with the density of destinations or activities in a given area. **Figure 8.7** shows the area used for testing accessibility in this study. When looked at this way, accessibility is a necessary complement to mobility because mobility looks exclusively at the ability to move from place to place, without looking at the destinations or activities that are being connected. Mobility measures, as a result, have tended to focus on a network and on the relationships between the capacity of the network and the volume of trips on that network. Very common measures of mobility are such

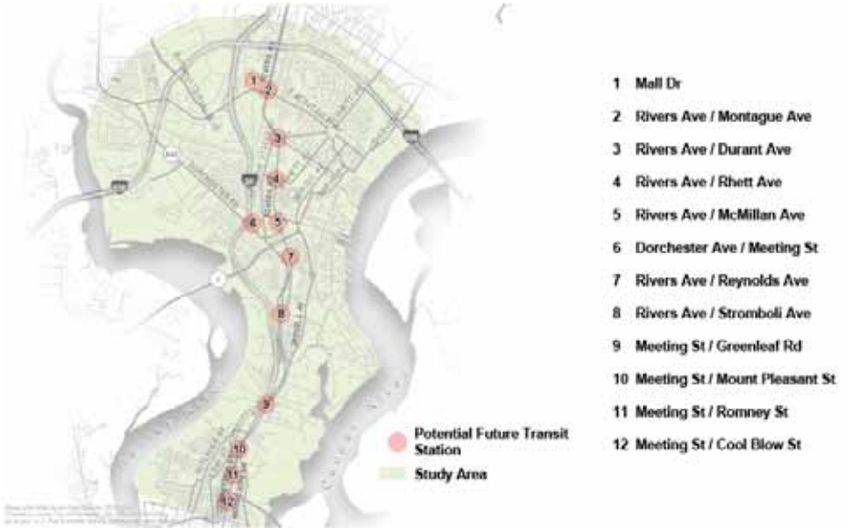

Figure 8.7 Map of the geography used for testing Accessibility - the study area as a whole as well as potential high capacity transit station areas

things as the ratio of volume to capacity or the ratio of travel times in a congested condition to travel times in a totally unconstrained condition.

Accessibility, on the other hand, has traditionally been viewed independently of the network – as simply the density of destinations or activities regardless of the network that is available to serve those activities. When defined in this narrow sense, accessibility is not so much a performance measure of the transportation network but of the surrounding land uses that are served by the network. Since the purpose of this analysis was to enable evaluations of the improvements in the transportation system as well as land use with the eventual buildout of the Master Plan, the traditional measure of accessibility as solely focused on land use will not work. Therefore, a definition of accessibility has been used for the purposes of this project that looks at both activities (land use) and network.

Accessibility Measures Used

The measures were calculated for general activity density/intensity as well as for diversity of uses and design features. While measures by specific mode were limited by the availability of data, measures for bicycle and transit accessibility were developed from available data. The following section outlines the final methodology used and the formula for each measure, as well as the data sources used. A primary consideration in assembling data was choosing measures that could be tested using datasets that are available at a project scale, and that could be obtained relatively easily either via a local government agency or other public source. After review, and consideration of known data source options, the following data sources and accessibility measures were identified.

MOBILITY AND ACCESSIBILITY

Accessibility (or just *Access*) is the ability to reach desired goods, services, activities and destinations (together called *opportunities*). Accessibility reflects the generalized costs (time, money, discomfort and risk) needed to reach activities.

Mobility refers to physical movement, including travel by walking, cycling, public transit, taxi, private automobile and other motorized modes. In general, increased mobility increases access. All else being equal, the more you can travel the more destinations you can reach. Mobility is evaluated based on travel distance and speed.

Cities and other major activity centers tend to have relatively poor *vehicle mobility* (due to congestion), but are economically successful due to excellent *accessibility* (activities that are clustered together and many travel options). This indicates that in the game of economic competitiveness, accessibility trumps mobility. Thus, the location and types of land use play an important role in how a community addresses its transportation problems and solutions. The Neck's future economic growth and quality of life for residents depends on both good mobility and good accessibility. The redevelopment objectives focus on fostering a variety of more accessible destinations in close proximity to residents. Its transportation network can help support those objectives.

Activity Density in Potential Station Areas

The first part of the analysis looked at the density of population and employment within the 12 proposed future station areas. Basic activity measures used were population and employment. A combination of population plus employment represents an activity unit (person or job), sometimes identified as the 24-hour population of an area. These three simple general activity measures –population, employment, and activity units (people + jobs) — measure the relative intensity of activities in a place. Intensity is especially important when considering investment strategies to improve accessibility and when considering an area's support for transit investments. These activity measures allow the relative intensity of places to be assessed and compared. In addition to intensity of activity, these general measures further illustrate a location's primary residential or employment emphasis.

Data Used:

Existing Population & Employment: 2008 Socioeconomic data from the CHATS Travel Demand Model.

Future Population & Employment: Renaissance calculations based on the Catalyst Area site plans from this report.

Land Use Diversity in Potential Station Areas

Land Use diversity is an important consideration for both transportation and community design assessments. Areas with greater diversity of land uses typically make for vibrant, active community contexts as well as reducing the number of vehicle trips necessary. Having housing, employment and shopping opportunities

in close proximity to each other allows some vehicle trips to be replaced by walking or biking, and also creates more support for local transit in a community. Land use diversity in this project was measured by calculating the number of different general land use types within ¼ mile of each station area for each of the 12 potential future station areas.

DATA USED:

Existing Land Use data: GIS dataset of parcel land use from Charleston County

Future Land Use: Renaissance calculations based on the catalyst area site plans from this report.

STREET CONNECTIVITY IN POTENTIAL STATION AREAS

Street connectivity is a key measure of accessibility from the perspective of multiple travel modes. A well connected and dense network of streets is critical to supporting a walkable and bikable community – especially when the majority of streets have low speed and low traffic volume. Connected street networks also distribute vehicular traffic more effectively and can carry more capacity than a non-connected street network for a given number of total lane miles. Connected street networks also provide capacity and support for emergency responder access and emergency evacuation. In the public input process for this project, street connectivity was identified as a critical issue that needed to be addressed.

One of the key goals in the design of the catalyst areas in this project has been to improve street connectivity in each neighborhood. The Master Plan for each catalyst area shows extensive improvements to the local street grid with new neighborhoods developed around a system of small walkable blocks and neighborhood streets. The measures analyzed show improvements in street connectivity at project buildout, particularly at the scale of each catalyst area.

Street Connectivity was calculated by using the road centerline file to look at all intersections. All intersections were assigned a value of 1 and all dead ends or cul-de-sacs were assigned a value of -1. To obtain the value for connectivity, the intersection values were summed within ½ mile of each station area for each of the 12 potential future station areas.

DATA USED:

Existing Street Connectivity: GIS dataset of road centerlines from Charleston County.

Future Street Connectivity: Renaissance calculations based on the catalyst area site plans from this report.

BICYCLE ACCESSIBILITY IN POTENTIAL STATION AREAS

As a further measure of the road network, an analysis was conducted of the potential of the network to support bicycle accessibility within the 12 future station areas. While not a true measure of the actual bicycle suitability of the network (which would take detailed field work and user surveys), this measure looked at low speed roadways in the study area as being the ones that would most likely support bicycle access. It was calculated as the length of 20 & 25 MPH posted speed roadways within ½ mile of each of the 12 future station areas.

DATA USED:

Existing Bicycle Accessibility: GIS dataset of road centerlines from Charleston County.

Future Bicycle Accessibility: Renaissance calculations based on the proposed bicycle network from this report.

BICYCLE ACCESSIBILITY IN THE WHOLE STUDY AREA

Increasing bicycle accessibility to potential station areas will increase ridership.

In addition to the calculations of bicycle accessibility within potential station areas, a separate analysis was conducted that looked at system-wide improvements in bike accessibility in the study area as a whole. For this analysis, the total miles of bicycle facilities as a whole (off-road shared use paths plus bike lanes and other bicycle accommodations like shared lane markings) were summed within the study area – both existing and in the future. In addition to the total linear miles of bicycle facilities, an analysis was also conducted of the total population and employment within ¼ mile of the bicycle facilities – both existing and in the future. For the future population and employment, the COG travel demand model projections for 2035 were used outside the station areas and the Master Plan buildout projections were used within the station areas. While it is recognized that even relatively inexperienced bicyclists will travel farther than ¼ mile to access a bicycle network, keeping the geographic unit of measure constant adds more value to the accessibility analysis as an indicator of how the Neck area is improving over time.

DATA USED:

Existing Bicycle Accessibility: GIS dataset of road centerlines from Charleston County.

Future Bicycle Accessibility: Renaissance calculations based on the proposed bicycle network from the Master Plan

Existing Population & Employment: 2008 Socioeconomic data from the CHATS Travel Demand Model.

Future Population & Employment: For Station Areas - Renaissance calculations based on the Catalyst Area site plans from this report. For areas outside Station Areas – 2035 Socioeconomic data from the CHATS Travel Demand Model.

Street Wall Proximity in Potential Station Areas

This is an urban design measure of the relative sense and scale of enclosure of the "street wall" – the distance between front building facades – on a roadway. Street enclosure is a key component of traditional neighborhoods and is generally found as a prominent feature in the older neighborhoods of Charleston and North Charleston. The Catalyst Area plans in particular were intended to reinforce the sense of street enclosure and continue the traditional pattern of urban streets in the study area. It was calculated for this analysis by buffering the street centerline file and intersecting it with a building footprint layer. The total area of building footprints was calculated that fell within the buffer within ½ mile of each of the 12 potential future station areas. The following formula was used for the amount of buffer based on the number of lanes in each roadway:

LANES	BUFFER DISTANCE
2	35
4	45
6	55

Data Used:

Existing Building footprints: County & North Charleston Building Foot Print layers of their GIS data.

Existing Roadways: GIS dataset of road centerlines from Charleston County.

Future Buildings and Roadways: Renaissance calculations based on the Catalyst Area site plans from this report.

Transit Accessibility in Potential Station Areas

A key performance measure for this project is the transit accessibility of the area. Although there were limitations due to data availability, an analysis was conducted that looked at the general density of transit stops and service in a given area. For the ½ mile buffers around each potential future Station Area, transit accessibility was calculated by dividing the number of transit stops within the buffer multiplied by the number of times per week that a bus passed each stop. As there was no data available for stop locations, these locations were approximated by taking the number of stops on a route divided by the route's length in miles and then allocating these stops equally along the length of each route at roughly quarter mile intervals.

In addition, this project looked at potential alignments and station locations for future premium transit (commuter rail, light rail or bus rapid transit), as well as new circulator and enhanced bus routes in the study area. To show the enhanced transit accessibility for the area at buildout (assuming the buildout of the premium transit lines and enhanced bus service), a factor was added to the transit accessibility score to account for the potential future transit accessibility. This was calculated as a "Premium Transit Score" as follows: 1point if within 1/4 mile of a Commuter/ Light rail/ BRT station; 0.5 Point if within 1/2 mile of a Commuter/ Light rail/ BRT station; and 0.5 point if within 1/4 mile of enhanced bus route or circulator. The final table of transit accessibility shows the existing transit score and the future premium transit score for each of the 12 potential future station areas.

Data Used:

Existing transit service: CARTA mapping of bus routes and on-line route schedules

Future transit service: Potential future transit service as proposed in the Master Plan.

Transit Accessibility in the Whole Study Area

In addition to the calculations of transit accessibility within potential future station areas, a separate analysis was conducted that looked at system-wide improvements in transit accessibility in the study area as a whole. For this analysis, the total miles of transit facilities as a whole were summed within the study area – both currently existing and at future buildout according to the Master Plan (including future commuter rail, light rail, BRT or enhanced bus service). In addition to the total linear miles of transit facilities, an analysis was also conducted of the total population and employment that was within ¼ mile of the transit lines – both existing and in the future. For the future population and employment, the COG travel demand model projections for 2035 were used outside the station areas and the Master Plan buildout projections were used within the station areas.

Data Used:

Existing transit service: CARTA mapping of bus routes and on-line route schedules

Future transit service: Potential future transit service as proposed in the Master Plan

Existing Population & Employment: 2008 Socioeconomic data from the CHATS Travel Demand Model.

Future Population & Employment: For Station Areas - Renaissance calculations based on the Catalyst Area site plans from this report. For areas outside Station Areas – 2035 Socioeconomic data from the CHATS Travel Demand Model.

Accessibility Analysis Results

The following sections provide the results of the accessibility testing. While the tables, figures and discussions of the results lend themselves to comparisons across locations, the primary purpose of these comparisons is to indicate the degree

Potential Station Area	EMPLOYMENT			POPULATION			Activity Units			Activity Units Per Acre		
	2008	At Buildout	% Change	2008	At Buildout	% Change	2008	At Buildout	% Change	2008	At Buildout	% Change
1	3,920	12,820	227%	1,170	5,250	349%	5,090	18,070	255%	2.5	9.0	260%
2	2,320	7,240	212%	1,730	7,110	311%	4,050	14,350	254%	2.0	7.2	260%
3	1,360	2,200	62%	1,370	3,450	152%	2,730	5,650	107%	1.4	2.8	71%
4	1,400	1,630	16%	2,790	3,160	13%	4,190	4,790	14%	2.1	2.4	14%
5	3,330	8,310	150%	3,950	8,940	139%	7,280	17,250	137%	3.6	8.6	139%
6	2,320	6,130	164%	3,370	6,890	104%	5,690	13,020	129%	2.8	6.5	132%
7	1,940	3,760	94%	2,860	5,010	75%	4,800	8,770	83%	2.4	4.4	83%
8	1,390	2,250	62%	1,480	2,760	86%	2,870	5,010	75%	1.4	2.5	79%
9	1,010	1,961	94%	288	1,193	314%	1,298	3,154	143%	0.6	1.6	167%
10	2,100	7,050	236%	3,660	7,590	107%	5,760	14,640	154%	2.9	7.3	152%
11	2,420	7,090	193%	3,650	7,320	101%	6,070	14,410	137%	3.0	7.2	140%
12	1,440	3,730	159%	3,680	6,030	64%	5,120	9,760	91%	2.6	4.9	88%
Sum of all Station Areas *	**2,378**	**5,665**	**138%**	**3,300**	**6,272**	**90%**	**4,796**	**10,956**	**128%**	**2.4**	**5.5**	**129%**

* NOTE - There is some overlap in the station areas. Therefore, the totals for sum of all station areas has been adjusted to avoid double counting in areas of overlap between two stations

Figure 8.8 Activity Density

Potential Station Area	Potenial Bicycle Accessibility			Street Enclosure			Land Use Diversity			Potenial Transit		Street Connectivity			Average Combined Score		
	Total Feet of Bikaeble Roads Within 1/2 Mile			Building Area within Setback Buffers Within 1/2 mile			Number of different Land Uses Within 1/4 mile of station			Fixed Routes/stops per 1/2 mile	Premium Tranits Score at Buildout	intersections within 1/2 mile of station			Normalized sum of all scores		
	Existing	At Buildout	% Change	Existing	At Buildout	% Change	Existing	At Buildout	% Change			Existing	At Buildout	% Change	Existing	At Buildout	% Change
1	40,544	59,255	46%	30,428	170,135	459%	5.0	6.0	20%	23,649	1.5	42	67	60%	1.7	3.0	76%
2	49,978	68,096	36%	70,861	192,765	172%	6.0	8.0	33%	24,088	1.5	46	28	-39%	2.1	3.4	62%
3	42,473	51,596	21%	91,279	104,190	14%	7.0	8.0	14%	17,886	1.0	45	49	8%	2.2	2.6	18%
4	36,154	42,415	17%	35,390	35,390	0%	5.0	5.0	0%	21,321	1.0	95	154	62%	2.0	2.5	25%
5	48,553	67,923	40%	94,909	114,453	21%	6.0	6.0	0%	96,995	1.5	121	223	84%	3.2	4.2	31%
6	61,953	72,319	17%	55,373	70,782	28%	6.0	8.0	33%	62,829	1.5	79	117	48%	2.7	3.7	37%
7	75,419	104,697	39%	136,526	139,950	3%	6.0	6.0	0%	106,251	1.0	119	141	18%	3.7	4.0	16%
8	51,939	73,495	39%	239,521	270,234	13%	5.0	7.0	40%	29,694	1.0	86	115	34%	2.7	3.5	80%
9	36,820	53,046	44%	77,818	80,321	3%	5.0	6.0	20%	23,104	1.0	23	33	43%	1.7	2.3	35%
10	63,345	84,981	34%	167,976	228,729	36%	6.0	7.0	17%	52,684	1.0	87	109	25%	3.0	3.5	17%
11	57,069	79,981	40%	229,590	296,023	29%	6.0	8.0	33%	67,255	1.0	75	89	19%	3.1	3.8	23%
12	60,687	80,928	33%	273,657	301,994	10%	7.0	9.0	29%	57,517	1.0	98	103	5%	3.5	3.9	11%
Whole Study Area Average	**60,470**	**81,311**	**34%**	**159,786**	**202,814**	**27%**	**6.8**	**8.0**	**18%**	**56,889**	**1.3**	**89**	**116**	**30%**	**3**	**3.8**	**27%**

Figure 8.9 Accessibility Analysis

of potential improvement in accessibility if the Master Plan is developed as proposed. The purpose of developing the accessibility measures as a means of performance measurement is not intended to compare individual locations in the study area to each other, but rather to be able to compare the same locations over time to determine if accessibility could be improved by the buildout of the Master Plan.

The table below contains the summary values for the general accessibility measures. The discussion in the section above summarizes how each measure was developed and the data used for measurement.

Activity Density by Potential Station Areas

As shown in **Figure 8.8**, the Master Plan Buildout represents a significant increase in population and employment in each of the potential Station Areas that were analyzed, ranging from a 14 percent to 260 percent increase in total activity density in a Station Area. It should be noted that this comparison is made between the 2008 base year statistics and the plan at full buildout, which may take many decades to occur. The comparison does show, however, at least the potential for growth in each of the future Station Areas represented by the Master Plan.

Accessibility Analysis by Potential Station Areas

Figure 8.9 shows a significant improvement in accessibility that could result from the full buildout of the Master Plan. The values vary from Station Area to Station Area and by measure, but they show improvements in composite accessibility ranging from 11 percent to 80 percent in station areas and an overall study area improvement of two percent. While the overall study area improvement is not significant, this result should be taken with caution since it looks only at the sum of Station Areas rather than a true analysis of the study area as a whole at buildout. If it were possible to project the values for the whole study area at buildout, it would undoubtedly show a considerably greater improvement in accessibility than two percent because the whole area would be denser in terms of activities, land uses, road connections and transit access. As noted above, this accessibility comparison at least shows the potential for accessibility improvement in each of the future Station Areas if improvements as represented by the Master Plan were carried out.

Figures 8.10 and **8.11** graphically represent the existing and proposed Average Combined Accessibility scores from **Figure 8.9**, with different colors indicating high, medium, and low overall accessibility. Areas with high accessibility will generally be the best suited for catalyst site improvements.

Transit and Bicycle Accessibility Analysis for the Whole Study Area

As noted above, the transit and bicycle accessibility analysis was also performed for the study area as a whole. **Figure 8.12** and **Figure 8.13** show the result

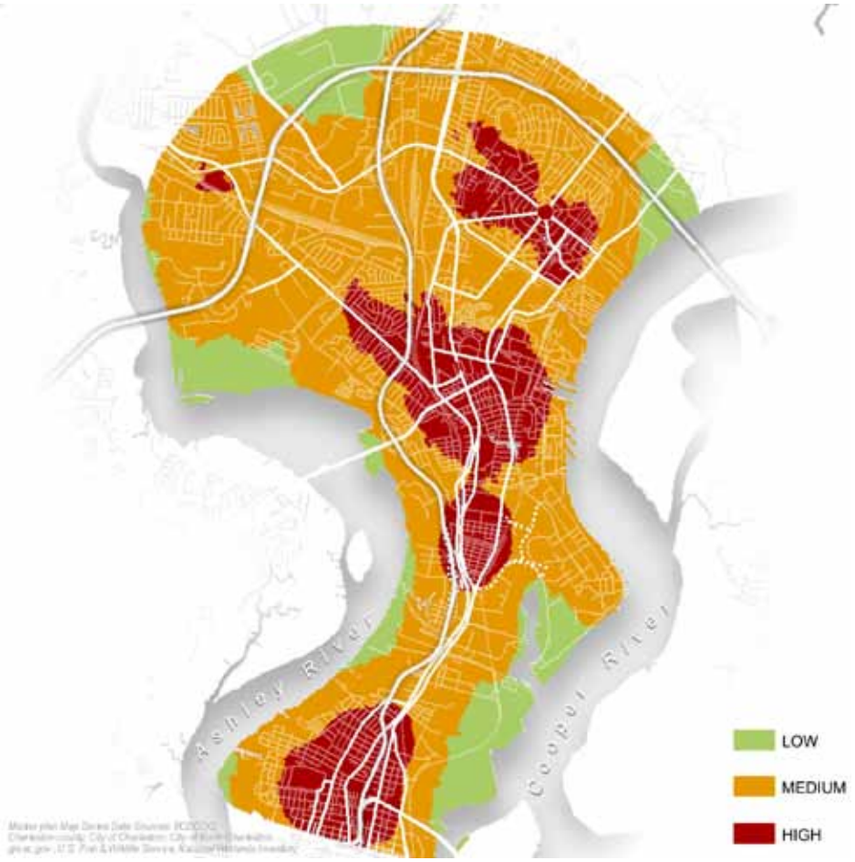

Figure 8.10 Average Combined Score (Existing)

of this analysis using the methodology described in the section above. It shows considerable improvement in the study area for both bicycle and transit accessibility, using the measures of total length of facilities as well as population and employment within ¼ mile of the facilities.

Conclusion

The story of successful redevelopment and revitalization in the Neck will be an evolving, iterative process involving many players acting in a coordinated and unified fashion. The key to success will rest in a diverse network of people working together toward the shared goals expressed in the Partnership for Prosperity vision and Master Plan. Long term realization of the vision for the Neck area will not be based on investments from only one major source, be it local, federal or state government or a large private entity. However, a network of partners focused on a clear mission can effectively leverage resources and coordinate investments. If resources are limited for a particular project or momentum flags in one sector, the true value of a partnership emerges through partners working simultaneously on multiple initiatives so that there is always progress in some sectors. For example,

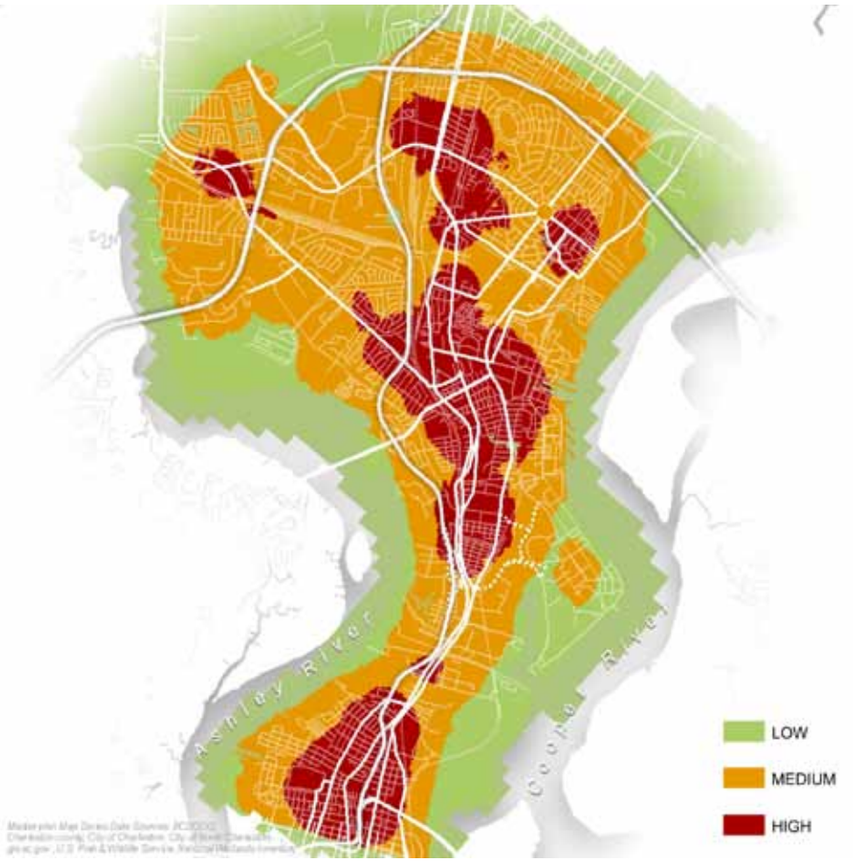

Figure 8.11 Average Combined Score (At Buildout)

	STUDY AREA BICYCLE ACCESSIBILITY		
	Bicycle Facilities (length in miles)	EMPLOYMENT Employment within 1/4 mile of facilities	POPULATION Population within 1/4 mile of facilities
EXISTING (2008)	5.9	3,020	6,590
FUTURE (2035) **	70.1	71,770	69,510
PERCENT CHANGE	1088%	2276%	955%

** NOTE - 2035 estimates include full buildout in each Station Area as per Master Plan

Figure 8.12 Bicycle Accessibility

	STUDY AREA TRANSIT ACCESSIBILITY		
	Transit Facilities (length in miles)	EMPLOYMENT Employment within 1/4 mile of facilities	POPULATION Population within 1/4 mile of facilities
EXISTING (2008)	488.0	37,960	46,200
FUTURE (2035) **	515.0	76,390	69,320
PERCENT CHANGE	6%	101%	50%

** NOTE - 2035 estimates include full buildout in each Station Area as per Master Plan

Figure 8.13 Transit Accessibility

nonprofit foundation grants can be matched by governmental funds, leveraging the value of both. Private companies can contribute toward public transportation, education or health care projects that benefit their employees or their market.

The Partnership for Prosperity process has been an important catalyst in nurturing such a multi-faceted coalition for the long term implementation of the vision. A first step in implementing the vision will be to develop a coalition of partners that signs on to a Memorandum of Understanding, and to communicate with all community members and key stakeholders about this agreement. This agreement should form the framework for a consistent approach and plan of action for the gradual implementation of the Master Plan over time. The establishment of an ongoing and permanent Partnership for Prosperity that is staffed, funded and with an agreed upon action plan and communication strategy will be the ultimate platform for the realization of a new vision for prosperity in the Neck in the decades to come.

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Appendix A
Maps

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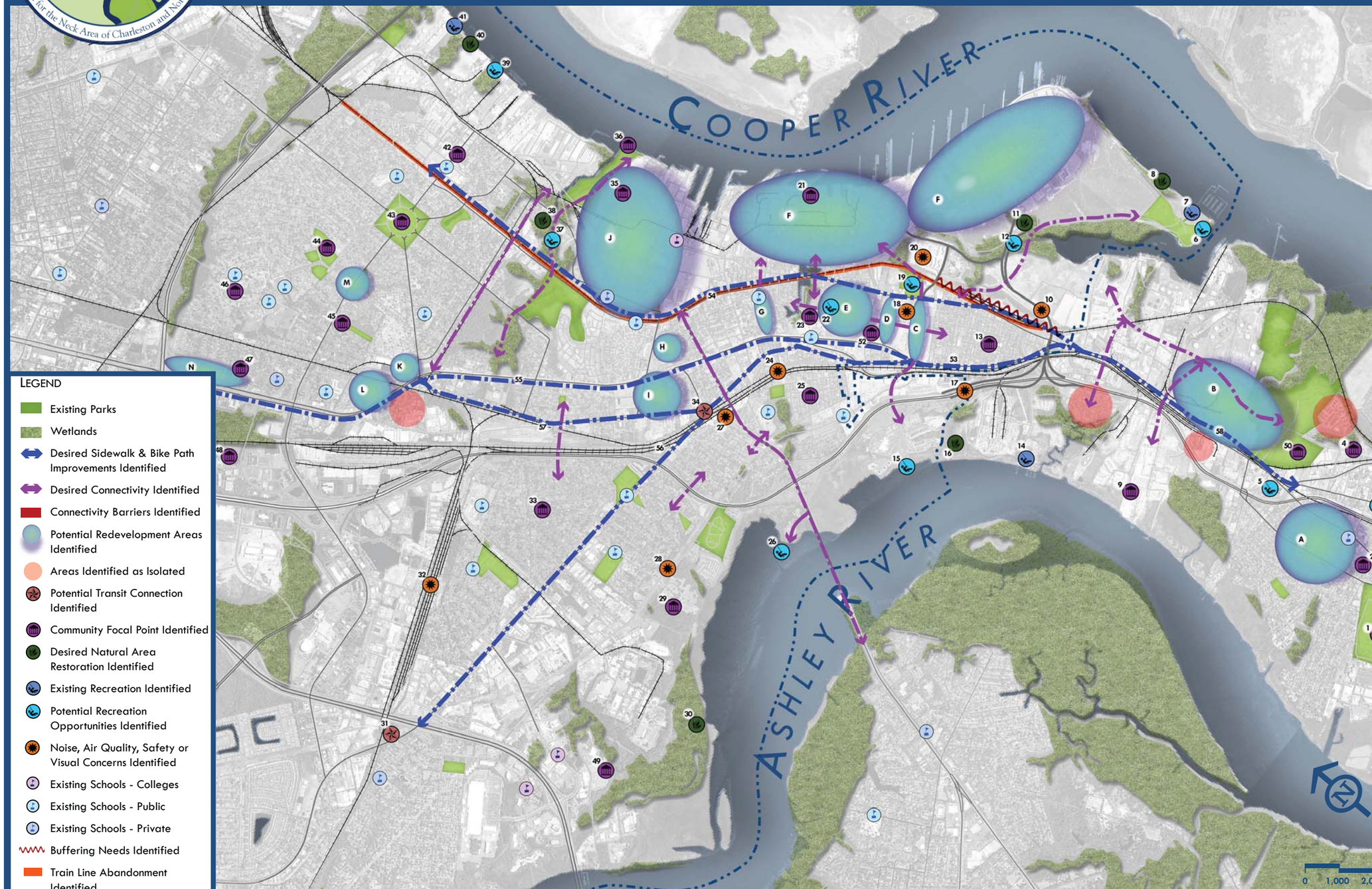
Summary of Public Input

Partnership for Prosperity
A Master Plan for the Neck Area of Charleston and North Charleston



Legend

- Existing Parks
- Wetlands
- Desired Sidewalk & Bike Path Improvements Identified
- Desired Connectivity Identified
- Connectivity Barriers Identified
- Potential Redevelopment Areas Identified
- Areas Identified as Isolated
- Potential Transit Connection Identified
- Community Focal Point Identified
- Desired Natural Area Restoration Identified
- Existing Recreation Identified
- Potential Recreation Opportunities Identified
- Noise, Air Quality, Safety or Visual Concerns Identified
- Existing Schools - Colleges
- Existing Schools - Public
- Existing Schools - Private
- Buffering Needs Identified
- Train Line Abandonment Identified

POTENTIAL AREAS FOR REVITALIZATION & REDEVELOPMENT IDENTIFIED

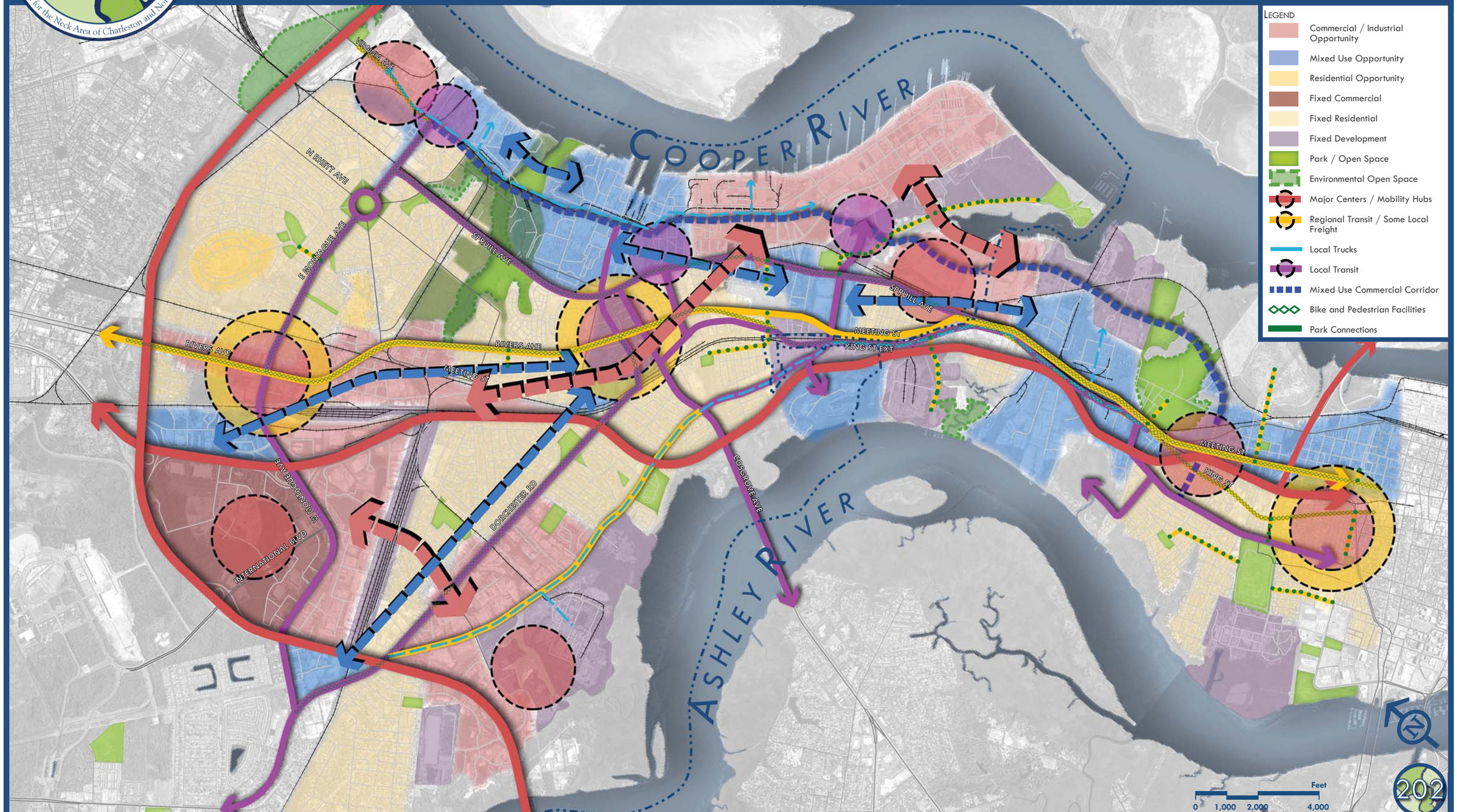
- **A** Area needs revitalization and stabilization – over 40 abandoned buildings and crime along railroad tracks
- **B** Create mixeduse, affordable housing areas, and recreation opportunities; improve transition between Charleston and North Charleston
- **C** Stromboli corridor mixed use redevelopment; business and economic incubator; proposed maritime institute; use green space and parks to reconnect neighborhoods and create walkable pedestrian orientation access
- **D** Jacksonville Road streetscape improvements
- **E** Residential revitalization, including recreation and affordable housing opportunities; dilapidated homes from Hurricane Hugo
- **F** Economic redevelopment of naval base; make more porous/accessible to community; uncertainty of rail yard
- **G** Bring back vitality to Reynolds Avenue corridor; create business and economic incubators
- **H** Reuse of naval hospital site
- **I** Redevelopment of Shipwatch Square; create business and economic incubators; need local uses such as grocery store, shopping center, library, post office
- **J** Noisette project
- **K** Reuse of Amtrak Station after Intermodal Center opens
- **L** Revitalization and business retention
- **M** Focus on neighborhood commercial to serve surrounding residential areas, possible live/work units along Mixson Avenue
- **N** Focus on revitalization, especially commercial focus on Rivers Avenue frontage

AREAS OF OPPORTUNITY (O) & CONCERN (C) IDENTIFIED

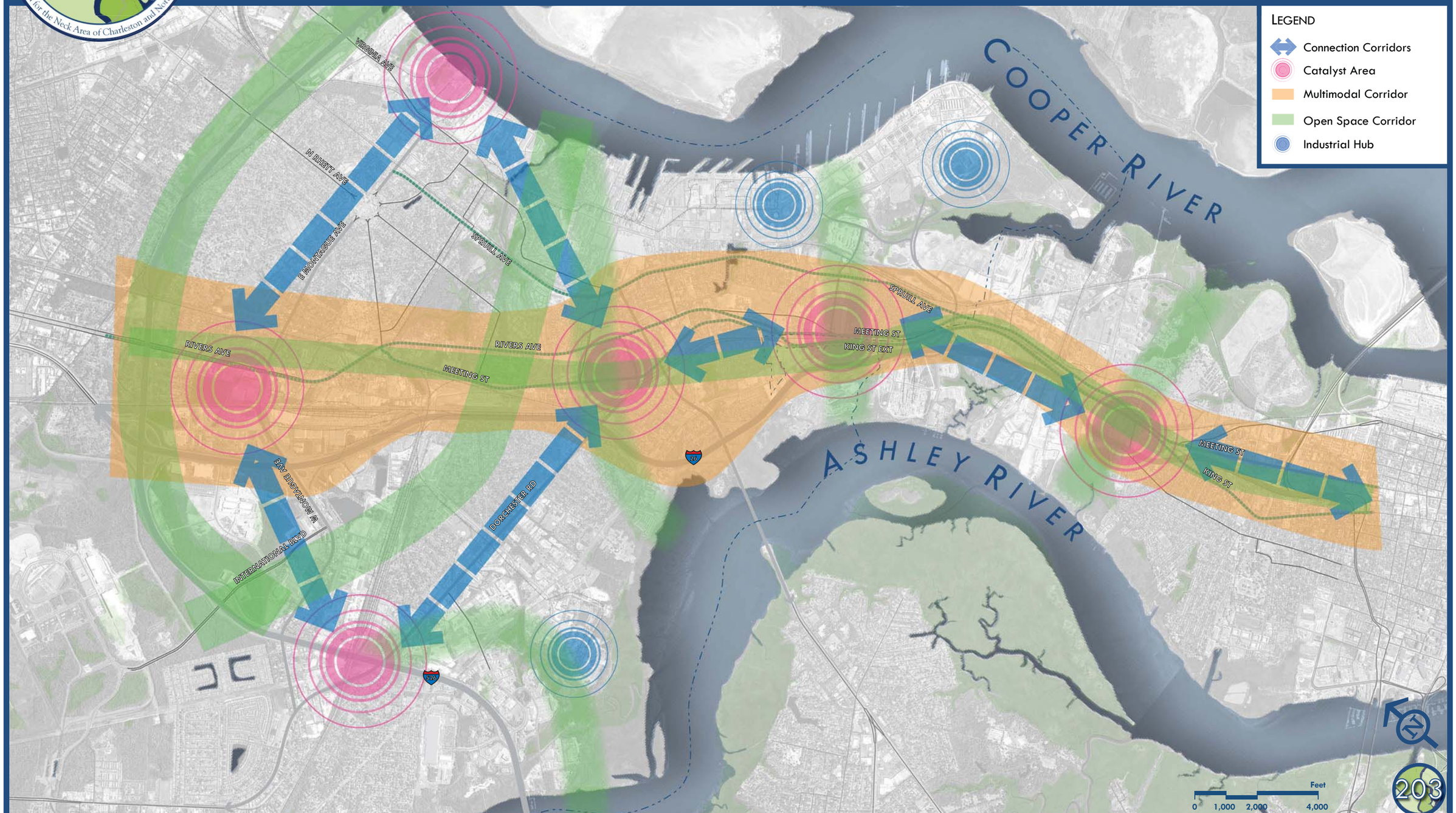
1. Hampton Park (O)
2. Develop new community center at the old paper company site (O)
3. Better facilities for youths between Romney/King and Romney/Morrison (C)
4. Need new community meeting space south of Calhoun Street (C)
5. Develop community park for children, area floods and needs rain-proofing (C)
6. Create water access for community along Shipyard Creek; fishing and crabbing areas (O)
7. Existing marina; potential ferry service along river (O)
8. Restore shoreline/wetlands to protect from floods (C)
9. Magnolia development (O)
10. Noise/light pollution from port access road to community (C)
11. Restore shoreline/wetlands to protect from floods (O)
12. Create park and trail opportunities along water (O)
13. Union Heights, Windsor, and Howard Heights neighborhoods (O/C)
14. Existing marina (O)
15. Create water access for community (O)
16. Restore shoreline/wetlands to protect from floods (C)
17. Air pollution due to increased traffic on interstate (C)
18. Remove stacked shipping containers – health and crime concern (C)
19. Create park in undeveloped green space (O)
20. Compatibility of industrial uses adjacent to residential zoning (C)
21. Clemson Wind Turbine facility (O)
22. Need to create green spaces for community (O)
23. Chicora and Cherokee neighborhoods (O/C)
24. Need lighting in this area – unsafe conditions; clean up brownfields (O)
25. Accabee neighborhood (O/C)
26. Create water access for community (O)
27. Conflicts between neighborhoods and industrial uses (C)
28. Ugly overhead power lines (C)
29. Jenkins Orphanage – historic landmark (O)
30. Restore shoreline/wetlands to protect from floods (C)
31. Intermodal Center (O)
32. Neighborhood impacts from rail yard (C)
33. Dorchester/Waylyn neighborhood (O/C)
34. Create transit development node (O)
35. Naval officer's housing – National Register (O)
36. Waterfront park; better signs for attractions (O)
37. Create park and trail systems that connect into existing waterfront park (O)
38. Restore shoreline/wetlands to protect from floods (C)
39. Create public green space area along water for community (O)
40. Restore shoreline/wetlands to protect from floods (C)
41. Existing boat ramp – needs better signage (O)
42. Old North Charleston downtown; needs better signs near 26 and 526 to bring people in (O/C)
43. Park Circle, possible grocery store here (O)
44. Danny Jones Recreation Complex - Armory (O)
45. Liberty Hill neighborhood; important to maintain character (O/C)
46. Oak Terrace neighborhood and North Charleston Creative Arts School (O/C)
47. Ferndale neighborhood (O/C)
48. North Charleston City Hall (O)
49. Charleston County Public Services building (O)
50. Magnolia cemetery (O)
51. Boeing Aircraft Assembly/Charleston International Airport and Air Force Base (O)
52. Five Mile neighborhood (O/C)
53. Debonair brownfield site - use site to expand community center (O)
54. Take S-Line out of service (C)
55. Rivers Avenue - unfriendly to pedestrians, streetscape lacking, consider underground utilites and lighting improvements (C)
56. Transit connection along railroad (O)
57. Rail lines pose significant barriers (roads, pedestrians, etc...) (C)
58. More lighting needed along King Street Ext. (C)

NOTE: This map is a summary of the input received from participants at the May 19, 2011 Community Forum held in the Military Magnet School in North Charleston. The input was in response to exercises that asked participants to envision issues, opportunities and concerns for the long term planning for the Charleston Neck study area.

Vision Elements Synthesis



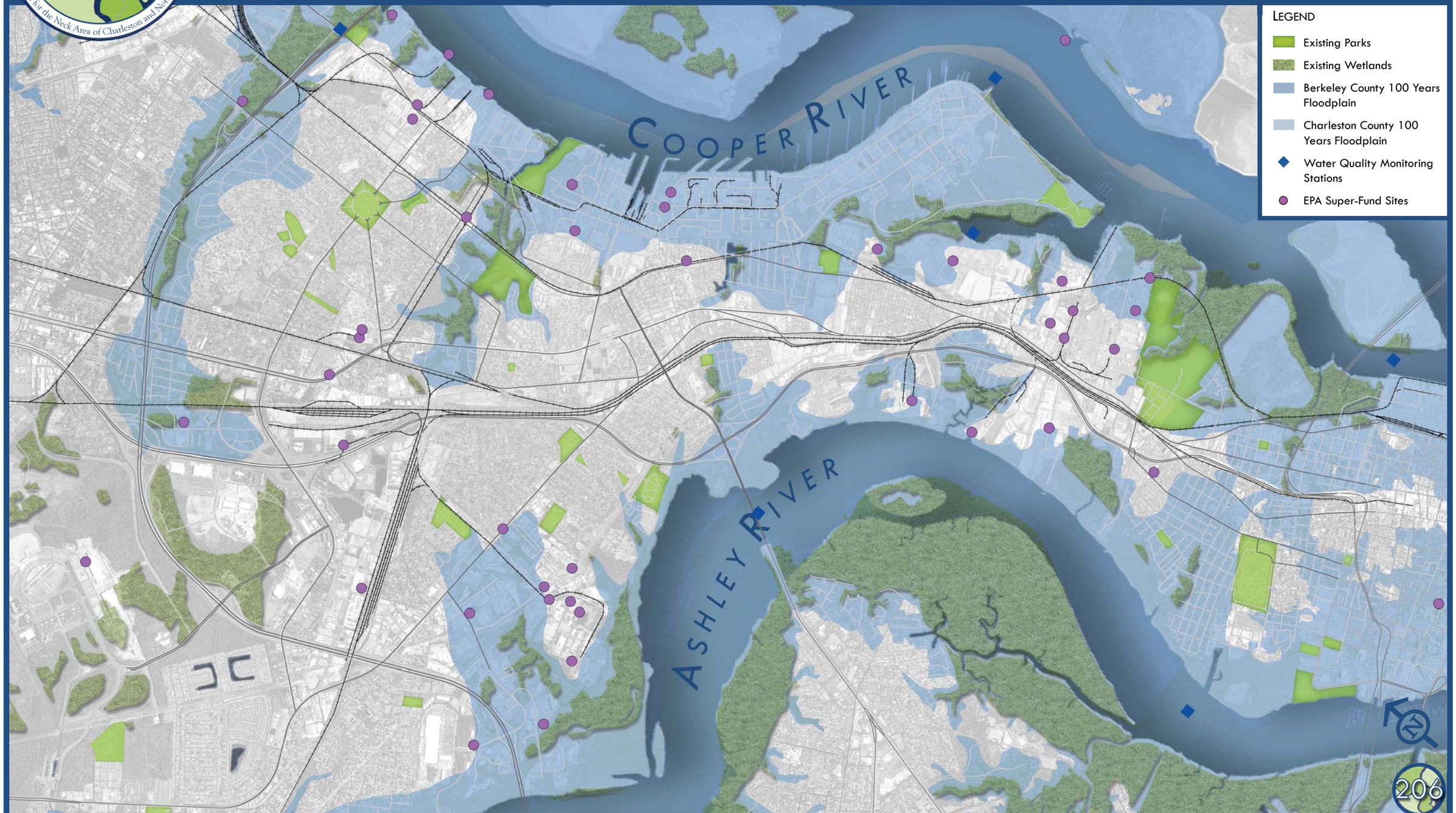
Conceptual Vision Map



Existing Open Space Network

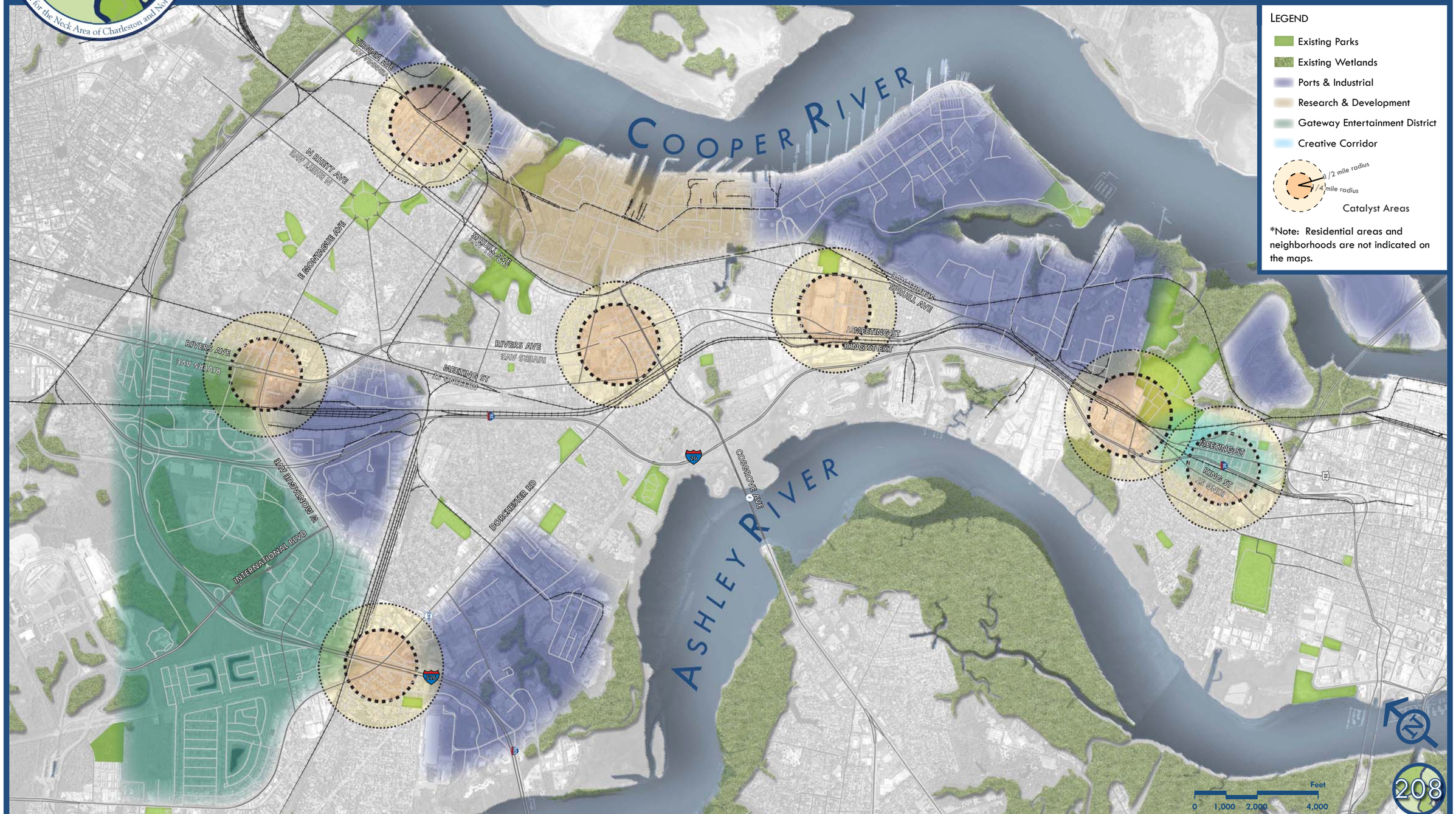
Existing Bicycle and Pedestrian Network

Environmental Conditions

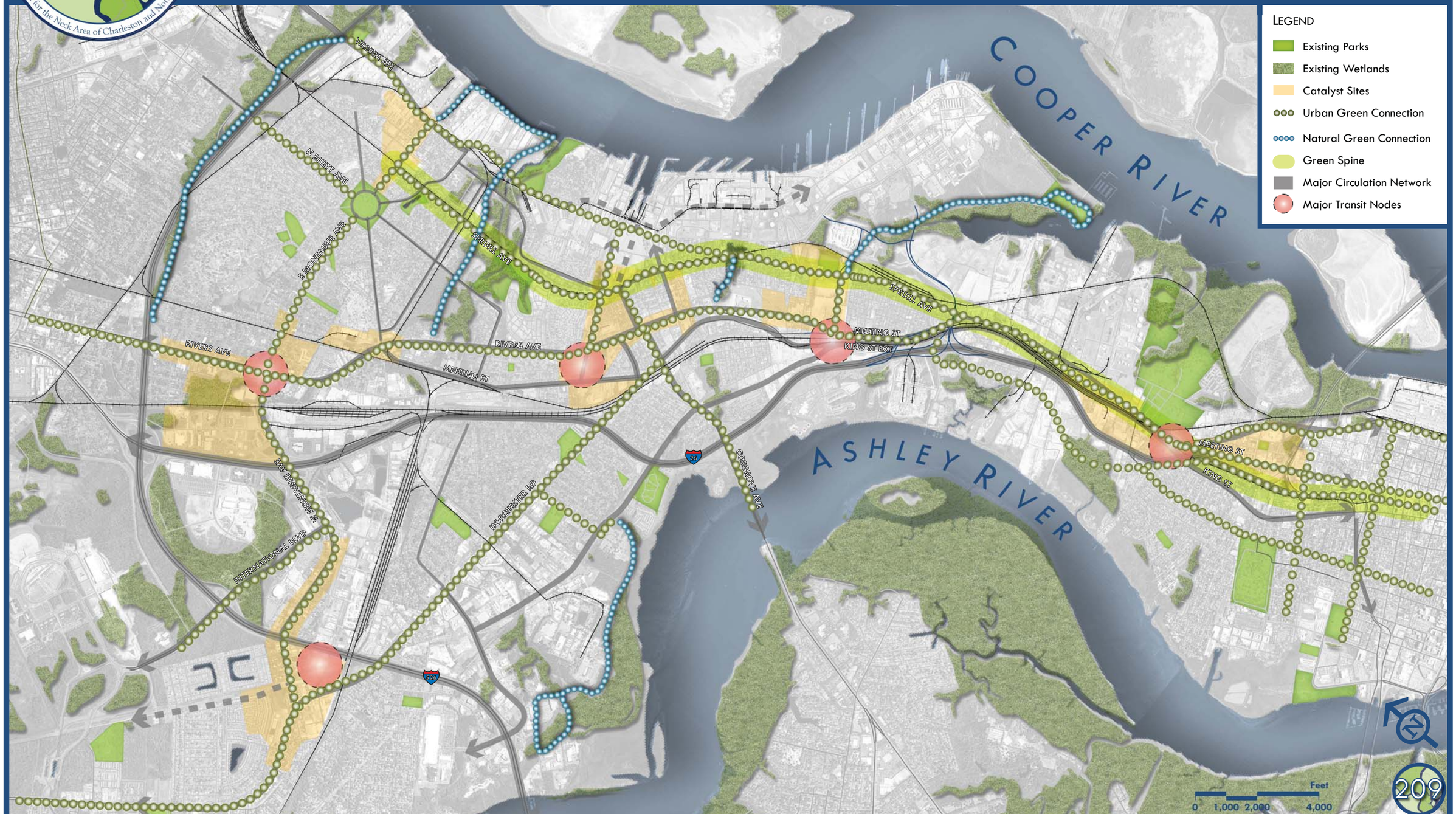


Community Focal Points

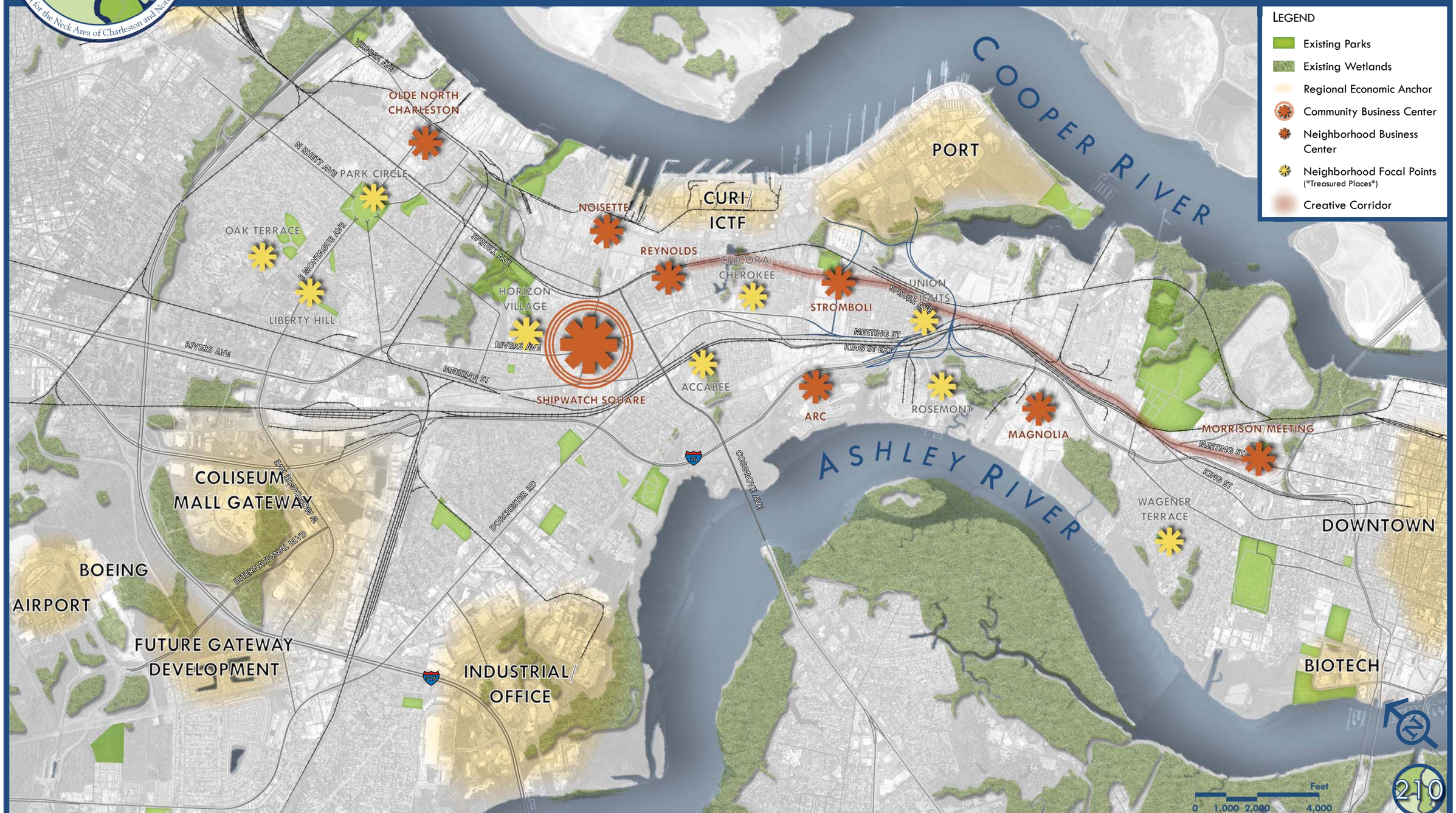
Study Area Districts



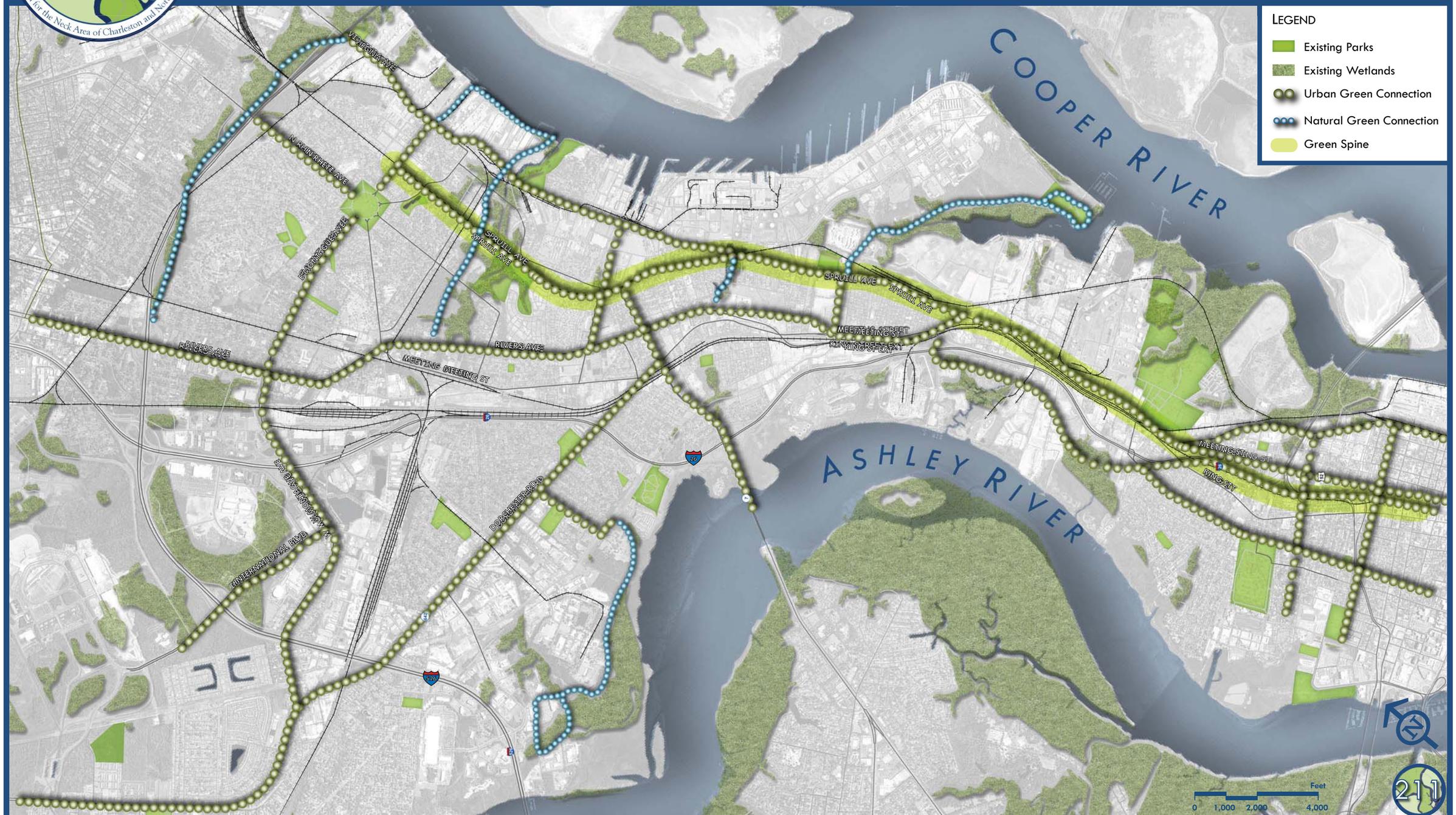
Master Plan Framework



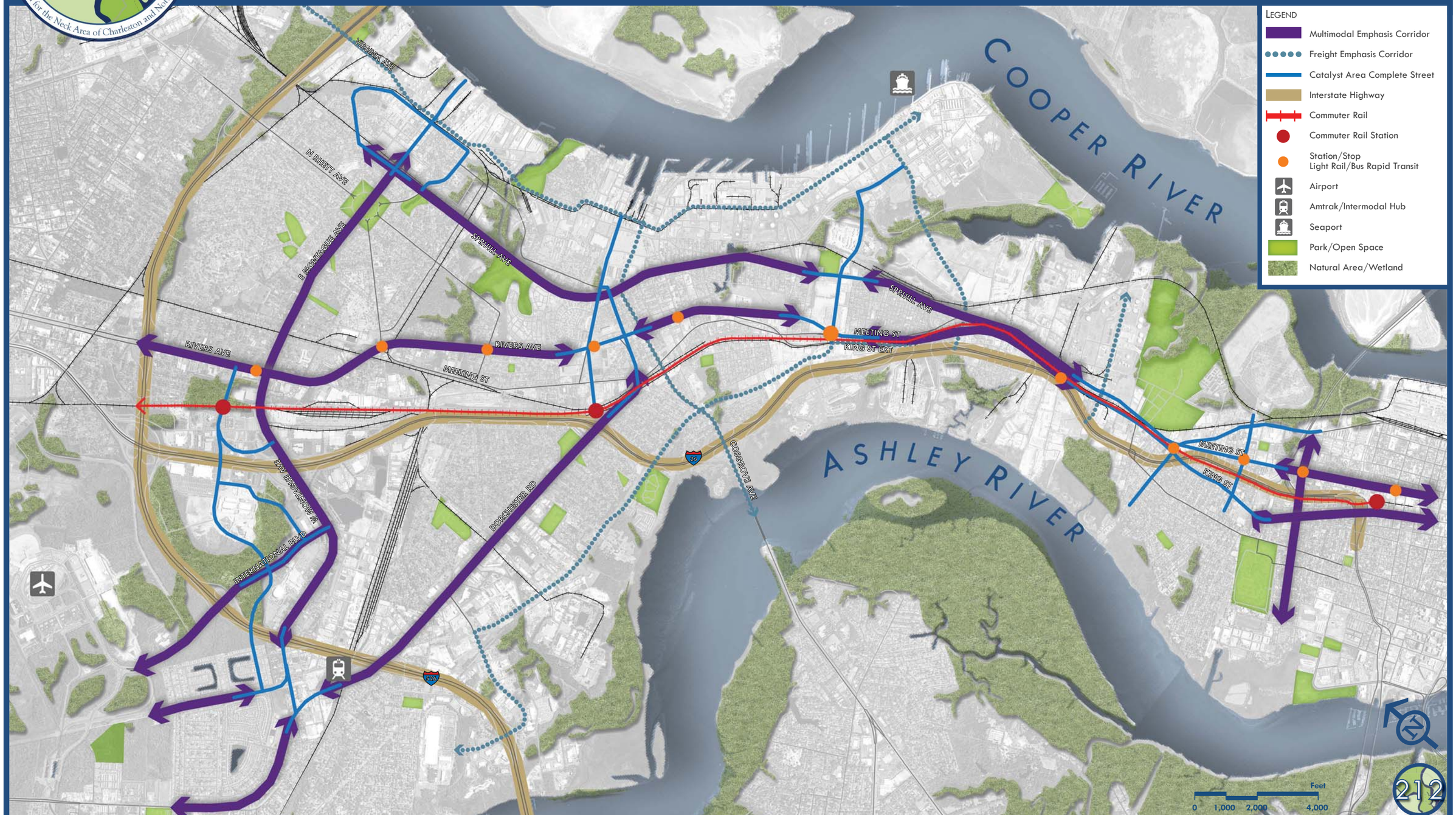
Economic Framework



Green Network



Circulation Framework



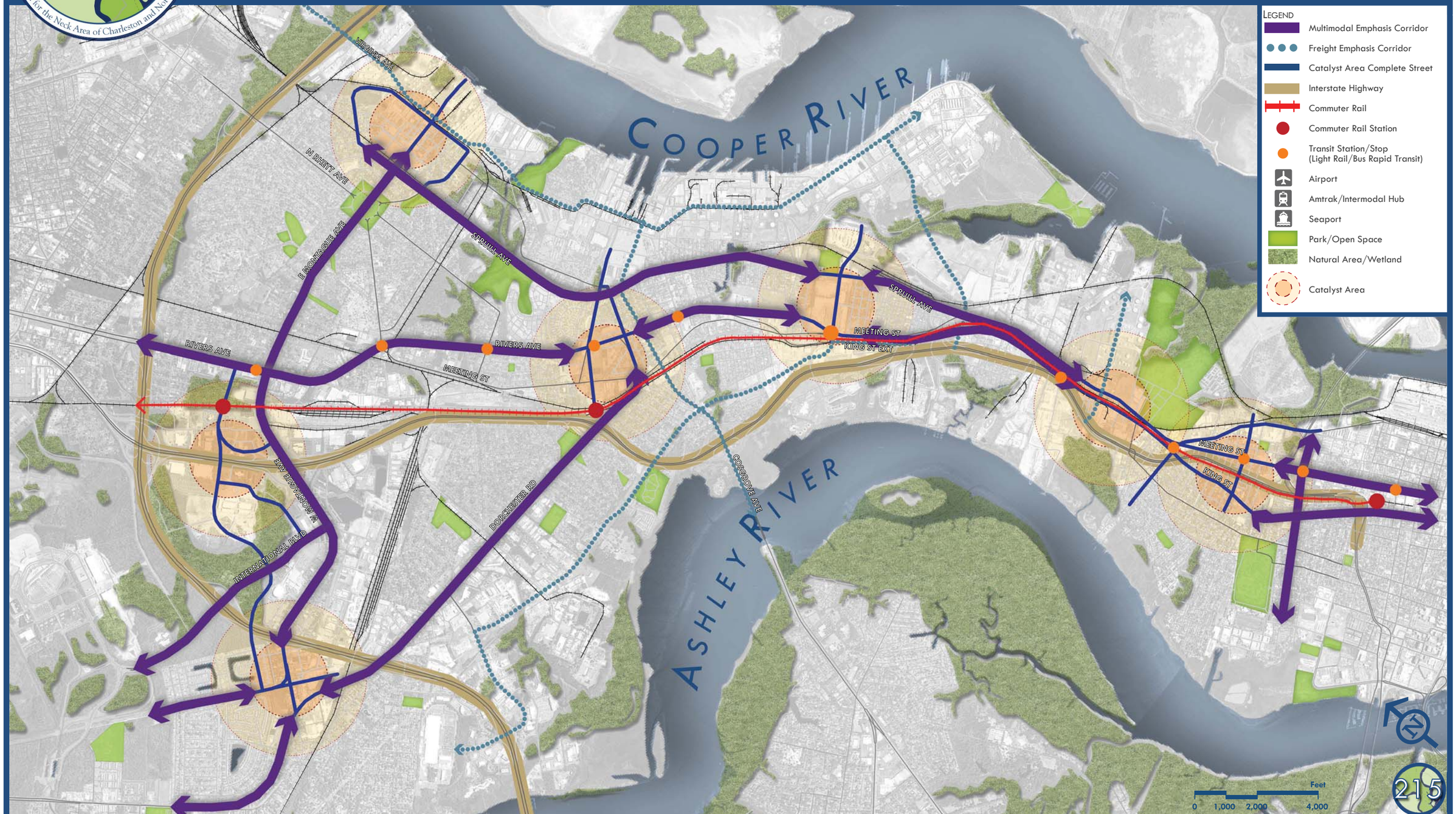
Transit Network

Short Term

Transit Network

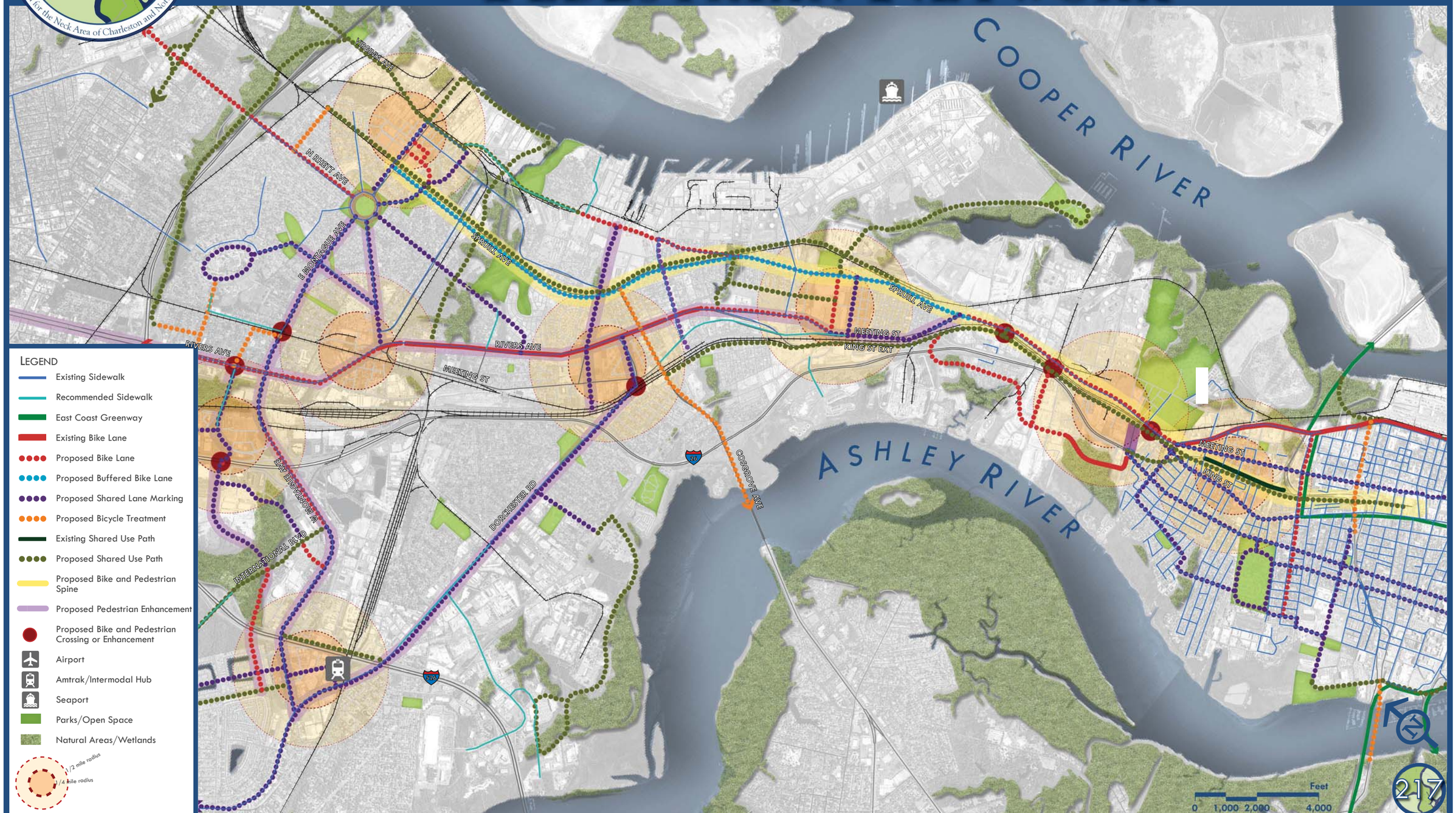
Long Term

Thoroughfare Network



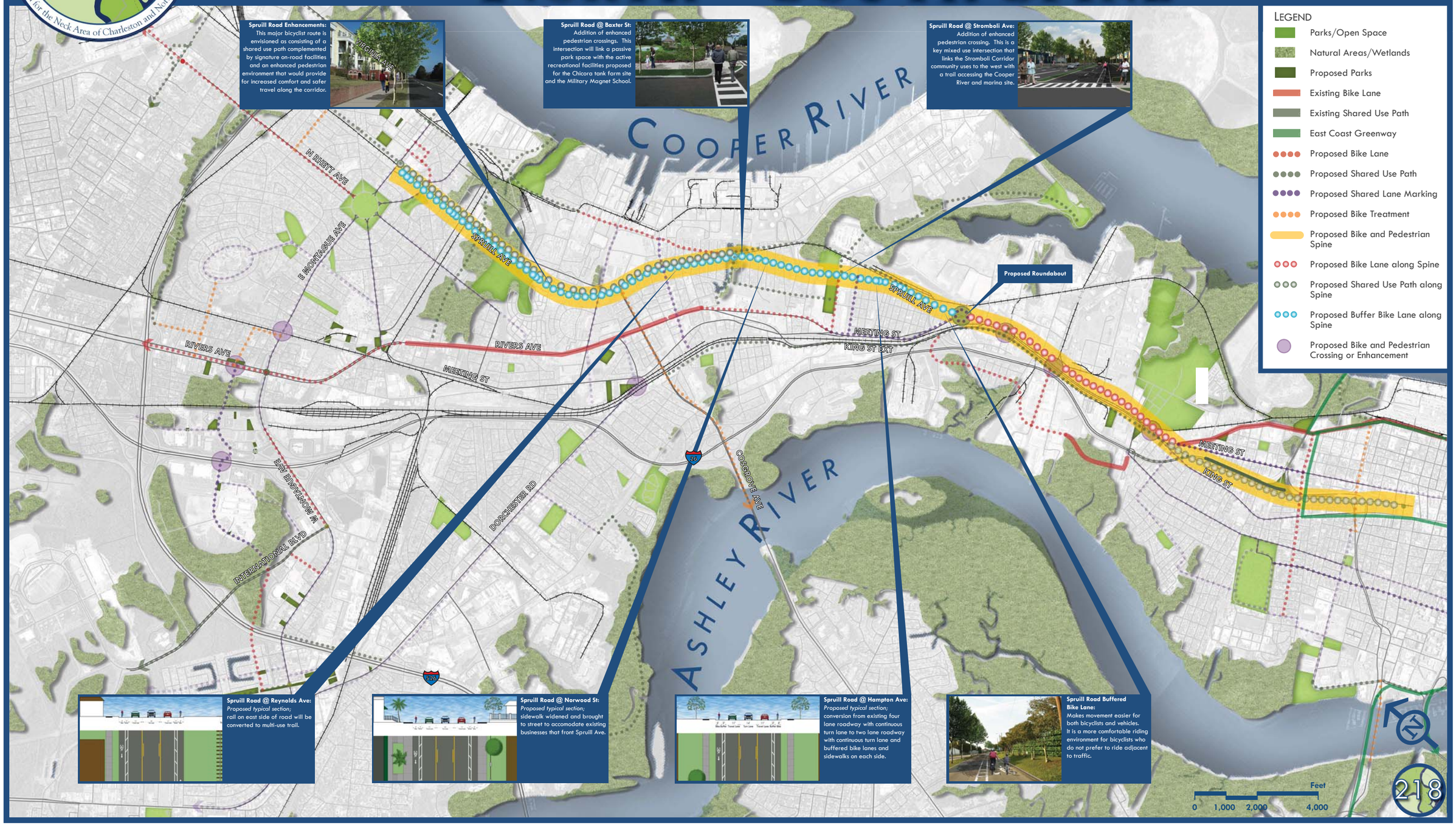
Proposed Open Space Network

Proposed Bicycle and Pedestrian Network



Bicycle & Pedestrian North - South Spine

Partnership for Prosperity
A Master Plan for the Neck Area of Charleston and North Charleston



Spruill Road Enhancements: This major bicyclist route is envisioned as consisting of a shared use path complemented by signature on-road facilities and an enhanced pedestrian environment that would provide for increased comfort and safer travel along the corridor.

Spruill Road @ Baxter St: Addition of enhanced pedestrian crossings. This intersection will link a passive park space with the active recreational facilities proposed for the Chicora tank farm site and the Military Magnet School.

Spruill Road @ Stromboli Ave: Addition of enhanced pedestrian crossing. This is a key mixed use intersection that links the Stromboli Corridor community uses to the west with a trail accessing the Cooper River and marina site.

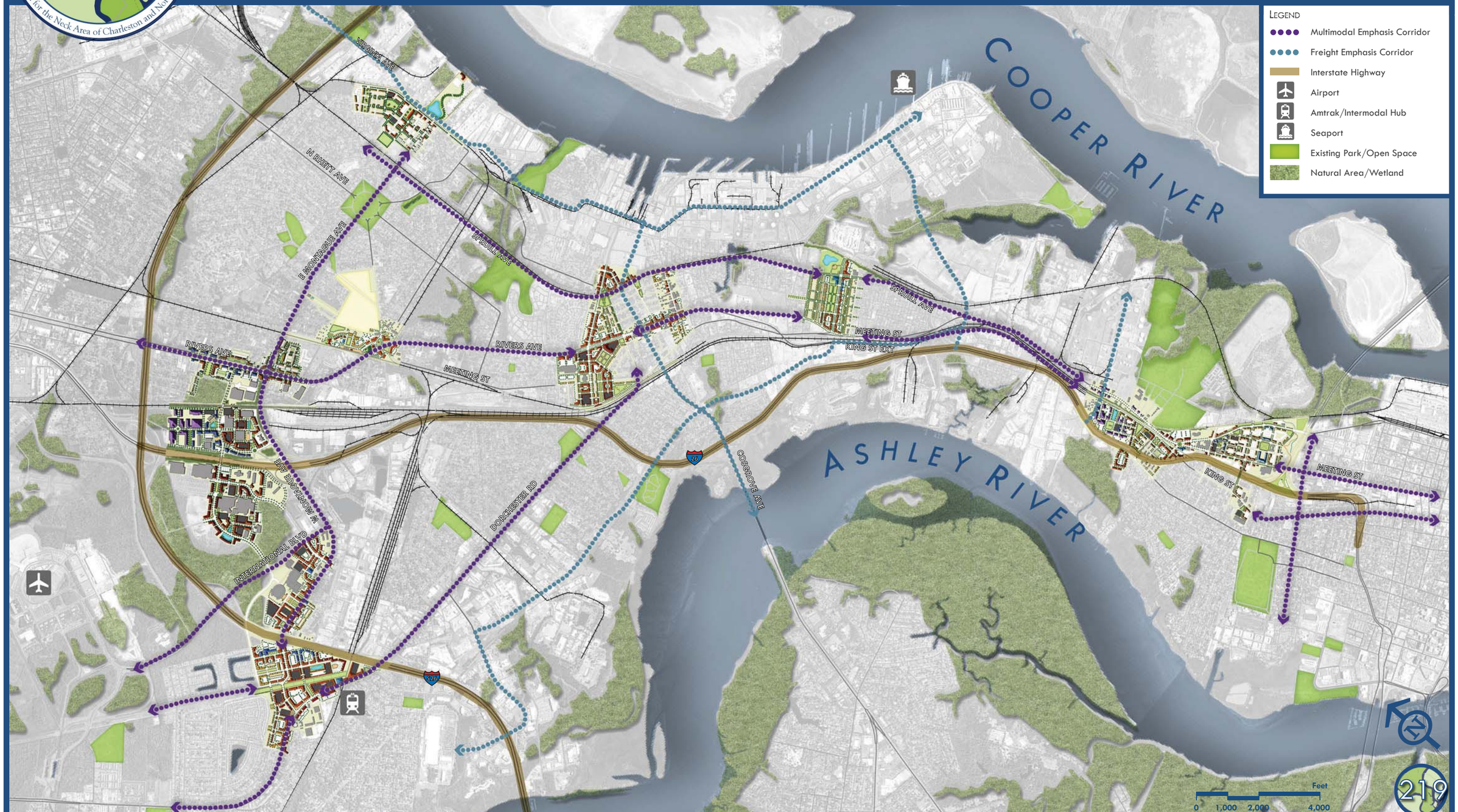
Spruill Road @ Reynolds Ave: *Proposed typical section;* rail on east side of road will be converted to multi-use trail.

Spruill Road @ Norwood St: *Proposed typical section;* sidewalk widened and brought to street to accomodate existing businesses that front Spruill Ave.

Spruill Road @ Hampton Ave: *Proposed typical section;* conversion from existing four lane roadway with continuous turn lane to two lane roadway with continuous turn lane and buffered bike lanes and sidewalks on each side.

Spruill Road Buffered Bike Lane: Makes movement easier for both bicyclists and vehicles. It is a more comfortable riding environment for bicyclists who do not prefer to ride adjacent to traffic.

Catalyst Sites



Charleston

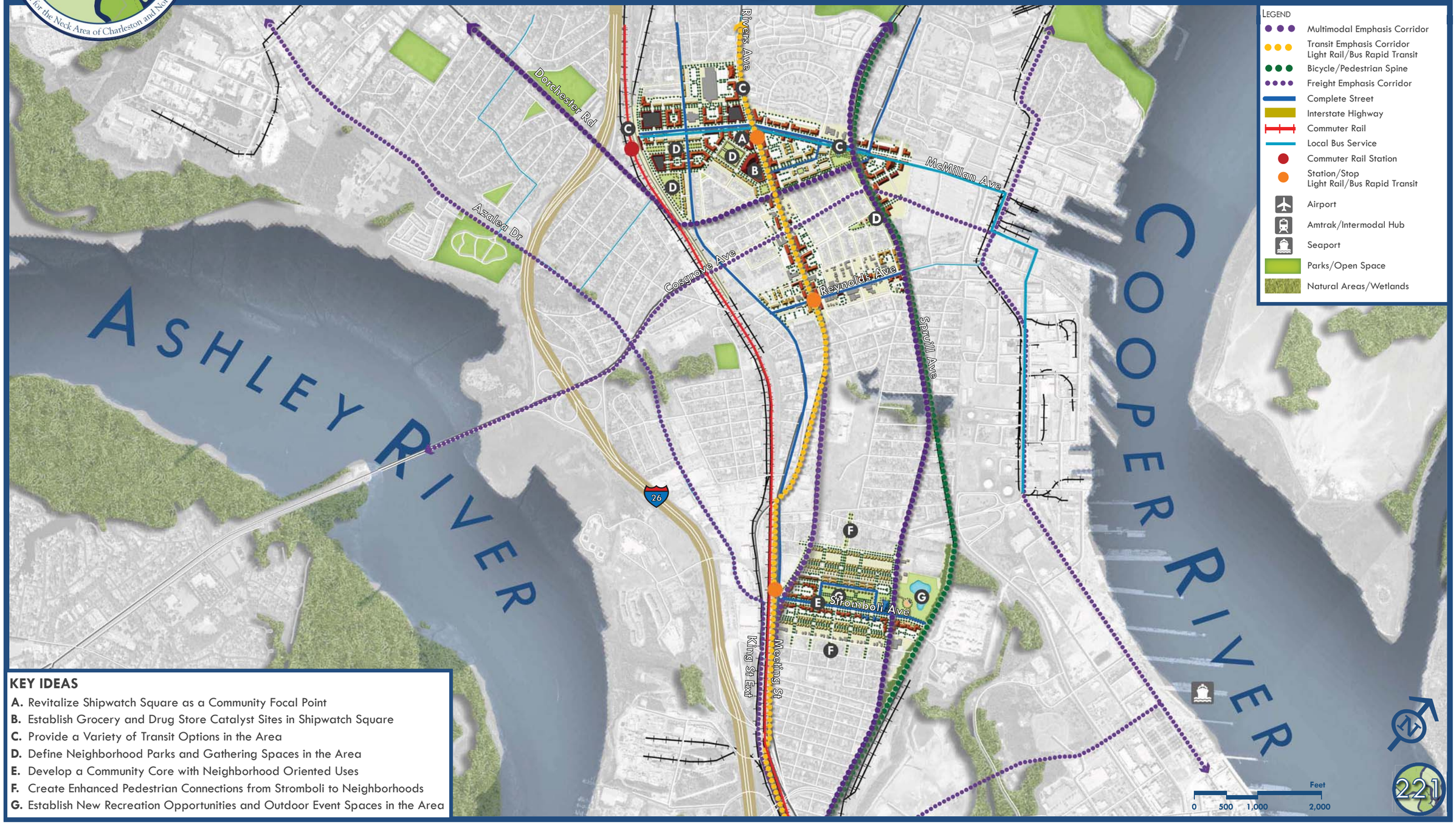
North & South of Mount Pleasant Street

KEY IDEAS

- **A.** Develop a Creative Corridor along Meeting Street
- **B.** Create a New Gateway Entrance into Charleston Along Morrison Drive
- **C.** Redevelopment Outdated Shopping Centers along King Street
- **D.** Redesign Mt. Pleasant Street/Meeting Street Intersection
- **E.** Develop Vacant Parcels to Complete Street Face in the Area
- **F.** Buffer Industrial Uses from Other Development in the Area
- **G.** Establish a Shared Use Path under Elevated Sections of I-26

North Charleston

Shipwatch Square & Stromboli Ave

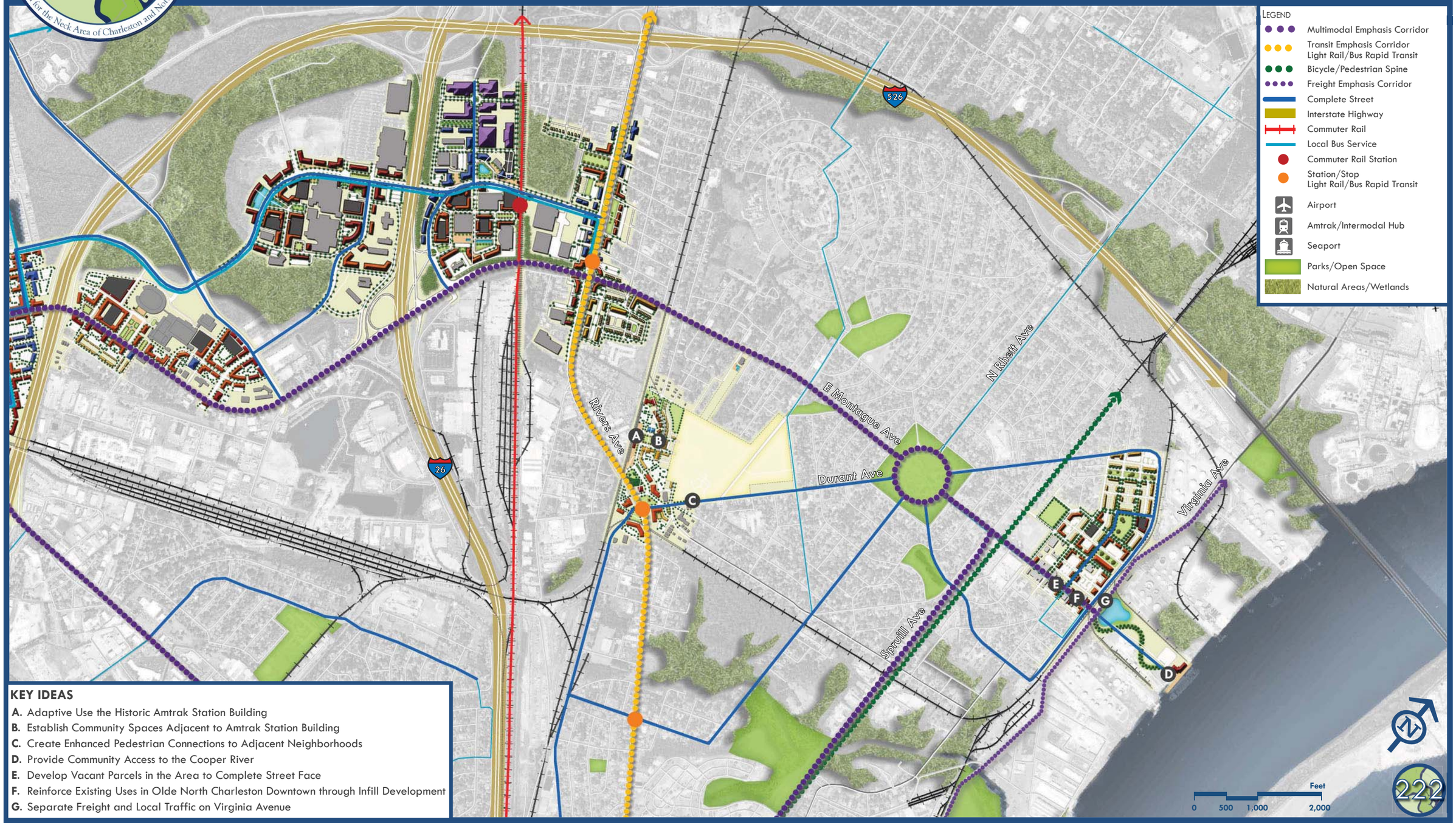


KEY IDEAS

- **A.** Revitalize Shipwatch Square as a Community Focal Point
- **B.** Establish Grocery and Drug Store Catalyst Sites in Shipwatch Square
- **C.** Provide a Variety of Transit Options in the Area
- **D.** Define Neighborhood Parks and Gathering Spaces in the Area
- **E.** Develop a Community Core with Neighborhood Oriented Uses
- **F.** Create Enhanced Pedestrian Connections from Stromboli to Neighborhoods
- **G.** Establish New Recreation Opportunities and Outdoor Event Spaces in the Area

North Charleston

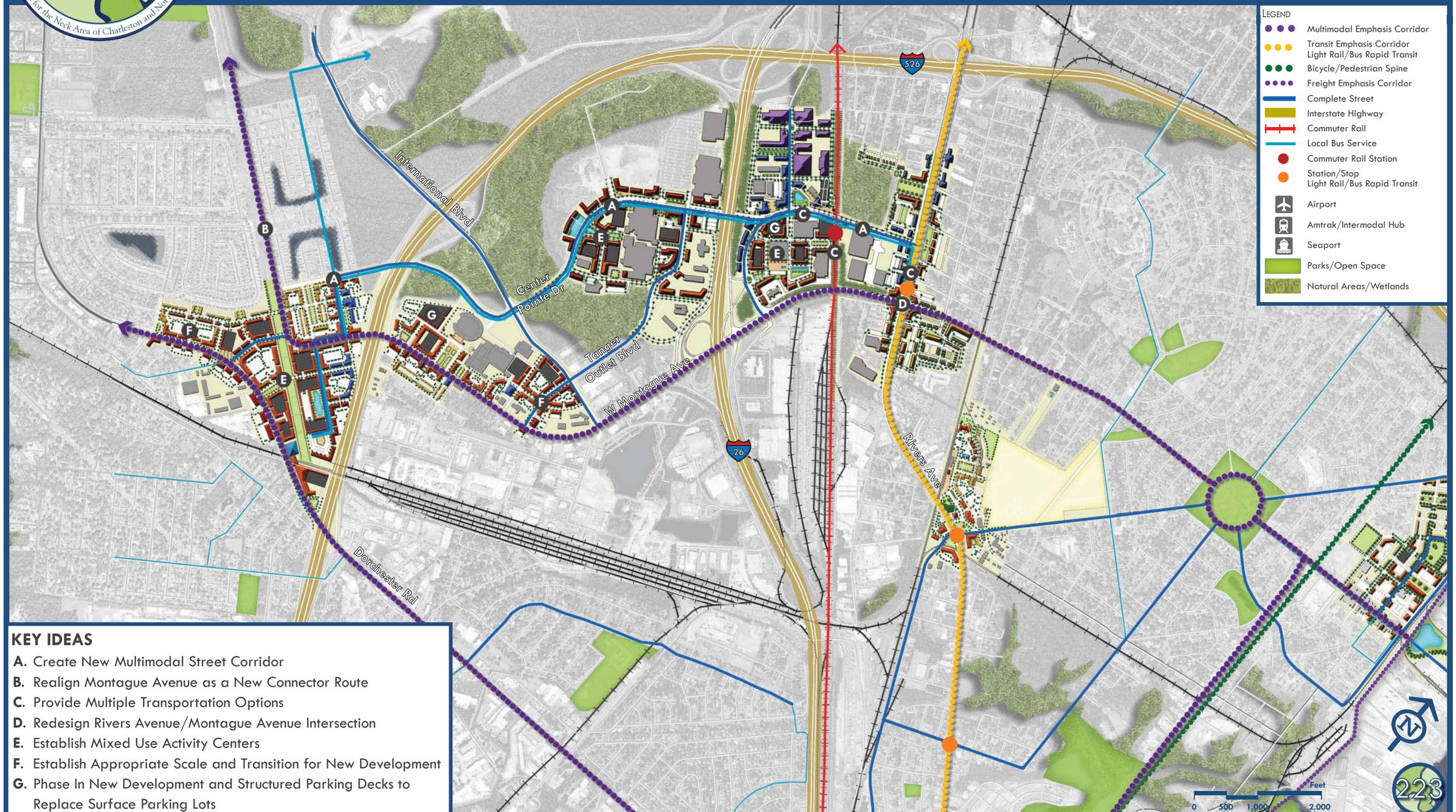
Olde North Charleston & Amtrak



KEY IDEAS

- **A.** Adaptive Use the Historic Amtrak Station Building
- **B.** Establish Community Spaces Adjacent to Amtrak Station Building
- **C.** Create Enhanced Pedestrian Connections to Adjacent Neighborhoods
- **D.** Provide Community Access to the Cooper River
- **E.** Develop Vacant Parcels in the Area to Complete Street Face
- **F.** Reinforce Existing Uses in Olde North Charleston Downtown through Infill Development
- **G.** Separate Freight and Local Traffic on Virginia Avenue

North Charleston
Convention Center & City Hall



KEY IDEAS

- **A.** Create New Multimodal Street Corridor
- **B.** Realign Montague Avenue as a New Connector Route
- **C.** Provide Multiple Transportation Options
- **D.** Redesign Rivers Avenue/Montague Avenue Intersection
- **E.** Establish Mixed Use Activity Centers
- **F.** Establish Appropriate Scale and Transition for New Development
- **G.** Phase In New Development and Structured Parking Decks to Replace Surface Parking Lots

South of Mount Pleasant

Short Term Plan

South of Mount Pleasant

Intermediate Term Plan

South of Mount Pleasant

Long Term Plan

North of Mount Pleasant

Short Term Plan

North of Mount Pleasant

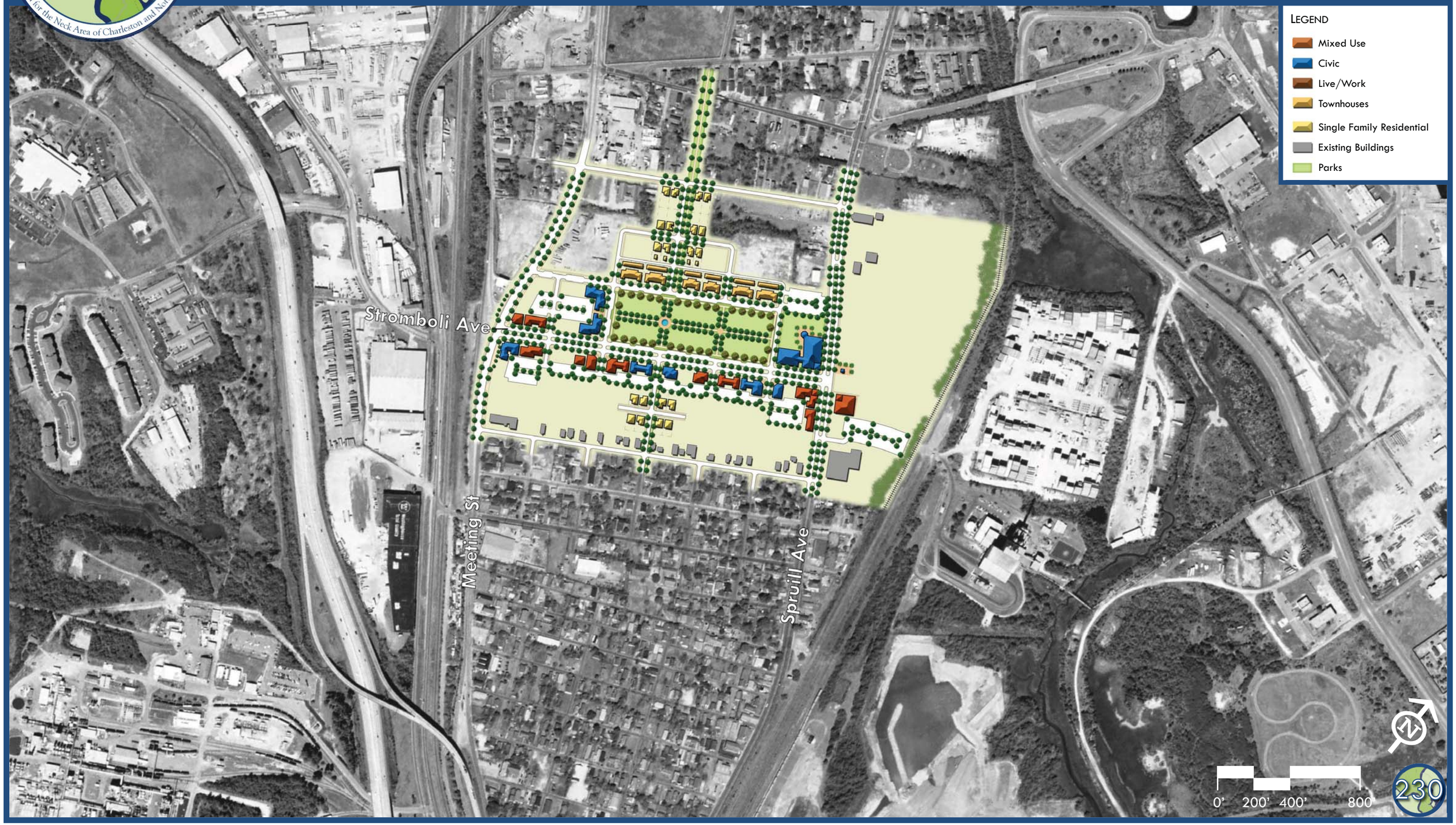
Intermediate Term Plan

North of Mount Pleasant

Long Term Plan

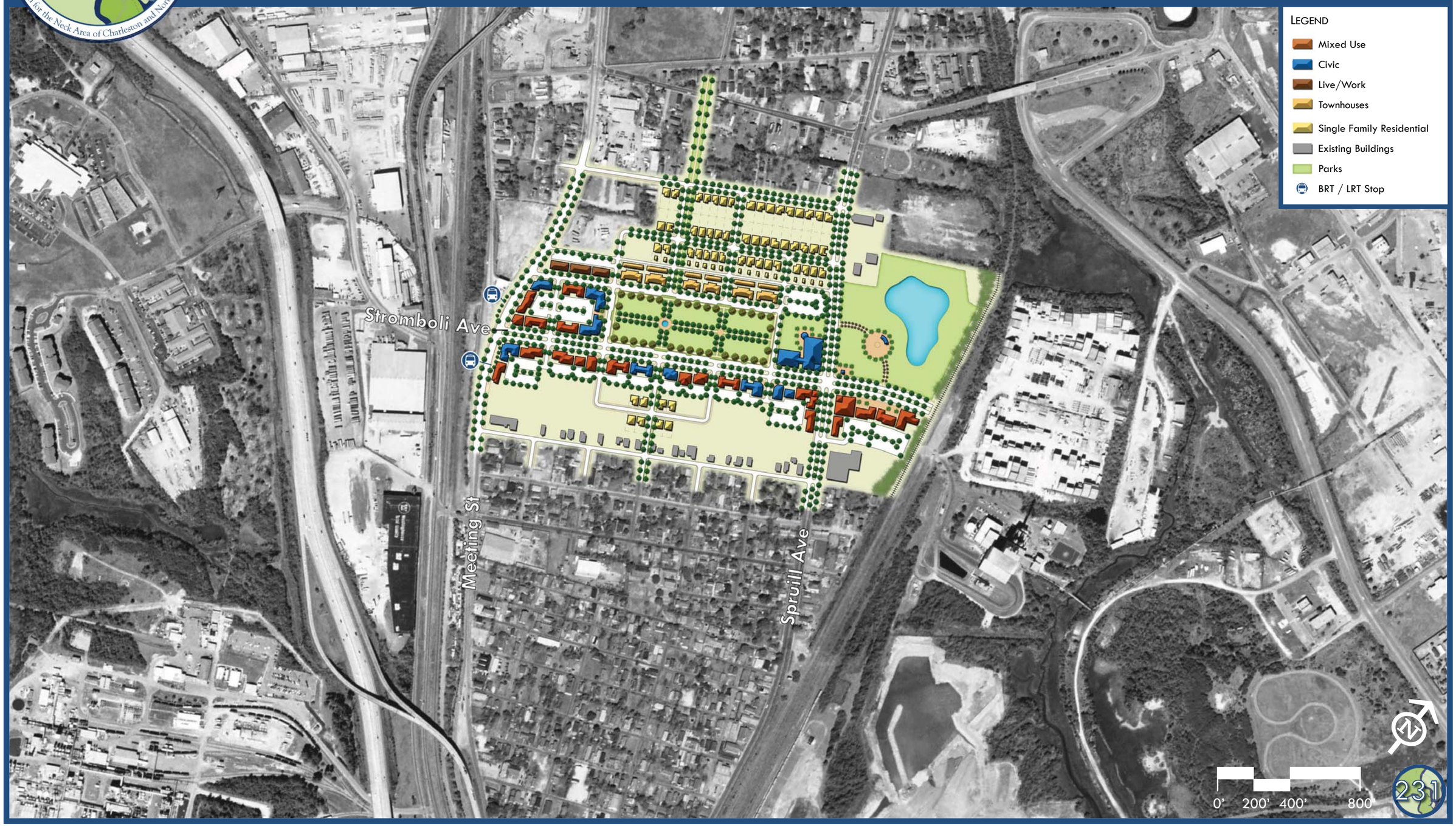
Stromboli

Short Term Plan



Stromboli

Intermediate Term Plan



Stromboli
Long Term Plan

Shipwatch Square

Short Term Plan

Shipwatch Square

Intermediate Term Plan

Shipwatch Square

Long Term Plan

Olde North Charleston

Short Term Plan

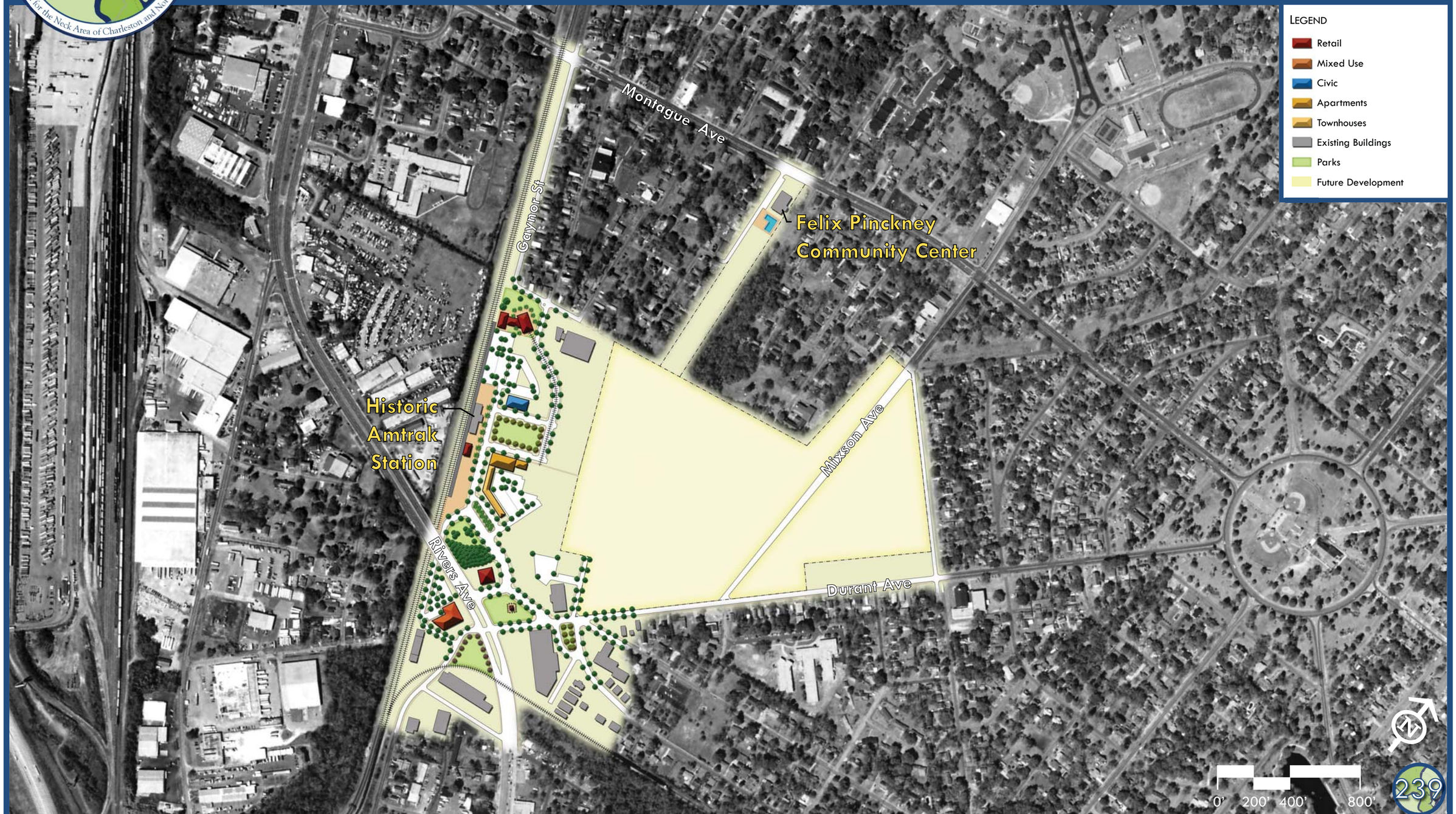
Olde North Charleston

Intermediate Term Plan

Olde North Charleston

Long Term Plan

Amtrak
Short Term Plan



Amtrak

Intermediate Term Plan

Amtrak
Long Term Plan

Amtrak

Intermodal Site Option

Mall Drive Area

Short Term Plan

Mall Drive Area

Intermediate Term Plan

Mall Drive Area

Long Term Plan

Convention Center

Short Term Plan

Convention Center

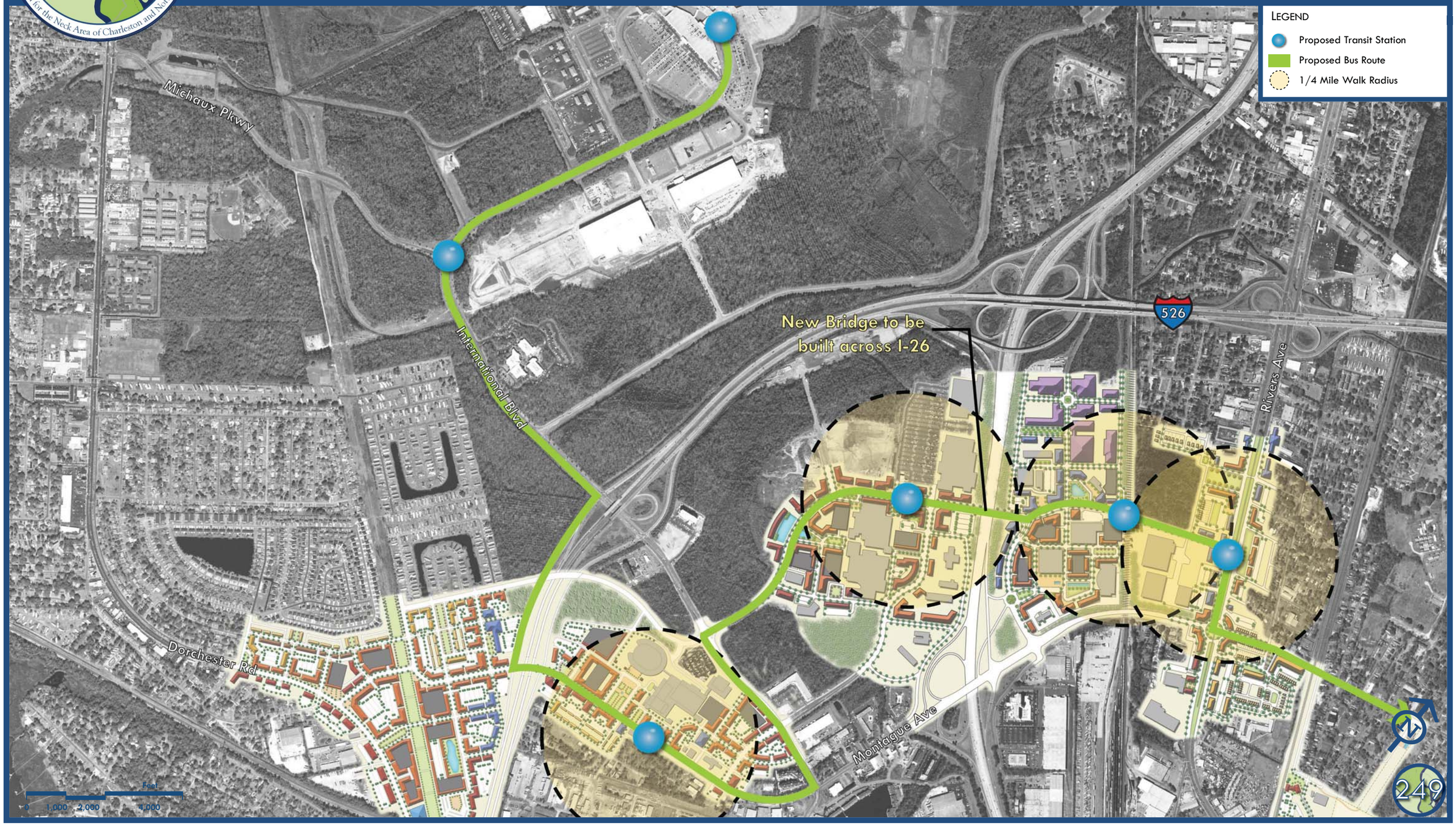
Intermediate Term Plan

Convention Center

Long Term Plan

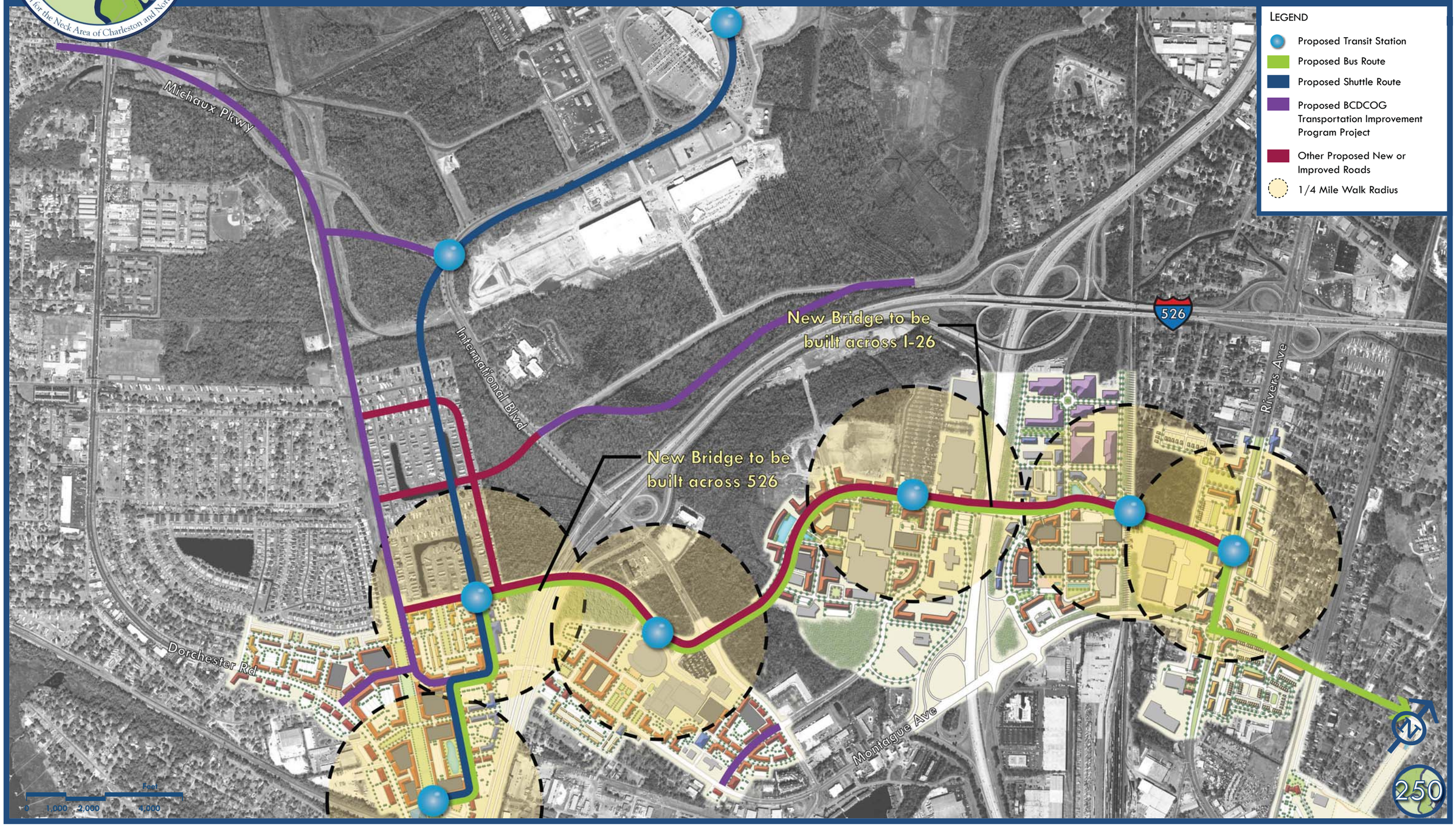
Gateway Connectivity

Short Term

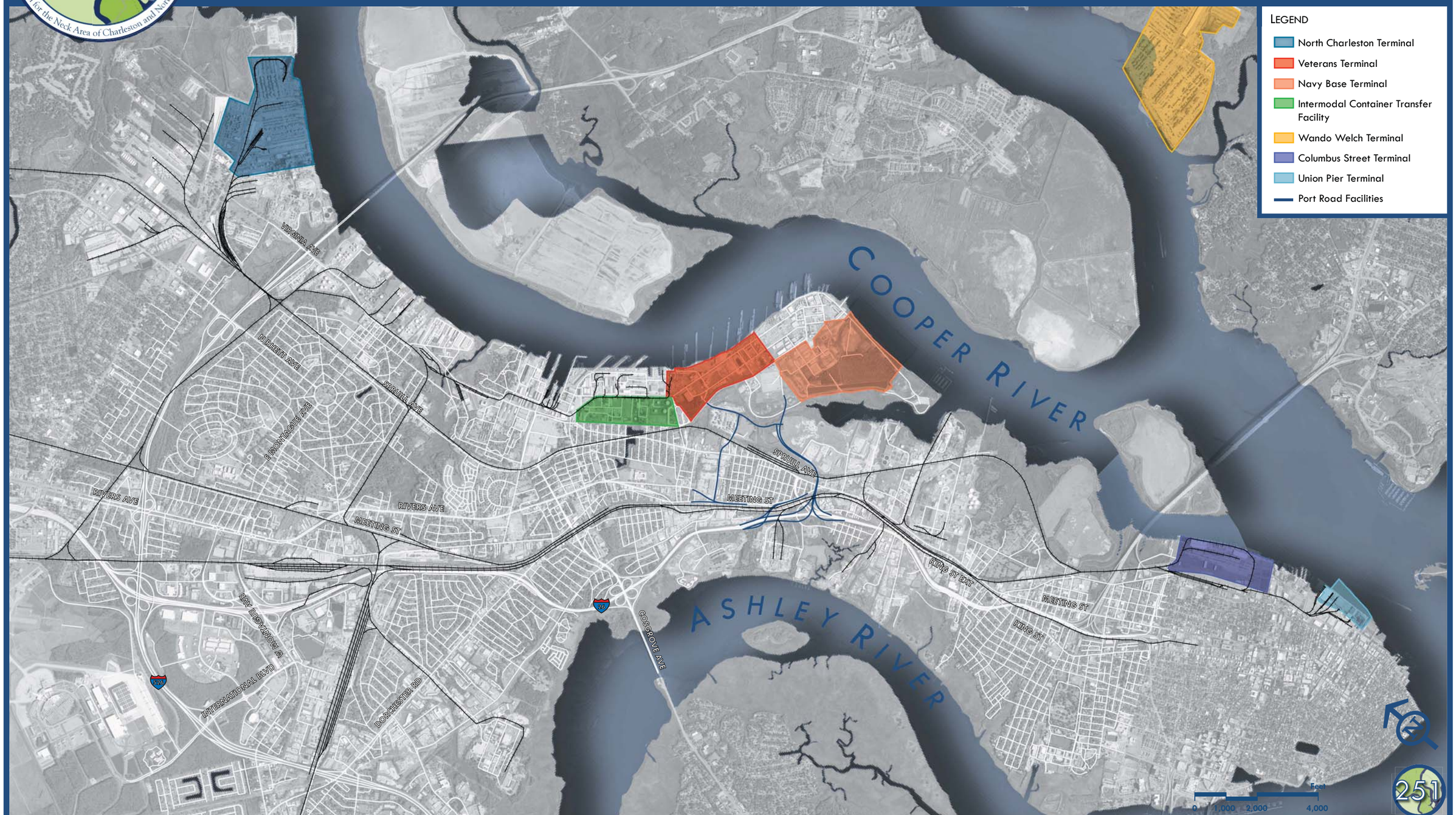


Gateway Connectivity

Long Term

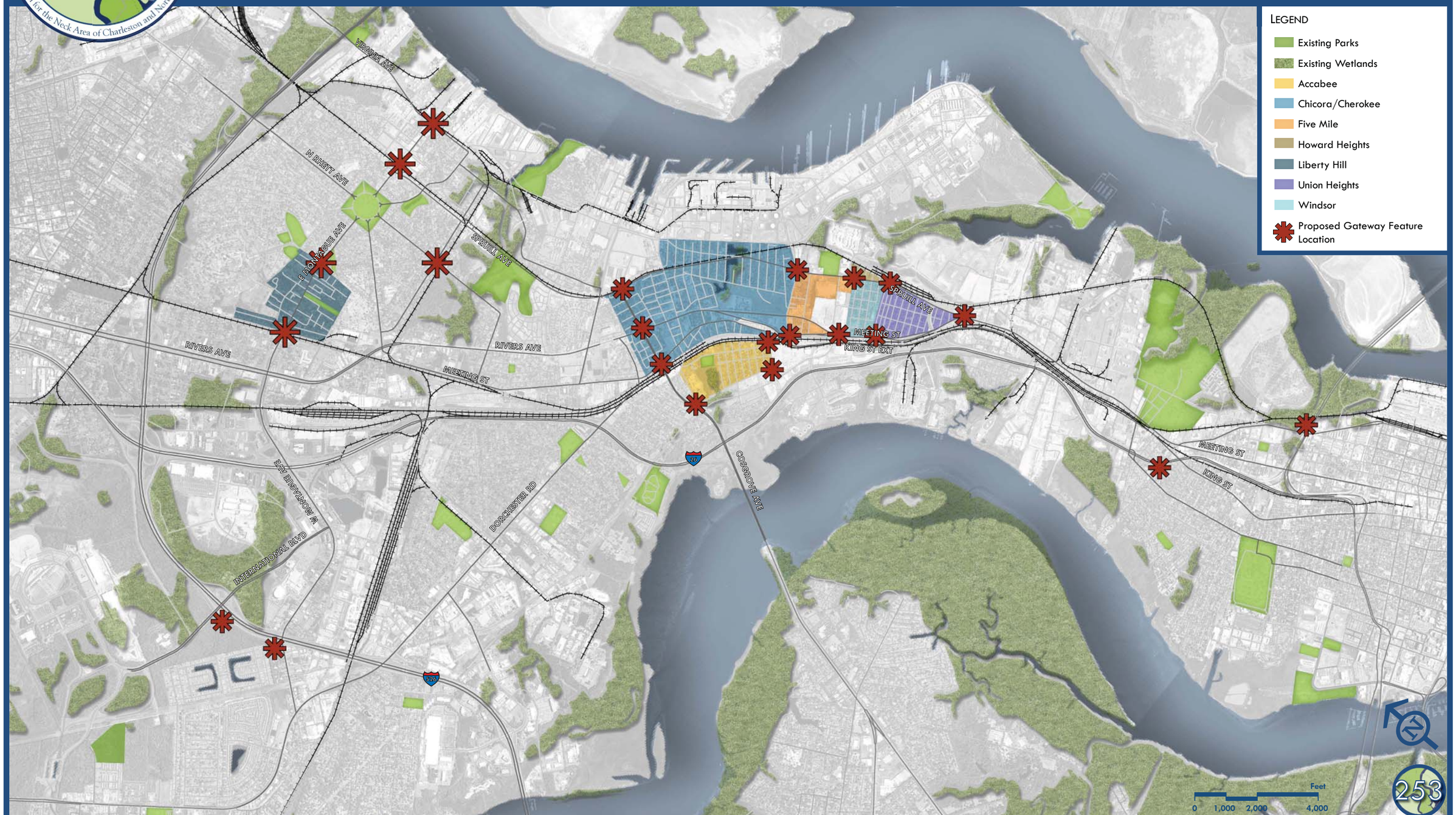


Port Facilities



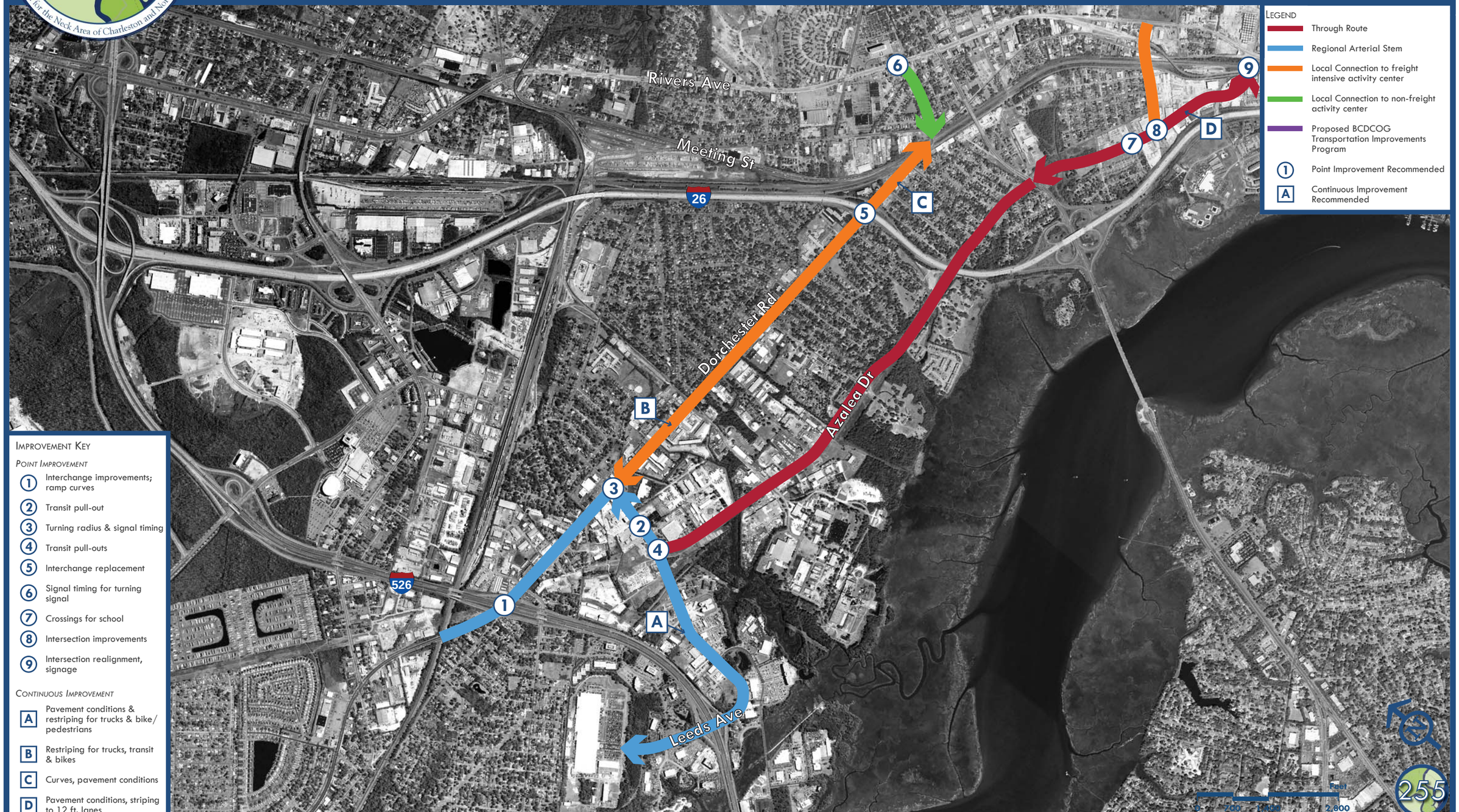
Buffer Treatments

Community Identity



Recommended Road Improvements

Dorchester Road Corridor
Recommended Road Improvements



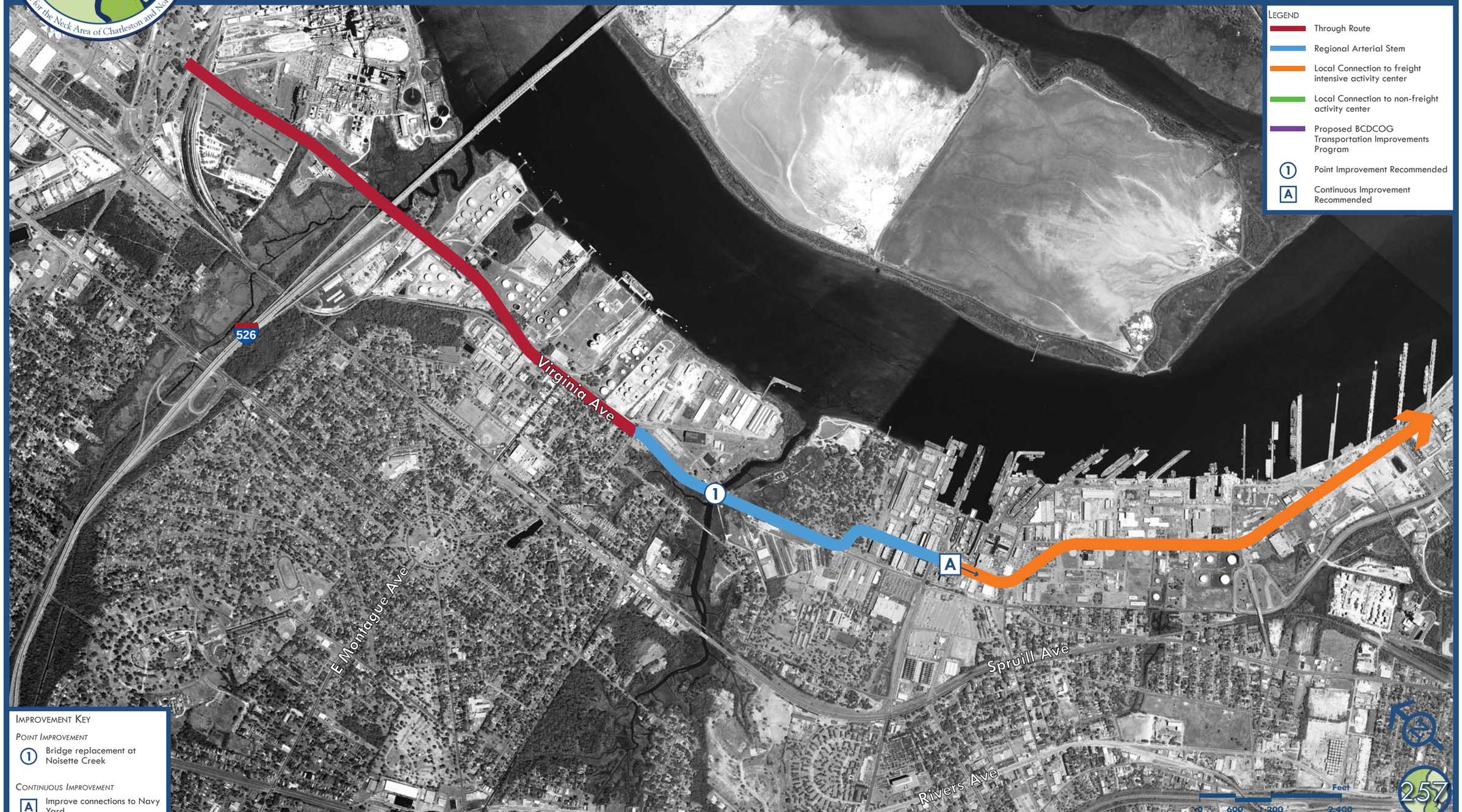
Cosgrove Avenue Corridor
Recommended Road Improvements

Improvement Key

Point Improvement

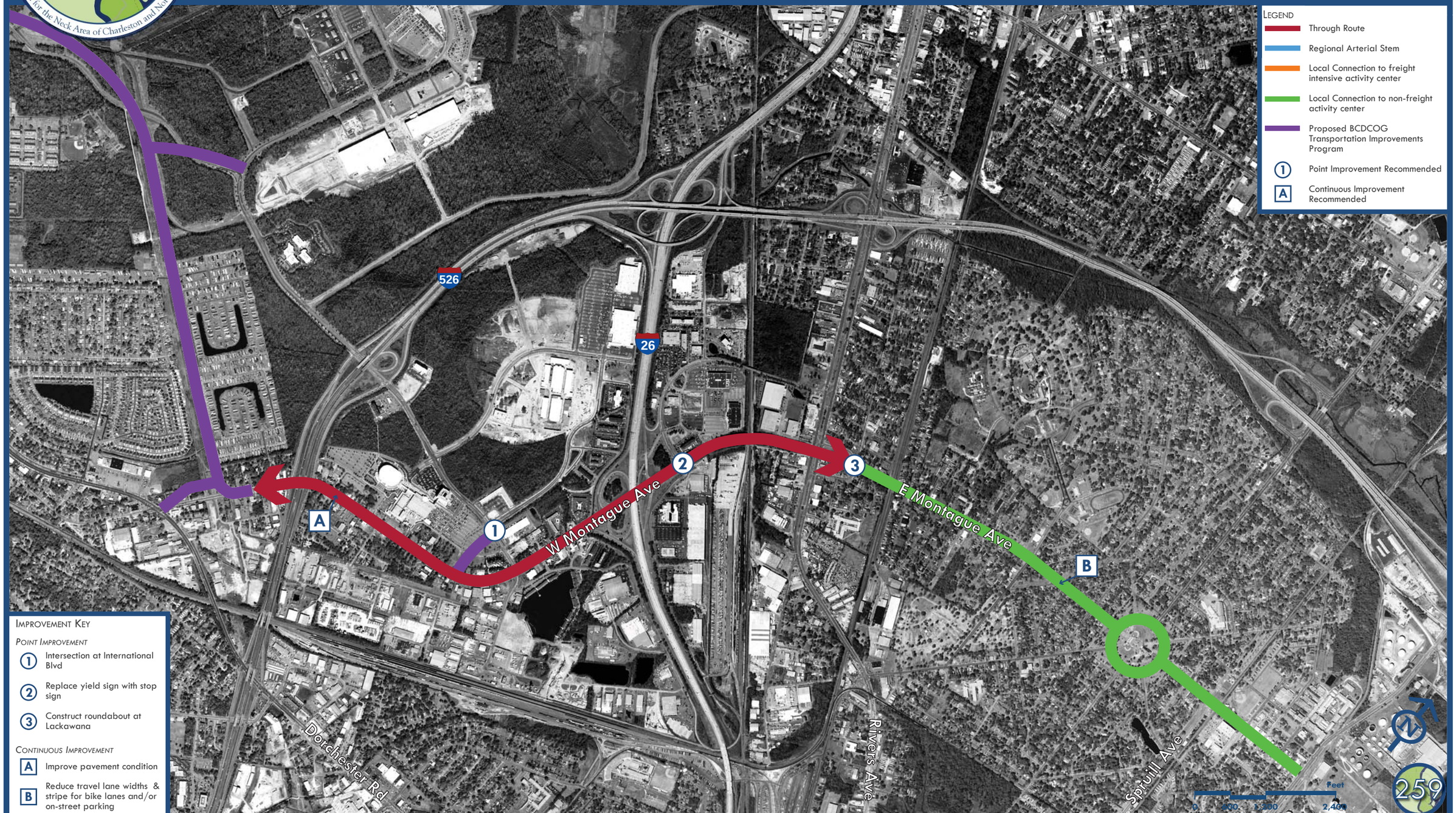
1. Intersection turning radius
2. Intersection turning radius & signal timing
3. Interchange replacement

Virginia Avenue Corridor
Recommended Road Improvements



US 52 / 78 Corridor
Recommended Road Improvements

Montague Avenue Corridor
Recommended Road Improvements



Vision Map


Legend
Connection Corridors
Catalyst Area
Multimodal Corridor
Open Space Corridor
Industrial Hub
Placeholder for Final Vision Map
Cooper River
Ashley River
Virginia Ave
N Rhett Ave
E Montague Ave
Spruill Ave
Rivers Ave
Meeting St
King St Ext
King St
W Montague Ave
International Blvd
Dorchester Rd
Feet
0
1,000
2,000
4,000

Appendix B
Public Participation

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Public Participation

Focus Groups & Stakeholder Interviews

A series of individual stakeholder interviews and focus group discussions with various organizations and interests in the Neck area were held to establish the foundation for the visioning study. The summary of these interviews and discussions are as follows:

Introduction

Along with data collection and review of existing plans and policies, the foundation for the Neck Area Master Plan is being established through a series of individual stakeholder interviews and focus group discussions with various groups and interests in the study area. The focus group meetings and individual interviews were designed to obtain the perspectives and observations from a diverse array of interests that have a defined role in shaping the future of the Neck Area. The meetings helped to set the stage for a broader community dialogue through the master plan process about growth and development needs, challenges and opportunities facing the Neck Area over the longer term.

The purpose of the focus group discussions was to identify community values and opportunities from the perspectives of different interests within the study area. Two focus groups have been held – one focusing on economic development and another on freight users. The following groups participated in the meetings:

- Freight Users: Neal Brothers, Superior Transportation, Hunter Transportation, Charleston Motor Carriers
- Economic Development: City of Charleston, City of North Charleston, Charleston Regional Development Alliance, Department of Homeland Security Federal Law Enforcement Training Center (FLETC), Charleston Trident Association of Realtors, The Noisette Company, National Oceanic & Atmospheric Administration (NOAA) Coastal Services Center, Charleston Metro Chamber of Commerce, Charleston County Economic Development

The discussions provided an opportunity to generate ideas and feedback on opportunities for change in the Neck area as well as challenges to be addressed. Each meeting involved from four to 12 people and lasted between one and two hours, entailing a freeflow discussion facilitated by the consultant using a discussion guide. The meetings were not formally recorded, but a written summary of each discussion was prepared.

The stakeholder interviews entailed more informal conversations with steering committee members, key agencies, organizations, and property owners within the study, including a number of elected officials. These one-on-one conversations offered an opportunity to hear their perspectives on issues and opportunities in the Neck area, and they have been used for overall context of the focus group discussions. Stakeholder interviews were conducted with the following: Steering Committee members (Charleston County, City of North Charleston Mayor's Office and Planning Department, City of Charleston Traffic & Transportation, and South Carolina State Ports Authority); several elected officials each from the City of Charleston, City of North Charleston and Charleston County; Lowcountry Alliance for Model Communities (LAMC); City of Charleston staff (Planning Department, Neighborhood Services); Coastal Conservation League; Charleston County Economic Development; Metanoia; South Carolina Public Railways; and Kinder-Morgan.

This document provides a summary of the key themes, values, and issues and opportunities that will likely influence the planning process and development of the initial vision for the Neck Area. It is not meant as an inclusive documentation of all comments, ideas and suggestions; but rather serves to highlight areas of general consensus and where further community dialogue is needed.

Community Values

The Neck area (from the Crosstown/US 17) to the I-526/Airport/Boeing area is a diverse area with distinct neighborhoods, commercial districts, industrial areas, and community facilities, such as schools, parks, recreation centers, and libraries. The study area creates the intersection of the Cities of Charleston and North Charleston and serves as the center of the region for freight movement and business activity, and as a regional retail destination. With the closing of the Charleston Navy Yard and planned development of a new container port on a portion of the Navy Yard site, the Neck area can strengthen its position as a focal point for economic development and expansion of the region's economic diversity. Plans for the Neck area would be disingenuous, however, if they did not consider the existing plans for the area as well as the unique qualities and needs of the people who live and work in the area, both now and in the future. The power of the community comes from the people who make up that community – those who feel a sense of belonging and commitment to caring for the place they live and/or work. Throughout the focus group meetings and stakeholder interviews, several themes have consistently arisen as hopes and values for the future of the Neck area. While not stated in exactly the same words by all, the following themes/values have been identified to guide the planning process as we move forward to the Community Forum and develop the draft vision for the future.

- Economic Freedom
- Community Vitality
- Connectedness
- Environmental Health

Challenges

The key challenges or issues facing the Neck area reflect major changes in the recent past in land uses, employment, and industry in the area and the differing goals that the cities of Charleston and North Charleston may have for the future of the area. The issue of rail service into and through the Neck area to access the Port of Charleston and other major freight users looms large and a level of uncertainty exists. However, it is clear from the number of planning efforts, including the LAMC Revitalization Plan, the Tri-County Our Region Our Plan process, and various commuter and light rail studies, that the Neck area is poised to be the center of the region's growth when the current economic difficulties lessen. As such, the jurisdictions and agencies with responsibility for various aspects of the community, including the two cities, Charleston County, South Carolina Department of Transportation, and others, will benefit greatly from a clearly-defined vision for the future, detailed plans and strategies for moving forward to build on existing plans and create the future they articulate.

The following challenges were identified as consistent themes during the meetings and interviews:

Rail access to the area. The competing plans for rail access to the Port and through the Neck area and old Navy Yard leave a great deal of uncertainty about the future rail network and needs in the study area. Resolution on the rail issue will provide a more solid starting point for development of the land use portion of the Master Plan and evaluation of future scenarios. There is general consensus that the rail line that runs up with Park Circle (along Spruill) would be removed/taken out of service). Freight movement by rail is expected to increase.

Planning fatigue. Because a number of neighborhoods have recently developed plans for the future of their neighborhoods and surrounding areas, they may be less likely to get involved in this master planning process. For that reason, separate outreach is being undertaken and may be warranted later in the project to ensure their involvement and buy-in to the plan.

Stalled development plans. There are a number of planned developments in the area that have generally stalled because of the economy. These developments include Noisette, Magnolia and The Promenade, and they may provide an opportunity to reconsider development patterns that are desirable for the Neck area.

Freight movement/access. Both interstate and local corridors are needed for truck freight movement. Access to I-526 and I-26 is important, but those roads cannot handle all truck traffic. The Stromboli corridor is under consideration for a local access connector.

Poor housing stock. There is a lack of quality affordable housing in the study area. There is a great deal of substandard housing in the area, and the City of North Charleston has a program underway to demolish unusable buildings (not just residential) and rebuild as possible.

Permit and development approval processes. Freight users have had difficulty permitting the office locations and identifying safe and appropriate routes within the City of North Charleston, due to development, permit, and site plan regulations.

Opportunities

Neighborhoods. The neighborhood councils in Charleston and North Charleston are strong and active, taking pride in their communities and involved in decision-making processes that affect them. Several of the neighborhoods, such as the LAMC neighborhoods, have undertaken a great deal of planning already for their future and are implementing these plans. The neighborhoods in the study area generally want to be involved and will be interested in the plan. Sensitive infill development can provide needed services and employment opportunities while retaining the character of the surrounding communities and/or creating a new district. Grassroots outreach is the key to getting residents involved.

Unified plan. Several stakeholders mentioned the important of a unified plan for the Neck area that incorporates existing plans as appropriate and provides implementation strategies that the two cities and Charleston County can support and promote in their policies, decisions, programs, etc., and balance competing interests.

Multimodal transportation

- While CARTA provides fixed route transit serving the Peninsula and Tri-County Link provides regional transit service, there has been discussion of light rail or commuter rail service (or some form of premium transit) for the future. Elected officials from both cities are very interested in commuter rail, and the Coastal Conservation League has proposed a light rail line serving key activity areas.
- In addition to public transportation, much can be done to improve conditions for bicycling and walking in the area, where a large number of people already bike or walk for transportation.
- The roadway network in the Neck area is under capacity at this time, due to changes in traffic patterns and volumes. Some local government staff felt that the current excess capacity was needed for future growth (both residential and commercial/industrial) in the area, while others indicated that not all the capacity was needed, even for future infill/redevelopment, and there might be an opportunity to modify some of the corridors to serve as more "complete streets." Meeting Street and King Street are two parallel corridors that could be evaluated for modification.

- Intermodal center. A site has been identified for a CARTA/Amtrak/Greyhound intermodal passenger transportation center.

Land use/mixed use development. As mentioned above, several developments planned for the area have been abandoned or delayed, and the Master Plan should identify the appropriate land uses and development patterns for these areas as well. The City of Charleston is interested in increased residential development in the area, as is the City of North Charleston, though its focus may be more on preserving/strengthening existing neighborhoods and bringing in economic development and jobs. Reynolds Avenue provides a potential corridor for mixed use/commercial development.

Environmental justice. The neighborhoods in the study area care about air quality, especially issues that arise with industrial development. These neighborhoods have mobilized in the past to speak out against development that they felt would negatively affect the quality of the air they breathe. Other issues relating to environmental justice involve keeping communities intact and not allowing them to be divided by transportation facilities such as the Port Access Road.

Green industry. With a large amount of vacant and underutilized industrial areas, the Neck area is a prime location for future green industry and light industrial uses. In fact, the Clemson University wind turbine facility provides an opportunity to bring in a cluster of complementary green businesses. Key industries being targeted by economic development professionals for this area include manufacturing, company headquarters, research & development, and distribution facilities.

Food and services. The Neck area is generally considered a "food desert," where there are lower-income neighborhoods without access to a grocery store. An agricultural center is opening up on Morrison Drive to provide an opportunity for residents to purchase fresh produce from local farmers. In addition, a number of sites are being considered or are under development as retail centers with grocery stores.

Topic Areas Needing Further Dialogue/Resolution

The following issues were discussed at length, with differing opinions and perspectives expressed during the process. These issues will need continuing dialogue and focus during the remaining phases of the planning.

- Appropriate locations for mixed use, residential, development and commercial centers. Especially important will be identification of areas where higher densities are desired.
- Involvement of and buy-in from neighborhood residents in the planning process. Over the life of the project, many targeted meetings may need to be held with neighborhood councils and other organizations involved in the study area to ensure that we receive their input.
- Rail access. While the Master Plan process cannot influence the ultimate solution on the rail access issue, the plan will certainly be impacted by the results. The land use patterns and transportation network will differ based on what rail lines remain, what news lines are added, and/or changing travel patterns on existing lines.

Stakeholder Interview/Focus Group Summary – May 9, 2011

Public Meetings & Events

Community Forum

Three public meetings and a five-day community planning charrette were held during the visioning process to give the public opportunities to provide input. The results of the Community Forum are as follows:

Figure B.1 Community Forum Flyer

Partnership for Prosperity
Community Workshop

Thursday, May 19, 2011
5:30pm to 8:00pm
Military Magnet Academy Cafeteria
2950 Carner Avenue, North Charleston, SC

Help Create a Unified Master Plan for the Neck Area!

Workshop Objectives

- Review Master Plan objectives, process and schedule
- Review background data and current planning efforts
- Get input and guidance on your ideas, concerns and visions for the future

Workshop Agenda

5:30pm – 6:00pm	Open House and Review Materials
6:00pm – 6:30pm	Kick-off Presentation
6:30pm – 7:15pm	Small Group Exercise
7:15pm – 7:45pm	Group Reports
7:45pm – 8:00pm	Next Steps and Informal Discussion

WORKSHOP EXERCISE 1

Partnership for Prosperity

Community Forum

May 19, 2011

Exercise 1: Identifying the Community Values for the Neck Area

We have reviewed plans and met with individuals and agencies. We have begun the conversation about the future of the Neck area for this master plan, but the conversation needs to continue. Values lead to vision; vision leads to agreement; agreement leads to action. The values listed below came from our conversations, but we need your input and affirmation that they describe what the Neck area will be in the future. **Please review the VALUES listed in the table below, and add your own words to answer this question:**

What would the Neck area be like if the following values were achieved?

Economic Freedom
Examples: diverse housing opportunities, wide range of jobs and job-training, transportation choices, proximity to community services and shopping
Community Vitality
Examples: arts, entertainment choices, gathering places, diversity, destinations, historic and cultural identity
Connectedness
Examples: belonging, accessibility, safety, eyes on the street, portals, sidewalks, mobility
Environmental Health
Examples: sustainability, preservation, clean air and water, open space, recreation
Other values that are important to you?

WORKSHOP EXERCISE 1 SUMMARY

Partnership for Prosperity

Community Workshop

Summary

The following sections highlight the information that was collected from completed surveys at the May 19th community forum workshop. These surveys asked respondents to envision what the Neck area would be like if certain values were achieved.

Economic Freedom:

- Available day care
- Create a desirable location to raise children
- Affordable, safe housing opportunities
- Maintain an even distribution of services/mix of uses and housing types/levels
- Greater need for home ownership
- Reduce crime
- A community that is college-bound and college-linked (resources)
- Improved education achievement/options
- Inclusion of more college preparation institutions in the community
- Transportation choices both within and throughout the neighborhood
- Express bus options that service the Park Circle area to the downtown and other attractions
- Bike/ped improvements needed to connect Park Circle to jobs
- More choices needed for biking that connect to local attractors, such as Riverfront Park
- Bus stops in close proximity to schools
- Healthy food options
- Options for community freedom and sustainability practices
- Diversity of residents
- Focus on small business incubators
- Walkable business districts
- Maintenance and improvement/strengthening of existing neighborhoods
- Amenities needed to enhance existing neighborhoods and to maintain character
- Diverse options for retail/services
- Diverse selection of job opportunities
- Equal access to economic development
- Encourage infill development
- Enhance retail development
- Emphasis on bringing tourism to the area
- Redevelop Navy yard
- Industry and transportation options that don't negatively impact neighborhoods
- Desire for a live/work/play environment
- Greater options for business owners
- Job training that is focused on the youth of the area
- More locations for job training centers
- Creation of green sector jobs
- Connect ex-felons to job opportunities

Community Vitality:

- Desire for medical facilities
- Need to identify culturally significant resources
- Historic/cultural preservation
- Improve the character of the area
- Involve neighborhood HOA's for cultural events
- Walkable retail/arts/entertainment options
- Walkable, complete streets that are well integrated with the community
- Mixed use neighborhoods
- More retail choices and better public schools
- Improve/upgrade community centers
- Creation of multi-purpose/function schools (i.e. Chicora Elementary)
- Cultural/community center needed for community events (i.e. art exhibit, shows)
- Accessible transportation options (i.e. frequent bus stops/shelters)
- Economic vitality of the residents is needed
- Desire to become a destination place for tourism
- Rebranding of the North Charleston area
- Increase more areas for outdoor gathering opportunities (i.e. community centers, farmers markets, parks)
- Focus on activities/amenities for children (i.e. new playgrounds in parks)
- Create context sensitive nodes

- Create an environment for political forums and community policing
- Involve young people
- Increase the opportunity for social/recreational outlet to reduce youth crime/ drop-out rate
- Healthy neighborhoods
- Environmentally friendly

Connectedness:

- Infrastructure that is networked with the community
- Desire for more east/west corridors
- Bicycle/pedestrian connections and amenities needed throughout the community
- Well defined, transportation signage (i.e. way finding)
- Increase ridership by incorporating Wi-Fi on the public transit system
- Connection to rails desired
- Desire for full-time crossing guards on major roadways to improve safety
- Need for a connection of residential to retail
- Need to connect isolated neighborhoods (i.e. Rosemont)
- High achieving, neighborhood schools
- Use of existing schools for community uses
- Support services for senior citizens
- Connect youth with the community
- Cleanup waterways (i.e. Noisette Creek)
- Removal of unused, external industrial components (i.e. pipes)
- Bring job opportunities to lower income neighborhoods

Environmental Health:

- Need for access to fresh agricultural products
- Walkable public transit
- Clean-up of certain areas within the community (i.e. superfund site)
- Remove/demolish abandoned/condemned houses
- Redevelopment of Brownfield sites
- Trash/litter pick-up initiatives (i.e. recycling)
- Reduction in air pollution by using sound transportation options
- Environmental conservation
- More green space needed in neighborhoods
- Develop existing nature preserves
- Increase landscaping to improve air quality and aesthetics
- Create sustainability goals for the area
- Educational opportunities for children about environmental awareness

Other Values:

- Need for family friendly neighborhoods
- Interaction with community residents is key
- Improve property values

The following comments were collected from flipcharts at the May 19th community forum workshop. These flipcharts were used in conjunction with maps that were provided of the area. Multi-colored dots were assigned on the maps to address areas of interest/concern. The first section of this summary addresses the comments recorded from the maps. The next illustrates the comments from the flipcharts.

Map Comments:

Places:

- Academic/Magnet School of Arts, Oak Terrace, North Charleston Creative Arts Elementary School
- Accabee
- Accabee Community Center
- Accessible library, grocery, convenience, post office
- Area at the end of Everglades Dr
- Area of Rutledge Ave & Kyle Pl.
- Charleston County Public Services Building
- Chicora Elementary/Community Center (needs community space)
- Community Center at old paper company on King Street or reopen skating ring.
- Community Center (area off of Hottinger Ave)
- Community Fishing crabbing areas(southwest of the shipyard)
- Community gathering (area (South of Orvid St & Rivers Ave)
- Connection restored environment (Area around Wood St)
- Danny Jones Recreation Center
- Dorchester Rd & Whaler
- Downtown Old North Charleston (local, regional)
- Ferndale - Focus on revitalization, esp. commercial. Focus on Rivers Ave

frontage (Housing) infill opportunity (Rivers Ave & west of Norwood St)

- Food (Milford St & Meeting Street Rd)
- Gestman's Community Center
- Greenbuilt Project
- Housing with neighborhood commercial (area at intersection of I-26 & Baker Hospital Blvd)
- Incinerator cleanup and development? potential green space? (Near Boxwood Ave & Spruill Ave)
- Industry (near the port)
- Intermodal Center (area between I-526/ highway 642/ RR tracks)
- Jenkins Orphanage is a historic landmark
- Joppa Ave & Irving Ave area
- LAMC working on job training center
- Library (Intersection of E Montague Ave & McDowen Ave)Proposed Maritime institute - local/regional benefit (area around Stromboli Ave)
- Marina (off of Juneau Ave)
- Military Magnet School
- New mixed use area town mains (area south of Jacksonville St, between Spruill Ave & Meeting Street Rd and just north of Hampton Ave)
- North Charleston City Hall
- N. Eniston Ave - Develop community park for children. Area floods and needs to be rain proof at King St & Mt Pleasant St.
- Old North Charleston (Look at Map)
- Park Circle
- Reconnecting (North of Hagood Ave)
- Recreation & Affordable Housing (area within Orvid St/Chicora Av/Clements Ave & rivers Ave)
- Rehab of old bldg (7th St)
- Reuse of Amtrak station after the Multimodal center opens
- Riverfront Park
- Shipwatch Square
- Stromboli Corridor
- Truxton Ave & Avenue B Area
- Union Heights
- Waterfront Park (local, region)
- Waylyn Community Center

Pathways:

- Area of Veneer Ave & Doyle Ave
- Area of Dewey Street & North Tracy Street
- Park & Ride (area slightly NW of I-526 & International Blvd)
- Park & Ride Ash. Phos. (area slightly east of Trailwood Dr & Dorchester Rd)
- Sidewalks needed (Hugo) (Area from Arbutus Ave - Joppa Ave)

Barriers/Problems:

- Abandon dilap houses hazard in area (intersection of Spruill Ave & Delaware Ave)
- Accabee area air quality control issues (Azalea Dr & Harvey Ave)
- Air pollution due to increase traffic on interstate
- Area of Rutledge Ave & Spruitt Ave
- Area on the northwest corner of Spruill Ave & Stromboli Ave has shipping containers stacked high in the community (a concern). *There's also a health concern due to rat infestation
- Boat ramp needed (south of shipyard on the tip of peninsula)
- Challenge for connecting to water (E Montague Ave near the water)
- Community water access needed (south of shipyard)
- Compatibility of industrial uses w/ neighborhoods (area of Accabee Rd/ Mott Ave/ Highway 7)
- Compatibility of industrial uses adjacent to residential zoning (area east of Shipyard Creek Road along the proposed road)
- Crime corridor along railroad tracks (parallel to I-26)
- Debonair Site Brownfield (community wants to use this site to expand community center)
- Information (area SW of Highway 7 & I-26).
- Industrial in residential area/blight (area around Comstock Ave)
- Intersection of Dorchester Rd. & Meeting Street Rd
- Lack of youth activities in the peninsula
- Need accessibility (located directly on the Ashley River & west of Kingsworth Ave)
- Noise/Light pollution from Port Access Road to the community
- No safe bike routes (King St Ext)
- Schools (On I-26 & Dorchester Road)
- Tracks near neighborhoods need buffering (Spruill Ave & Delaware Ave Area)
- Uncertainty associated with rail yard

Historically Significant/Important Cultural Sites:

- Chicora Elementary
- Downtown Old North Charleston
- Florida Ave & Deland Street
- Hampton Park
- Intersection of Clements Ave & Rivers Area
- Intersection of Greenleaf St & Spruill Ave
- Jenkins Orphanage
- Joe Riley Stadium
- Kephart Street (by the port)
- Liberty Hill
- Magnolia Cemetery
- Maryford Elementary
- Union Heights Community Center
- Area just west of the intersection of Shobson Ave & North Port Drive
- Community center at old paper company or reopen
- Directly south of Braswell Street

General Comments:

- General comment - role of mass transit & development looking into the future
- Mass transit issue (corner of Lenox Street & Railroad tracks)
- Remount Road - Freight & vehicle
- How to get across Braswell St to Meeting St
- Take S-line out of service
- Reynolds Ave as a business incubator
- Reynolds Ave - bring back vitality
- Express bus (Along S. Rhett Ave from S. Park Pl to Rivers Ave and continuing down Rivers Ave) (Look at the map)
- Connect both sides of I-26 (Stark Ln & Dorchester Rd) Look at the map.
- Also connect Park Circle to job centers via bike path (federal enclave)
- Reynolds Ave & Chircora (circled in green)
- Cleanup along railroad tracks
- Connect Stromboli Ave & N Hobson Ave areas
- Potential ferry service up & down river (river to the east of the Neck)
- Blue lines: King St - South to Mt. Pleasant St - Needs bike accom/ sidewalk - Meeting St & Spruill Ave
- Unsure of purpose/use of local port access rd (Stromboli Ave)
- Public transportation needs to be user friendly for residents & need incentives
- Rail yard (around Hillcrest Dr & Meeting St rd)
- Transit connection (along I-26)
- Need more access to Ashley (Highway 7 - south of Baker Hospital Blvd)
- Isolation by RR & bridge (area between Duran Ave & W Jimtown Dr)
- Rivers Ave - barriers: unfriendly to pedestrians, streetscape lacking in portions, consider underground utilities/ street lighting improvements
- Neighborhoods impacts of rail line (area between I-526 & I-26)
- Do not cut off access to Riverfront Park w/ rails
- Neck area needs sidewalks. 9. Need more lighting & bike routes along King St Ext.
- Bike Path needed (Park Circle - Dyess Ave & S Hobson Ave)
- Sidewalks/bike routes (along Dorchester Rd)
- Bike routes along King St Ext to King & Beaufain Streets to connect roadways for college students, residents
- Safety concerns - bikers, walkers along King St Ext.
- Bikes/trails needed from Noisette - Park Circle
- Pedestrian safety (along RR tracks and just west of Van Smith ave (Look at the map)
- Pedestrian crossing needed (Highway 7 & Mott Ave)
- Pedestrian trail (from Joppa Ave to the water in a SE orientation)
- Pedestrian bridges across crosstown (large area to the south is circled)
- Pedestrian accessibility with ramp removal (area between Hampton Ave & Groveland Ave)
- More connectivity to Riverfront Park from Park Circle (bike path)
- Sidewalks needed (Along Dorchester Rd. from I-526 to I-26)
- Stromboli Ave - Improvement pedestrian oriented
- Walkable to Iris St to Jacksonville St.
- Safety (along Dorchester Rd)
- Lighting needed at Amtrak station and nearby area
- E-W connectivity across RR & I-26
- E-W connectivity (north of peace st & by proposed roadways)
- E-W connectivity (Baker Hospital Blvd - Barnaby Ln)
- E-W connection to Ashley river from school adjacent to Mott Ave
- Better signage for attractions (Hanley Park)
- Better sidewalks & bike lanes (Spruitt Ave & Meeting Street Rd)

- Sidewalks (area of Bonds Ave to Madden Dr)
- Opportunities in the median for transit/bike/ped (along Rivers Ave)
- Better signs near I-26 & I-526 to bring people in
- Boat ramp needs better sign ! (located SE of Virginia Ave & I-526)
- Rail lines poses significant barriers (roads, pedestrians, etc.)
- Could use old rail lines for trolleys & commuter trains
- Need better street lighting throughout
- Need bus system to transport elderly
- Where appropriate: Skybridges?
- More presence of patrol/safety to control traffic (more signage prohibiting truck traffic)
- (Policy) Need to fill in "pockets" of unincorporated areas - better service provision
- Dash line expansion (see map)
- Need bike lanes & sidewalks (On Highway 7 & Highway 78 (King St) Look at the map)
- Connectivity between neighborhoods across Stromboli (i.e. Jacksonville Rd to Hampton Ave)
- Bike/ped access to Waterfront Park (rails - trails)
- River - bike, building/ urban farm, street scaping/beautification
- Like to see access to river for recreational purpose via Shipyard Creek
- Community access to Ashley River
- Access to water (Rivers Ave east to the water) (look at the map)
- Barriers to Waterfront Park access (RR tracks & Ohear Ave)
- Marina/boat ramp needed (end of tidewater Rd.)
- Difficult vehicular access to Marina
- Move porous border between base and neighborhood
- How to improve transition area? Between Chas & N. Chas?
- Buffer area needed (around Harmon St. & Herbert St)
- Phase I (along Rivers Ave & Highway 7)
- Power lines ugly (from Crosby Ave - Madden Dr)
- Area from Rivers Ave - Kephart St has green dash marks around it (Look at the map)
- Green space lacking in this area (Carlton St - Highway 7)
- Officer housing area (National Register) (area around pine rd)
- Focus on neighborhood commercial to serve surrounding residential (area from Gaynor Ave - Mixson Ave)
- Possible live/work (area around McDowell Ave & Montague Ave)
- Liberty Hill important to maintain neighborhood character
- Items identified on the map include: Saunders Clyde (School was circled), Saued Simons (school was circled), Mary rod Elem
- Keep existing residential integrity
- Address isolated neighborhoods
- Continued development of the Naval base to the community's benefit
- Job training opportunities connected to actual job opportunities in the neighborhood
- Economic & business incubators (Reynolds Ave, Stromboli corridor, Shipwatch Square)
- Isolation of Bridgeview
- Isolation of Silver Hill
- Isolation of Rosemont
- Neighborhoods isolated because of interstate/rail, difficult to access, potential env. impact of rail.
- Magnolia
- Four Mile (isolation of neighborhood?)
- Charleston promise area - schools & community dev (area west of Ashley River)
- Chicora Tank Farm Park
- Stay residential but revitalize (area from Shipyard Creek rd - Iris St.)
- Uncertainty associated with future of Naval hospital
- Uncertainty of future use of school site (Spruill Ave & Old Pine Cir)
- Business revitalization (corner of Rivers Ave/ RR Tracks/Polar Dr)
- Park opportunity (area between S Rhett Ave - Everglades Dr./River)
- Existing greenbelt property (president property) (along Meeting Street Rd)
- Use green space & parks to reconnect Union Heights, Five Mile, & Chicorn Neighborhoods
- Create public green space on the water for community (area between E Montague Ave & Kinzer St).
- The park off of Spruill Ave & slightly north of Shipyard Creek Rd needs to be developed
- Continued redevelopment of Navy base - to the community's benefit
- Business incubators - Stromboli- Industrial, Shipwatch Sq - retail/commercial, Reynolds - retail.
- Noise conflict wall (from west of Delaware Ave - I-526)
- Employee (On Norwood St)

- Macalloy Superfund
- Affordable housing, MU, recreation (Large circled area. Look at the map) - opportunity. Marina?
- Incentives/policies for wise development (transportation & industry that don't negatively impact residents)
- Areas in need of cleanup - throughout the Navy yard
- Crosswalks needed (green space located at S Park Pl where E Montague Ave ends)
- Shipwatch Square: Like to see grocery store & shopping center
- The following were identified: Charter School, Military Magnet School, Chicora Elementary, *Aussie Green Community Center, Accabee Community Center Mary Ford Elementary, a Community Park (corner of Mount Pleasant St & King St), Meeting Street Academy (corner of Cypress St & King St), James Summers Elementary & Charleston Materd Science
- Multi-use development (see LAMC's rev. plan)
- Better/Additional facilities for youth - between Romney/Klng & Romney/ Morrison Drive
- Lack of public meeting space/community space. Start of Calhoun Street
- Add community grocery store in park circle
- Federal enclave (area north of Pirate St & east of S Hobson Ave)
- Cleanup brownsfields areas. Environmental justice
- Maryford Elementary
- Health issues - community center health issues from bad air quality
- Silver Hill & Rosemont areas need sidewalks and safe bike routes for commuters
- Develop area for affordable housing, grocery store, parks (Area between Herbert St - Prosper St)
- Food Lion on Grove Street
- North Central has over 40 abandoned buildings in the area
- "Vivaar M" written on the map (By Ashley River text).
- Mt. & King Vinlautere Park.
- Jenkins Orphanage is a historic landmark
- Spruill Ave is a key connector
- All seven LAMC neighborhoods
- Restore shoreline/wetlands to protect from floods
- Connect to the river (Bonds Ave & Azalea Trail Dr.)
- Rhodia
- Shipyard Creek Rd - connect residents to future jobs !
- Connect Job Area to Noisette
- Stromboli Ave (circled)
- Job Area (area from 6th St - Slarrow St)
- Shipyard Sq - Future node
- Grocery store (on Gabe St)
- Rivers Ave needs more economic vitality

WORKSHOP EXERCISE 2

Exercise 2: Mapping Places, Pathways, and Barriers in the Neck Area

As a group, DISCUSS the following questions and MARK UP WITH MAP with your ideas. You may also fill in the spaces below with your responses.

1. **PLACES (using** GREEN dots and/or markers**):**

   a. **Where are opportunities for transforming existing places or creating new ones?** Use STAR-shaped stickers to note existing places with historical value.

   b. **Will this be a place that attracts people from the region or will it be a local place?**

2. **PATHWAYS (using BLUE dots and/or markers):**

   a. **How would you connect people and places within the study area and to other parts of the region (downtown Charleston, Mount Pleasant, Summerville, Wando, etc.)?**

   b. **What would provide better access and overcome barriers?**

   c. **Are there specific streets or areas that should get special attention to make them easier to travel by foot, bike, or transit?**

3. **BARRIERS/PROBLEMS (using RED dots/markers):**

   a. **What are physical or policy barriers to transformation and change?**

   c. **Where are specific safety concerns, and what are they?**

Please summarize the 3-5 main points discussed by your group and elect one member of present them at the end of the session.

WORKSHOP EXERCISE 2 SUMMARY

FIGURE B.2 TABLE EXERCISE

FIGURE B.3 TABLE EXERCISE

FIGURE B.4 TABLE EXERCISE

FIGURE B.5 TABLE EXERCISE

Figure B.6 Table Exercise

Figure B.8 Table Exercise

Figure B.10 Table Exercise

Figure B.7 Table Exercise

Figure B.9 Table Exercise

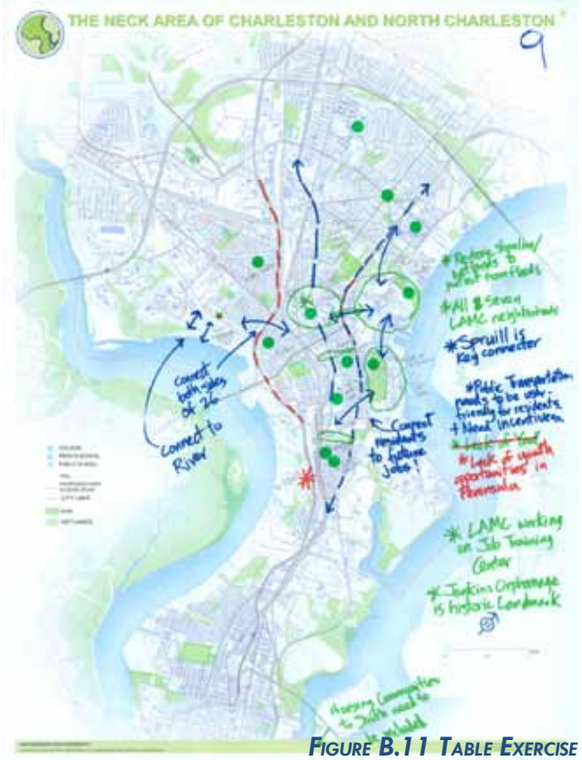


Figure B.11 Table Exercise

FLIPCHART COMMENTS

- Concern about number of trucks
- Efficient bus service
- I-26 barrier, physically & psychologically
- Transportation commuters - more bus shelters
- Public transportation needs to serve residents, not just tourists
- Need to get vehicles off street so the area is healthier
- Need more bus frequency to shelters, benches
- Car pool, commuter buses and long term commuter rail
- Bike paths
- Railroad - cleanup at dead end streets
- Need connectivity to help safety
- More transportation options
    1. Commuter trains, trolleys, DASH line, ferry
- Improving access to special places
    1. signs
- Downtown transportation
- Bike route safety issue along King Street Ext to overpass
- Connectiveness
    1. East / West
    2. North / South
    3. Big neighborhood
    4. Preservation of family and community
- Sidewalks stop at Rosemont area. Not well lit
- Safer pedestrian areas
    1. Lighting, crosswalks
- Pedestrian trails on water
- Environmental health
- Brownfield cleanup
- Identify superfund sites
- Health
    1. Environmental Brownfields
    2. Healthcare facilities
    3. Open space
    4. Green space
    5. Grocery store
    6. Rail/trucks
- Brownsfields Area
    1. Cleanup
    2. Air pollution
    3. Water issue

- Use green space
    1. More parks
    2. Mt. Pleasant Street at King Street
    3. Park floods & is safety issue
- Flooding issues concerns
- Create Small Business Service Center Public access to water and open space
- Bring Industry that employs existing residents
- Need to bring jobs to area
- Connect business centers
- Central Job Training Center
- Youth Employment Training Bldg
    1. Naval base
    2. Or in the Accabee area
- Community Outreach Center
- For the homeless
- Ex-offenders in Neck Area
- Importance of education as a foundation to economic freedom
- How do we capitalize on new businesses directly or indirectly in area?
- Economy & Vitality
    1. Bring in appropriate industry supported by all skill levels
    2. Tying education to jobs
- More events across area
- Complete streets
- Engage school district
- (6) Low achieving schools
- Enough community centers not enough space
- Get Rosemont involved
- Need for healthcare facilities
- Need tech infrastructure

- Prosperity does not mean pushing existing people out
- Would like to have seen overlays of info to understand needs
- Neck Area have good potential for affordable housing
- Safety issues - abandoned houses
- Old Skating Ring - develop it into Community Center or another Skating Ring
- James Simmion – School traffic issues
- Chas. Catholic – Sometime safety issues
- Areas with Issues
    1. near Silver Hill
    2. Maryford Elementary
    3. Accabee
- The homeless
- Cornerstone is changing access to and preparation for college – High School and before
- Need supermarket

Figure B.12 Community Design Charrette Postcard

Planning Charrette

The results of the five-day community planning charrette are as follows:

Charrette Agenda

PARTNERSHIP FOR PROSPERITY – NECK AREA MASTER PLAN

COMMUNITY DESIGN CHARRETTE

September 26-30, 2011

All sessions will be at **Sterett Hall, 1530 7th Street and Hobson Avenue North Charleston.** Snacks will be provided each day…

DETAILED WORKING AGENDA – SEPTEMBER 26 - 30

MONDAY, SEPTEMBER 26, 2011

8:30AM–12:30PM **Team Travel + Lunch**

1:00PM-5:00PM

(CONCURRENT) **Site Tour + Studio Setup**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

5:00-6:00PM **Kick-off Meeting Preparation**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

6:00PM-8:00PM

(CONCURRENT) **Kick-off Meeting + Presentation**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

6:00 **Kick-off Meeting**

6:30 **Presentation**

8:00PM-9:00PM

(CONCURRENT) **Team Debriefing + Dinner**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

Transit Task A: Define Transit Needs

Questions to Answer:

- Where are people travelling in the area?
- Where are the primary flows?
- What are circulation needs?
- What are regional travel needs?

Info Needed:

- O/D matrix and map
- CARTA current ridership by route
- Relevant model outputs from 2035 LRTP

Timeframe:

- Start work prior to charrette; confirm findings via Monday meeting

Product:

- Fact sheet illustrating key needs (within Neck and to/from Neck)

TUESDAY, SEPTEMBER 27, 2011

8:00AM–9:00PM **Team Debriefing**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

9:00M-12:00PM

(CONCURRENT) **Work Session + Stakeholder Feedback**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Location:

Objectives:

Stakeholder Feedback:

9:00-10:30 – Jeff McWhorter

11:00 – Doug Frate, SCDOT, Mark Nesbit, District Traffic Engineer, Roy Tolson, Director of the Office of Railroads,

11:00 – Richelle Tolton, DHEC Lowcountry Regional Community Liaison, & Randy Cook, DHEC Air Planning

12:00PM-1:00PM **Lunch (Delivered)**

1:00-6:00PM

(CONCURRENT) **Stakeholder Feedback + Work Session + Feedback**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, DawnT, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

Stakeholder Feedback:

1:00-2:00 – Jamee Haley, Lowcountry Local First, Kate Nevin, Creative Corridor, and Kate's husband Lindsay.

1:00-2:00 – Ray Anderson

1:00 – Jeff Baxter and Geoffrey Reid (Noisette)

3:00 – David Ginn, CRDA, with Steve Warner

6:00PM-7:00PM **Dinner (Delivered)**

7:00PM-8:30PM

(CONCURRENT) **Team Pin-up**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa

M, Brett, Claire, Julie, Leon, John

Objectives:

Transit Task B: Define Range of Infrastructure Options

Questions to Answer:

- What transit technologies are practical in the designated Multimodal Corridor? (specifically look at I-26, rail corridor, Rivers Ave.)
- How to access the North Charleston Intermodal Center? (e.g. Dorchester Rd. / Montague Ave / utility corridors, etc)
- Info Needed:
- Cross-sections of various facilities in the Multimodal Corridor and connecting to Intermodal Center
- ADT / traffic issues / V-C ratios / etc.
- Previous studies (HOV/HOT lanes on I-26, commuter rail feasibility studies, etc)
- Photo inventory of alignments to identify major issue areas

Timeframe:

- Start prior to charrette; confirm and discuss opportunities on Tuesday
- Product:
- Summary / fact sheet(s) discussing infrastructure / technology opportunities including major design challenges

Task C: Examine Transit Access to Catalyst Areas on Multimodal Corridor

Questions to Answer:

- Based on range of transit infrastructure options, what are desirable ways to access the four specific catalyst areas on the Multimodal Corridor? What type of transit access is desired?
- Info Needed:
- Initial findings from Task B
- Discussion with team in larger context of catalyst areas

Timeframe:

- Begin discussion on Tuesday

Product:

- Transit infrastructure concepts incorporated into design schemes for catalyst areas

WEDNESDAY, SEPTEMBER 28, 2011

8:00AM–9:00PM Team Debriefing

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

Pre-Charrette Deliverables:

9:00M-12:00PM

(CONCURRENT) Work Session + Stakeholder Feedback

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

Stakeholder Feedback:

9:00 – freight users (none have responded)

9:00-12:00 – Hernan Pena (have let him know other CoC staff are coming at 10:00 if he wants to coordinate or not)

9:00-12:00 – Joe Bryant

10:00 – City of Charleston Staff – Tim Keane, Christopher Morgan, Jonathan Oakman, Jane Baker, Philip Overcash

11:00 – Bill Stanfield and Tony Joyner

12:00-1:00PM Lunch (Delivered)

1:00PM-4:00PM Work Session

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

4:00PM-5:00PM Setup Workshop

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Location:

Objectives:

5:00PM-8:00PM

(CONCURRENT) Public Pin-up + Presentation

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

Public Pin-Up – Coleman Thompson (Hunter Transportation) will stop by

5-8PM **Public Pin-up**

7:30PM **Presentation**

8:00PM-9:00PM **Dinner**

Transit Task D: Establish Conceptual Alignments

Questions to Answer:

- How would transit infrastructure fit in the specific corridors (I-26 / rail corridor / Rivers Ave. / access to North Charleston Intermodal Center)? (At this point, still planning-level "lines on a map" but they include indication of critical design challenges)
- Range of alignments to consider based on results of Tasks B & C
- Info Needed:
- Based on info gathered as part of Tasks B & C; likely will need additional field confirmation

Timeframe:

- Wednesday

Product:

- Alignments (drawn on Google Earth); identification of key design issues

THURSDAY, SEPTEMBER 29, 2011

8:00AM–9:00PM **Team Debriefing**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

9:00M-1:00PM

(CONCURRENT) **Work Session + Stakeholder Feedback +Drop in**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

Stakeholder Feedback:

9:30 – Wannetta Mallette and LAMC Representatives

10:00 – Robert Clement III, and Stuart Coleman

10:30 – Joe Church, Huger Properties, 599 Meeting

Christine Wilkinson and Elliott Summey?? (Wednesday or Thursday – trying to steer to Thursday when Brett is there)

PM Drop-In – Michelle Mapp, Lowcountry Housing Trust

1:00-2:00PM **Lunch (Delivered)**

2:00PM-6:00PM **Work Session**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Location:

Objectives:

Location:

Objectives:

6:00PM-7:00PM **Dinner (Delivered)**

7:00PM-9:00PM

(CONCURRENT) **Team Pin-up + Work Session**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

Transit Task E: Refine Alignments / Stop Locations / Interaction with Catalyst Sites

- Refine initial concepts based on feedback received, additional input from Wednesday pin-up, and emerging concepts for catalyst sites
- Timeframe:
- Begins Thurs0day / Ends Friday

Product:

- Alignments (drawn on Google Earth); identification of key design issues; identification of key stop locations

FRIDAY, SEPTEMBER 30, 2011

8:00AM–9:00PM **Team Debriefing**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

9:00M-12:00PM **Work Session**

Attendees: Whit B, Jenn C, David S, Vlad G, Kristin N, David N, Dawn T, Shilpa M, Brett, Claire, Julie, Leon, John

Objectives:

CHARRETTE SKETCHES

FIGURE B.13CHARRETTE SKETCH, NORTH OF MOUNT PLEASANT

FIGURE B.14 CHARRETTE SKETCH, STROMBOLI AVE

FIGURE B.15 CHARRETTE SKETCH, SHIPWATCH SQUARE

CHARRETTE DRAWINGS

FIGURE B.16 CHARRETTE SKETCH, OLDE NORTH CHARLESTON

FIGURE B.18 CHARRETTE PLAN, SOUTH OF MOUNT PLEASANT

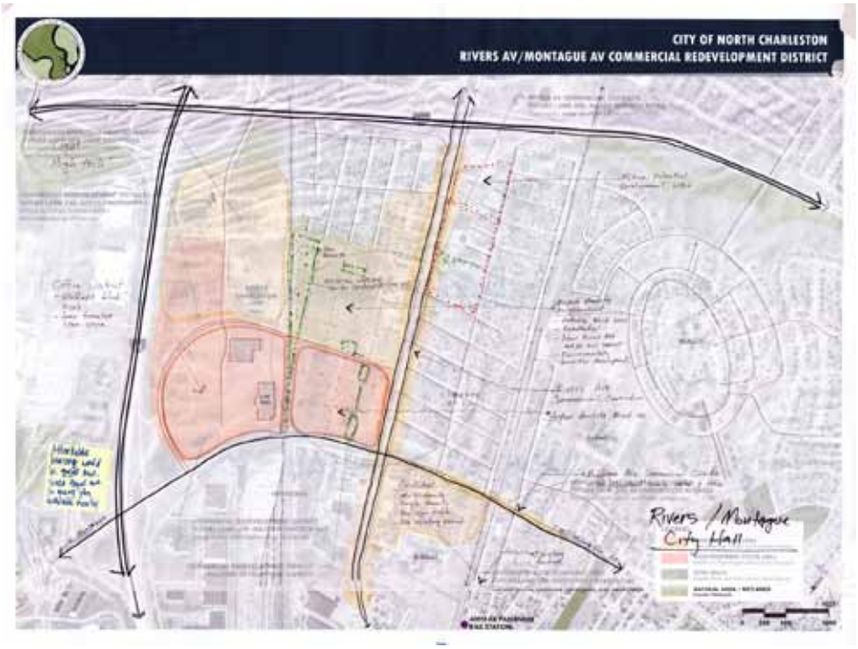


FIGURE B.17 CHARRETTE SKETCH, MALL DRIVE AREA

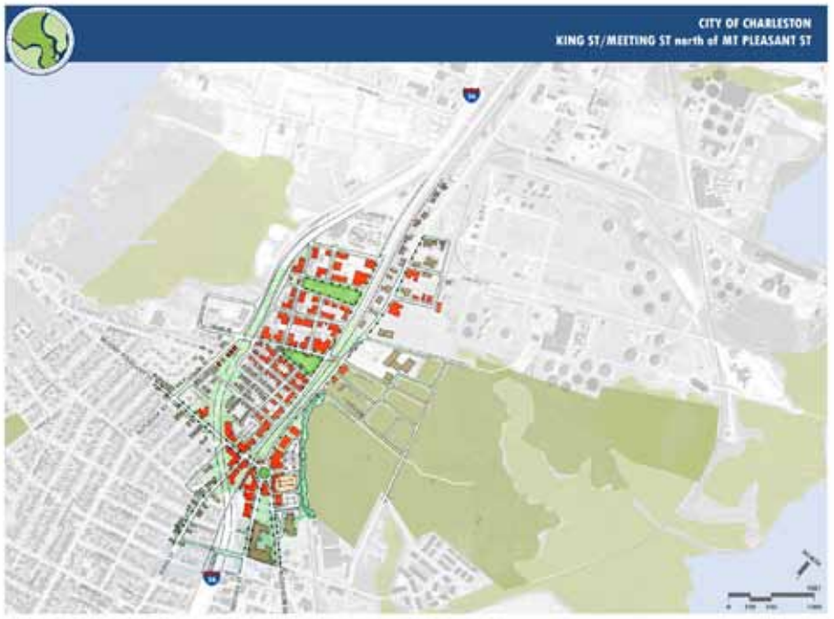


FIGURE B.19 CHARRETTE PLAN, NORTH OF MOUNT PLEASANT

Figure B.20 Charrette Plan, Shipwatch Square

Figure B.22 Charrette Plan, Convention Center Station

Figure B.21 Charrette Plan, Mall Drive Area

FIGURE B.23 VIEW OF MALL DRIVE AREA

FIGURE B.24 CHARRETTE SKETCH, NORTH OF MOUNT PLEASANT

FIGURE B.25 CHARRETTE SKETCH, SHIPWATCH SQUARE, PHASE ONE

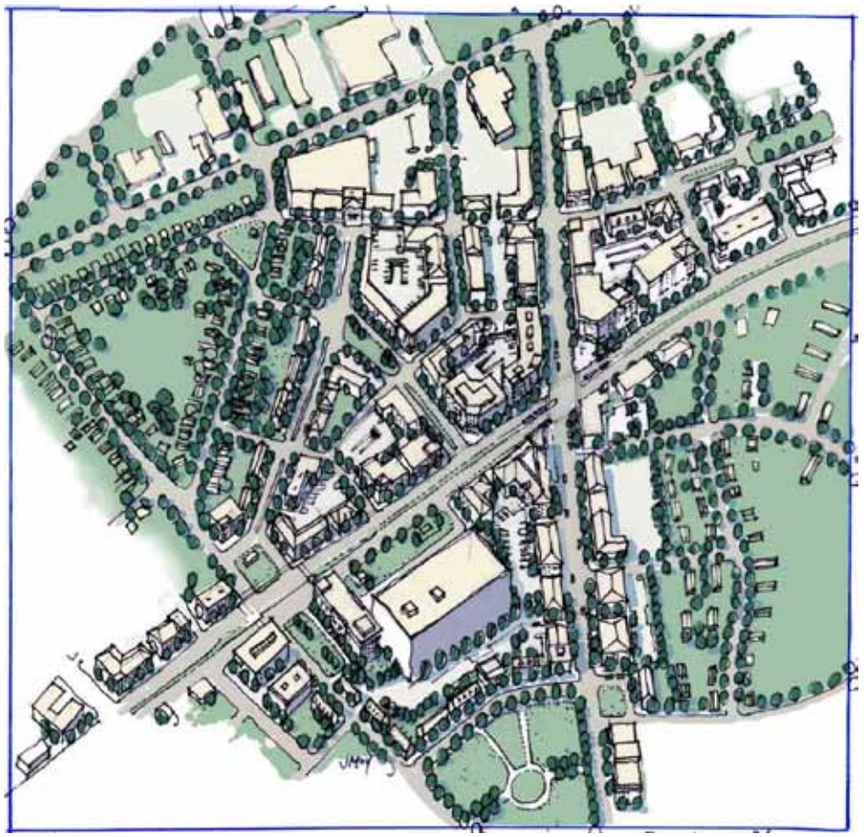


FIGURE B.26 CHARRETTE SKETCH, SHIPWATCH SQUARE, BUILDOUT

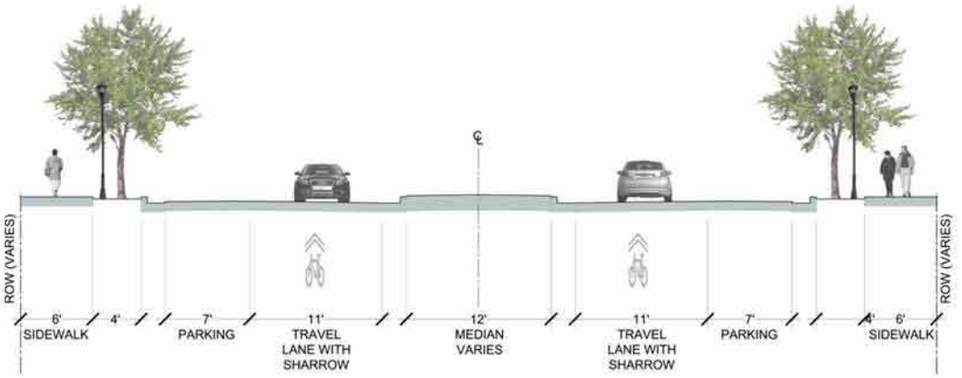


FIGURE B.27 MONTAGUE AVENUE ROAD DIET

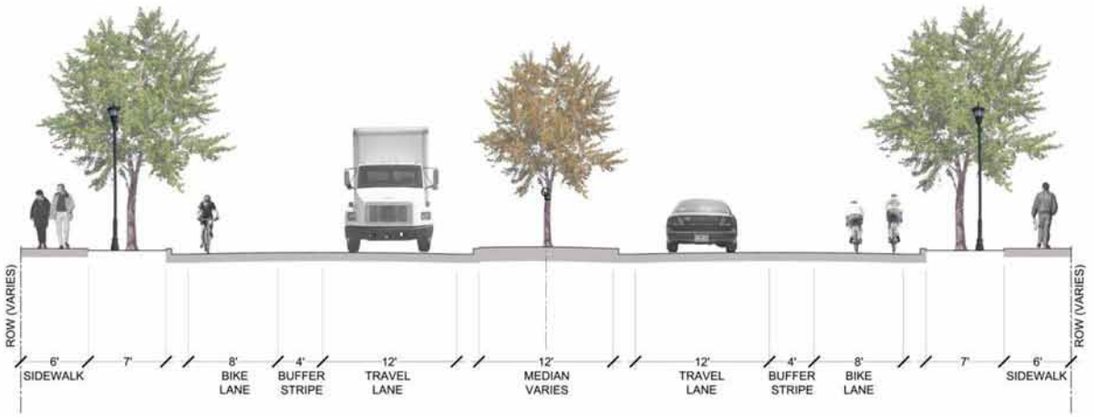


FIGURE B.28 SPRUILL AVENUE ROAD DIET

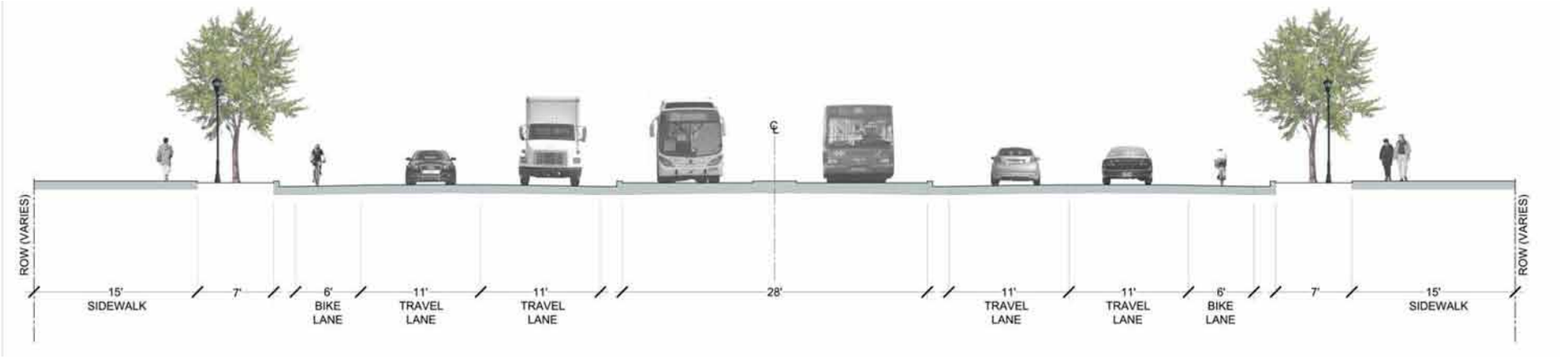


FIGURE B.29 RIVERS AVENUE

CHARRETTE PHOTOMONTAGES

FIGURE B.30 RIVERS AVENUE AT SHIPWATCH SQUARE, EXISTING

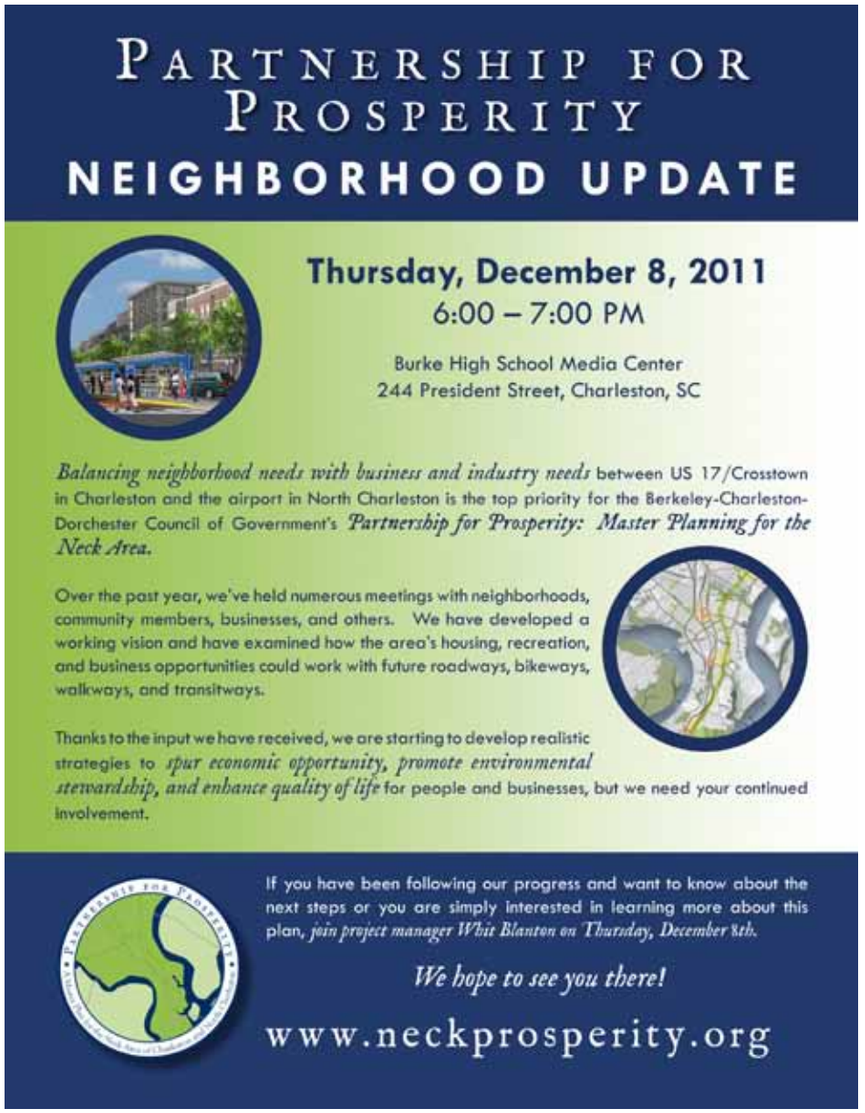
FIGURE B.31 RIVERS AVENUE AT SHIPWATCH SQUARE, FUTURE

Figure B.32 Spruill Avenue, Existing

Figure B.33 Spruill Avenue, Future

FIGURE B.34 STROMBOLI AVENUE, EXISTING

FIGURE B.35 STROMBOLI AVENUE, FUTURE



PARTNERSHIP FOR PROSPERITY

NEIGHBORHOOD UPDATE

Thursday, December 8, 2011

6:00 – 7:00 PM

Burke High School Media Center
244 President Street, Charleston, SC

Balancing neighborhood needs with business and industry needs between US 17/Crosstown in Charleston and the airport in North Charleston is the top priority for the Berkeley-Charleston-Dorchester Council of Government's *Partnership for Prosperity: Master Planning for the Neck Area.*

Over the past year, we've held numerous meetings with neighborhoods, community members, businesses, and others. We have developed a working vision and have examined how the area's housing, recreation, and business opportunities could work with future roadways, bikeways, walkways, and transitways.

Thanks to the input we have received, we are starting to develop realistic strategies to *spur economic opportunity, promote environmental stewardship, and enhance quality of life* for people and businesses, but we need your continued involvement.

If you have been following our progress and want to know about the next steps or you are simply interested in learning more about this plan, *join project manager Whit Blanton on Thursday, December 8th.*

We hope to see you there!

www.neckprosperity.org

FIGURE B.36 NEIGHBORHOOD UPDATE FLYER

POST CHARRETTE FRAMEWORK MAPS

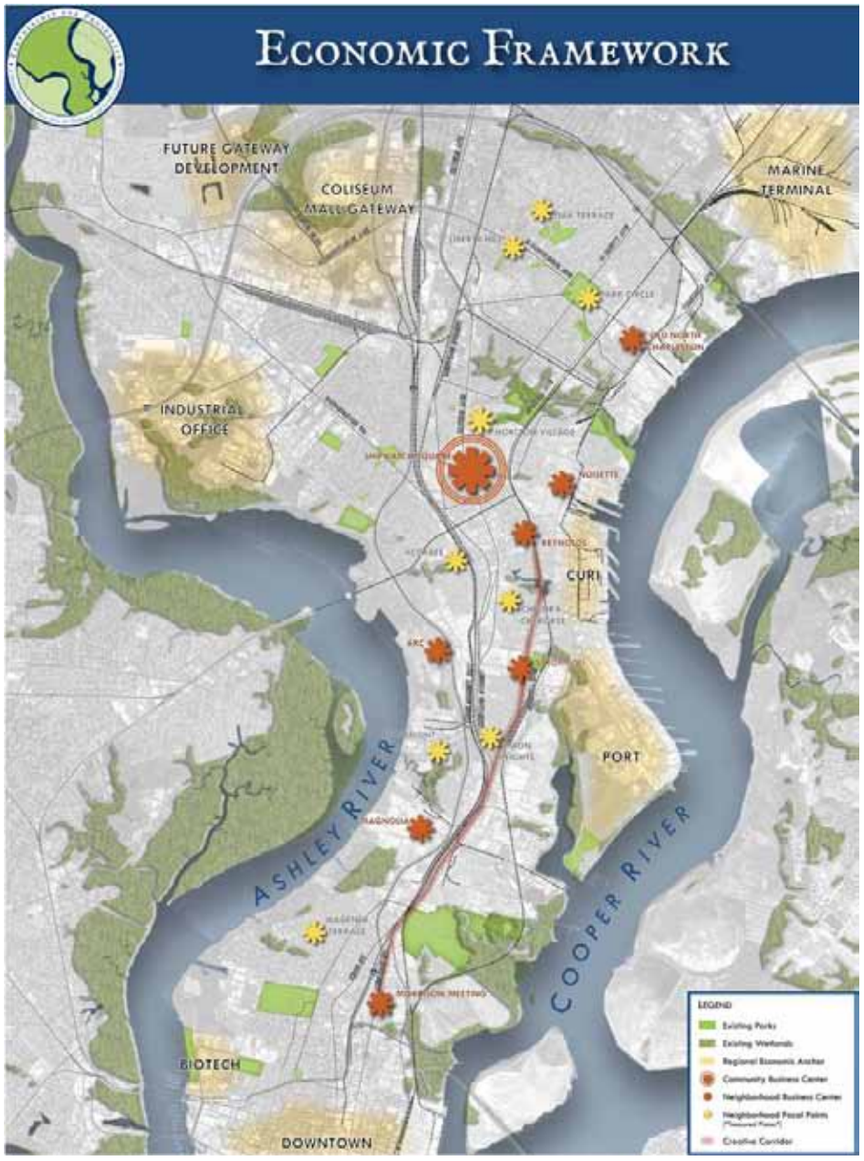


FIGURE B.37 ECONOMIC FRAMEWORK

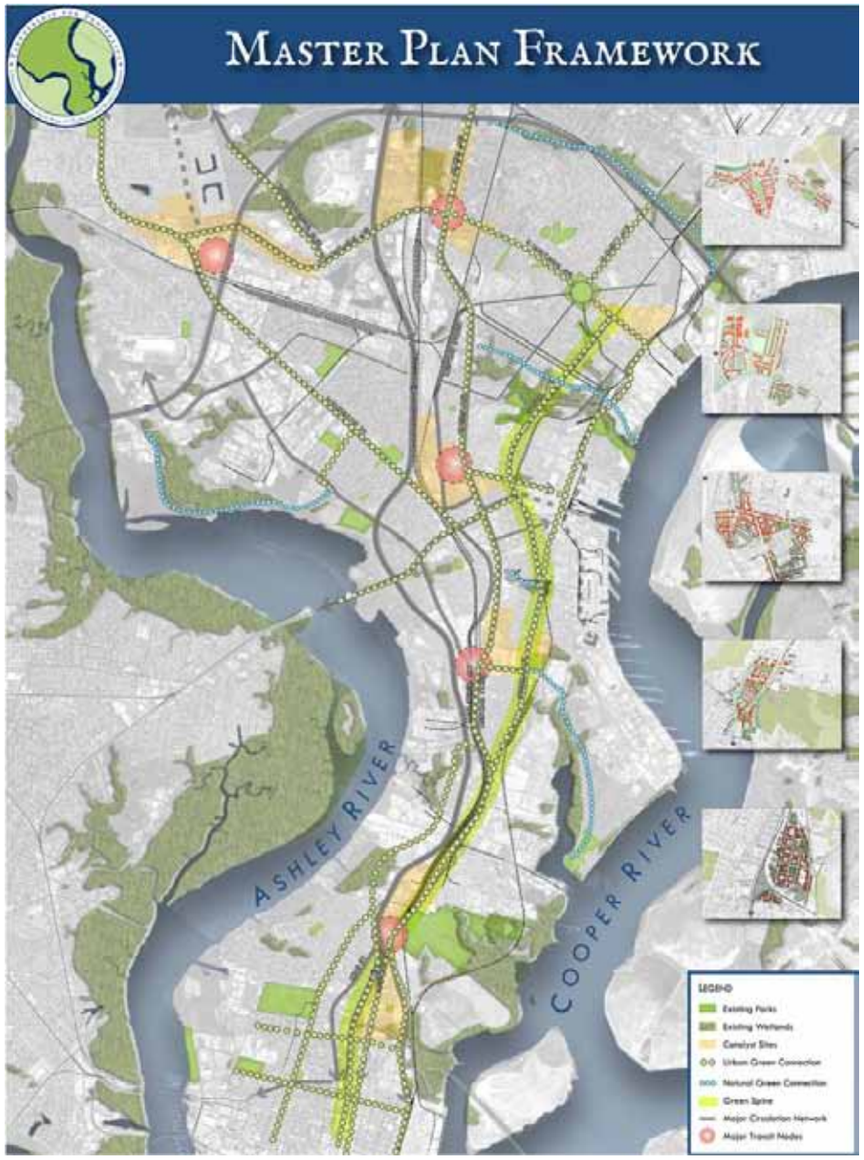


FIGURE B.38 MASTER PLAN FRAMEWORK

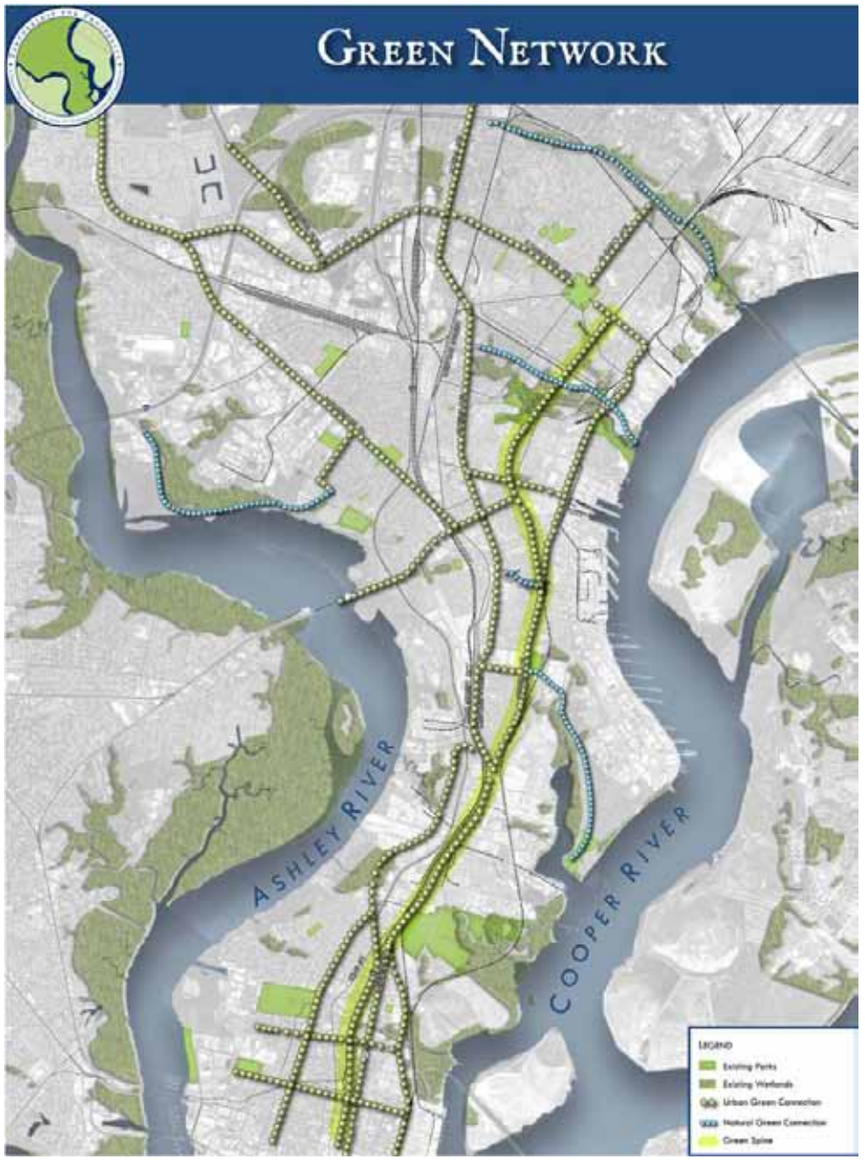


FIGURE B.39 GREEN NETWORK

Figure B.40 Bicycle & Pedestrian Network

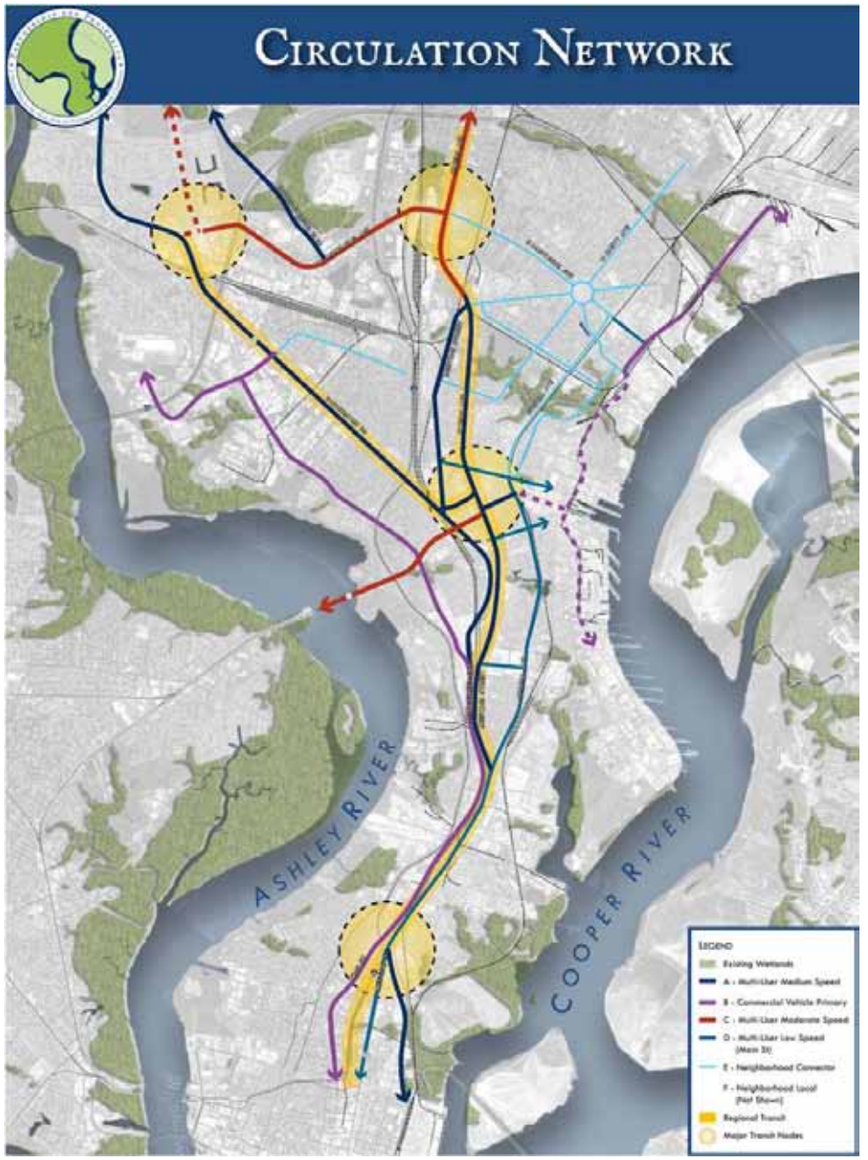


Figure B.41 Circulation Network

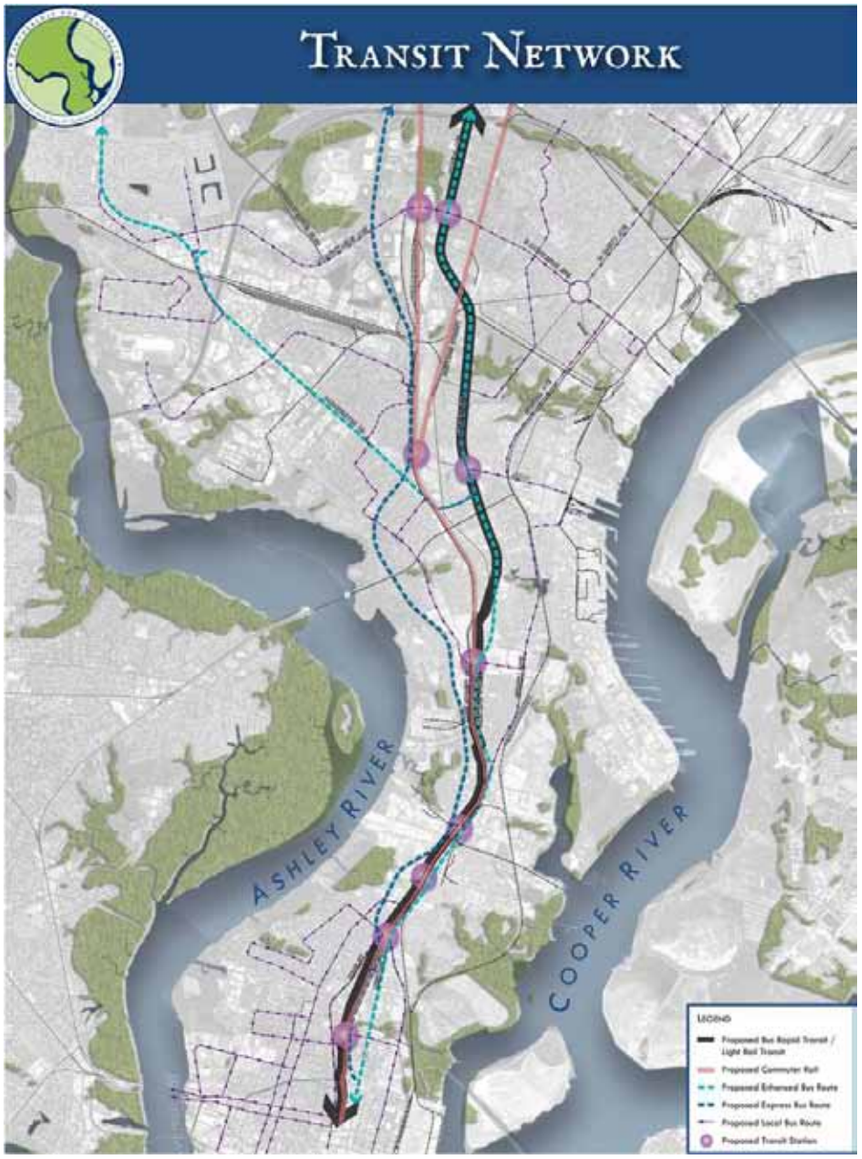


FIGURE B.42 TRANSIT NETWORK

POST CHARRETTE CATALYST AREA PLANS

FIGURE B.43 SOUTH OF MOUNT PLEASANT POST CHARRETTE PLAN

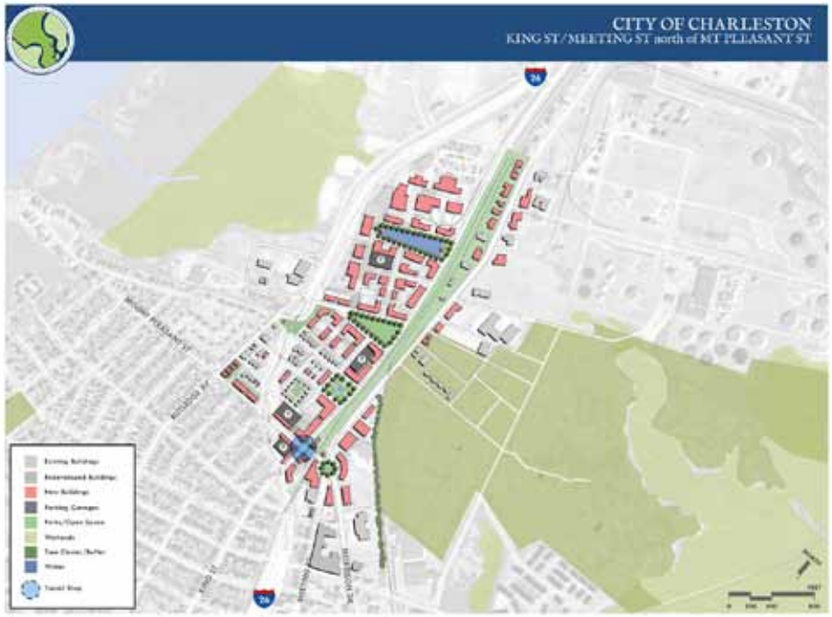


FIGURE B.44 NORTH OF MOUNT PLEASANT POST CHARRETTE PLAN

Figure B.45 Stromboli Avenue Post Charrette Plan

Figure B.47 Olde North Charleston Post Charrette Plan

Figure B.46 Shipwatch Square Post Charrette Plan

Figure B.48 Mall Drive Area Post Charrette Plan

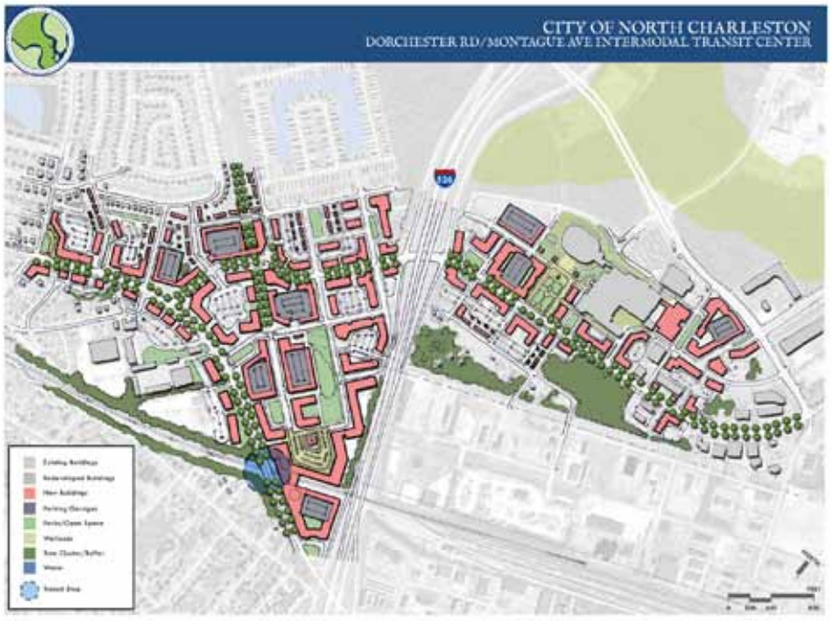


FIGURE B.49 CONVEMTION CENTER POST CHARRETTE PLAN

OPEN HOUSE

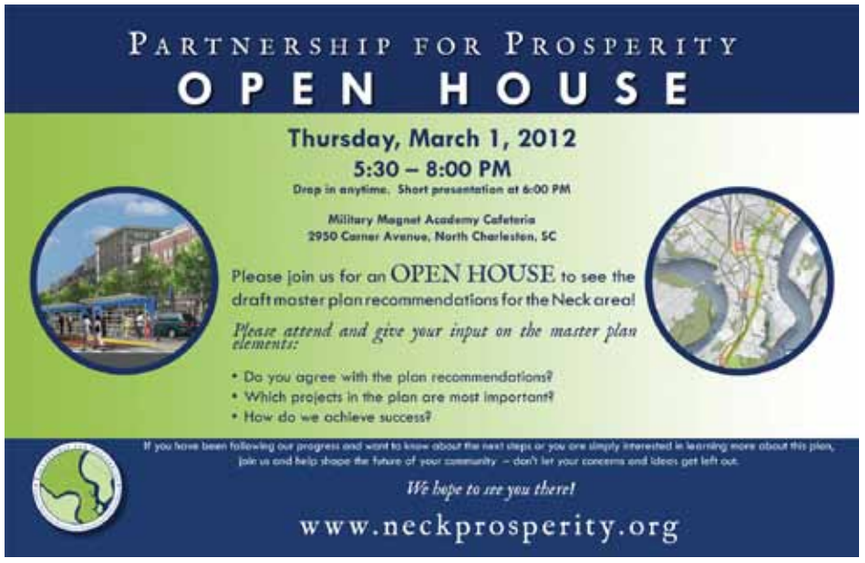


FIGURE B.50 OPEN HOUSE FLYER

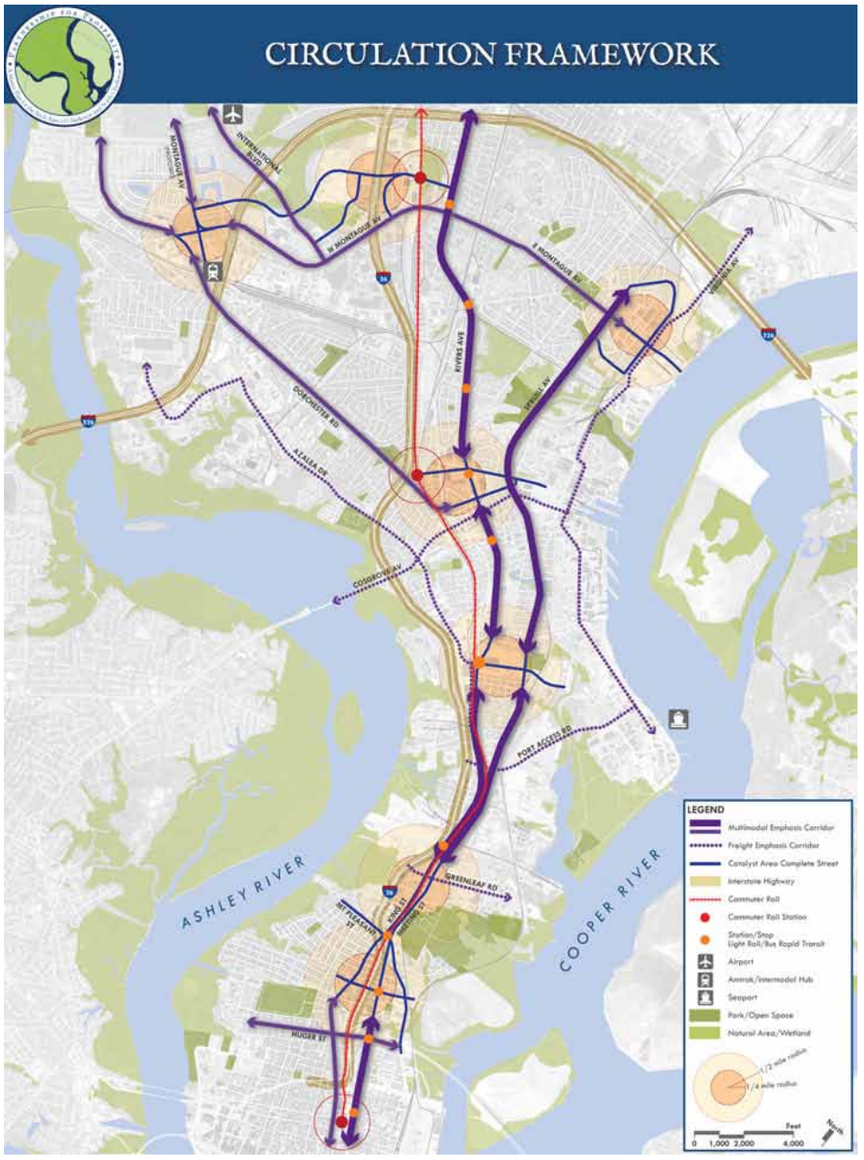


FIGURE B.51 CIRCULATION FRAMEWORK

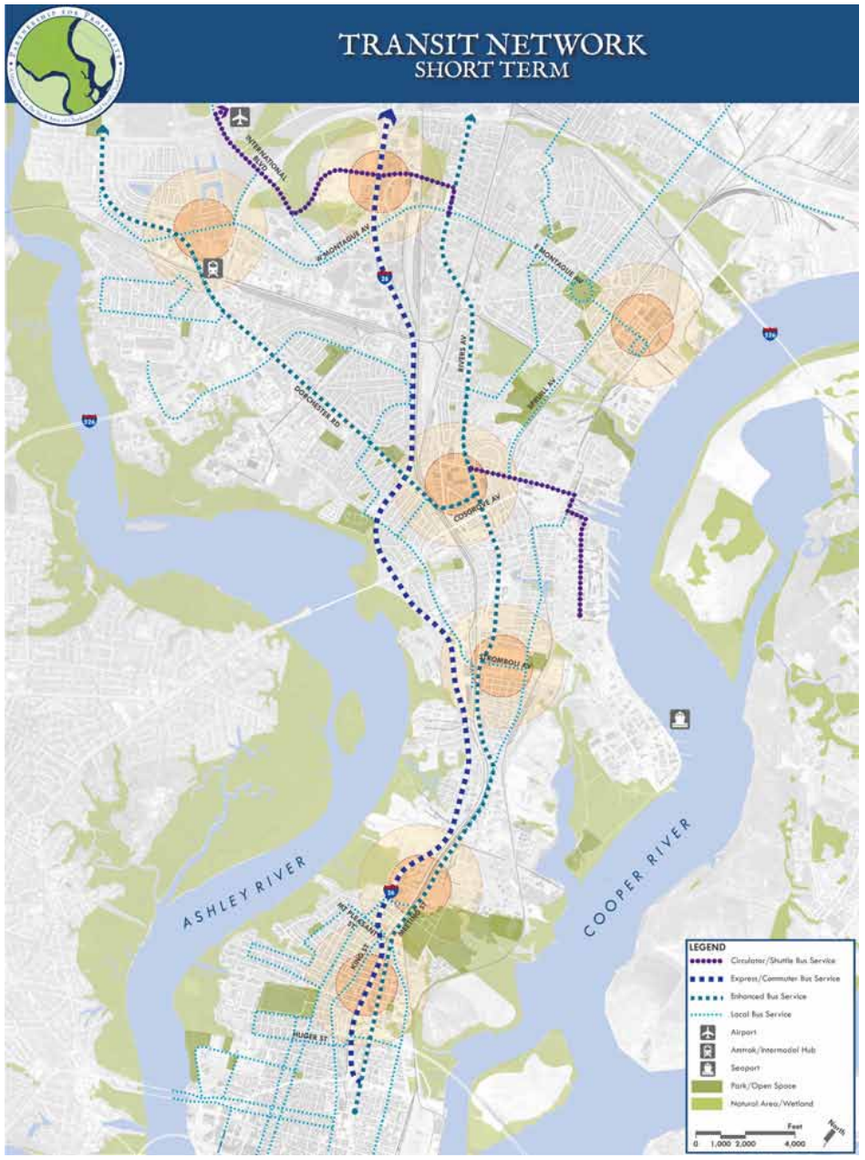


Figure B.52 Transit Network, Short Term

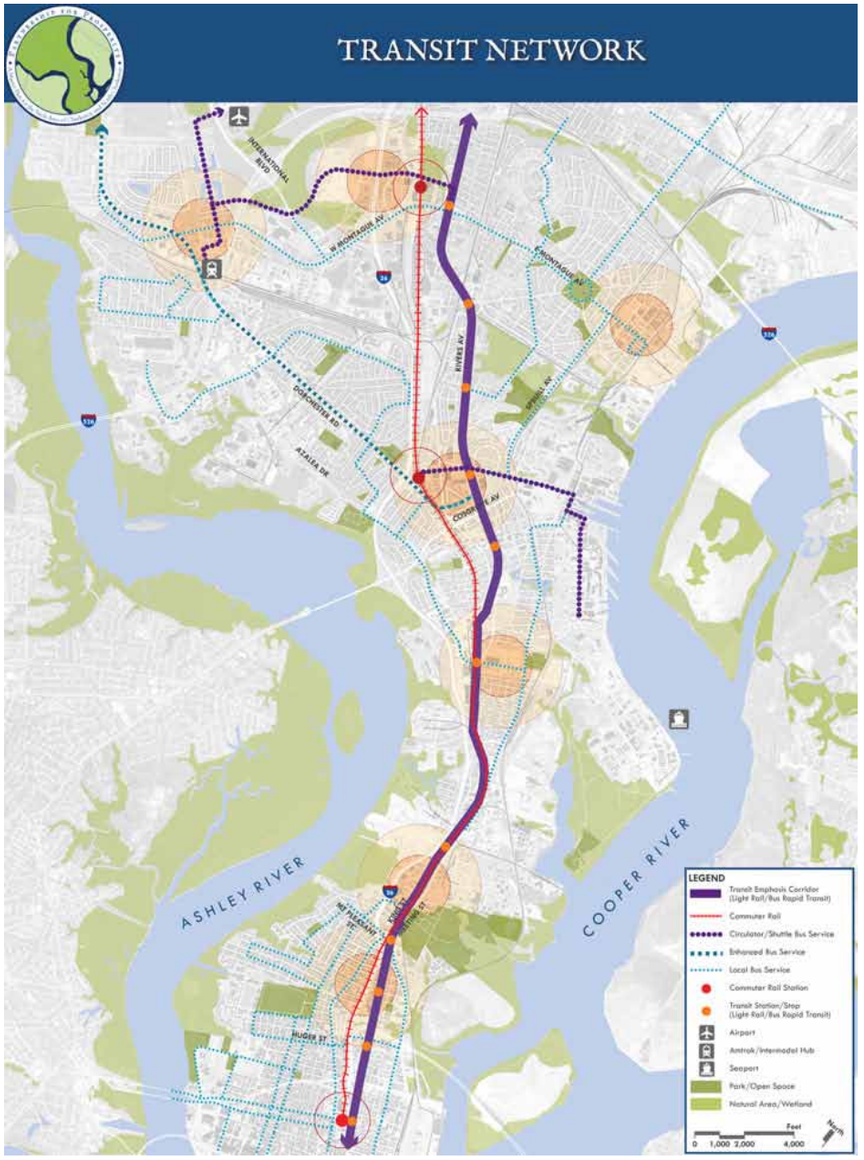


Figure B.53 Transit Network, Long Term

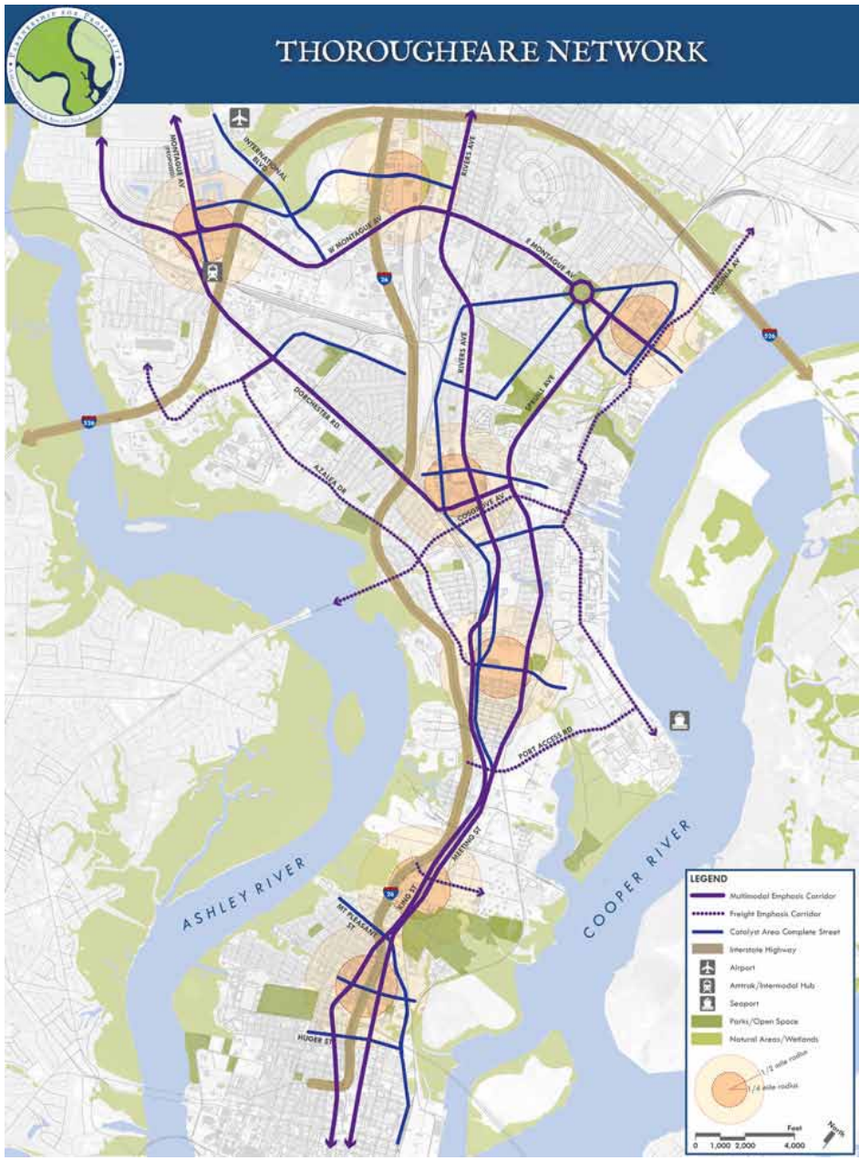


FIGURE B.54 THOROUGHFARE NETWORK

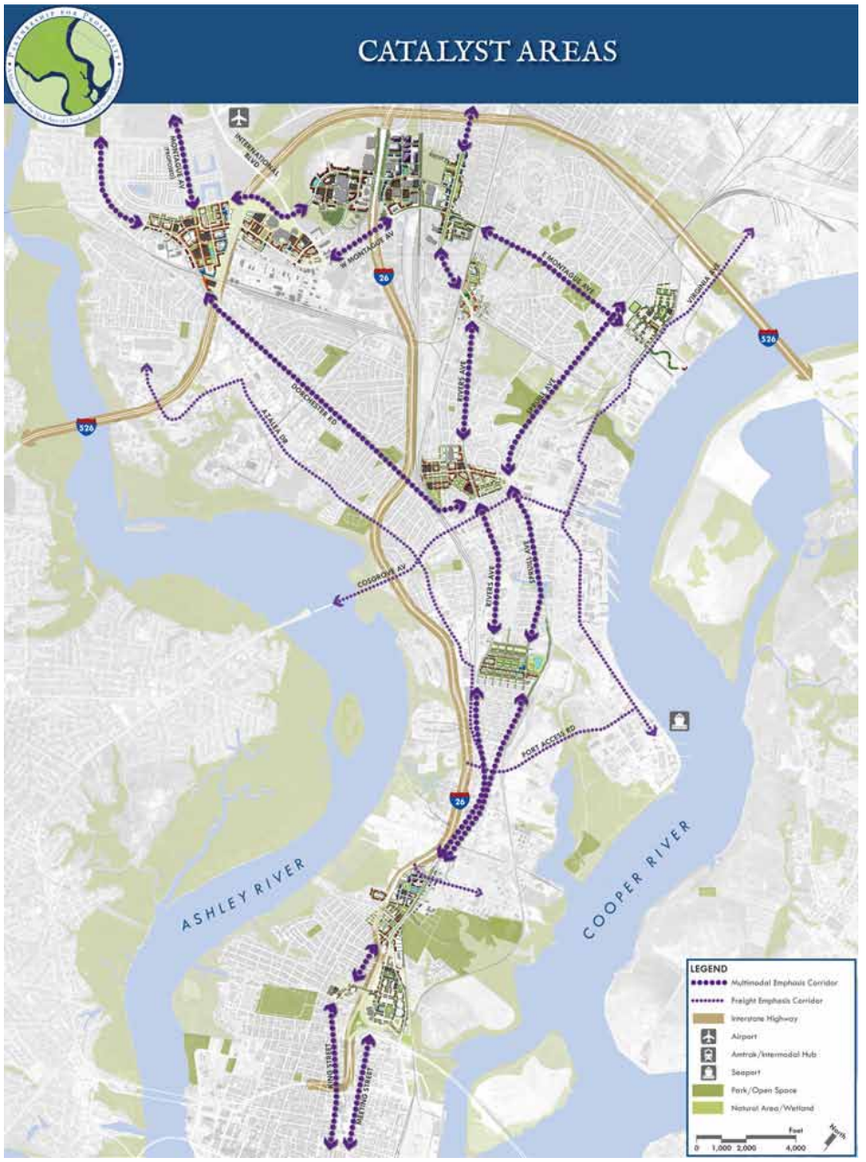


FIGURE B.55 CATALYST AREAS

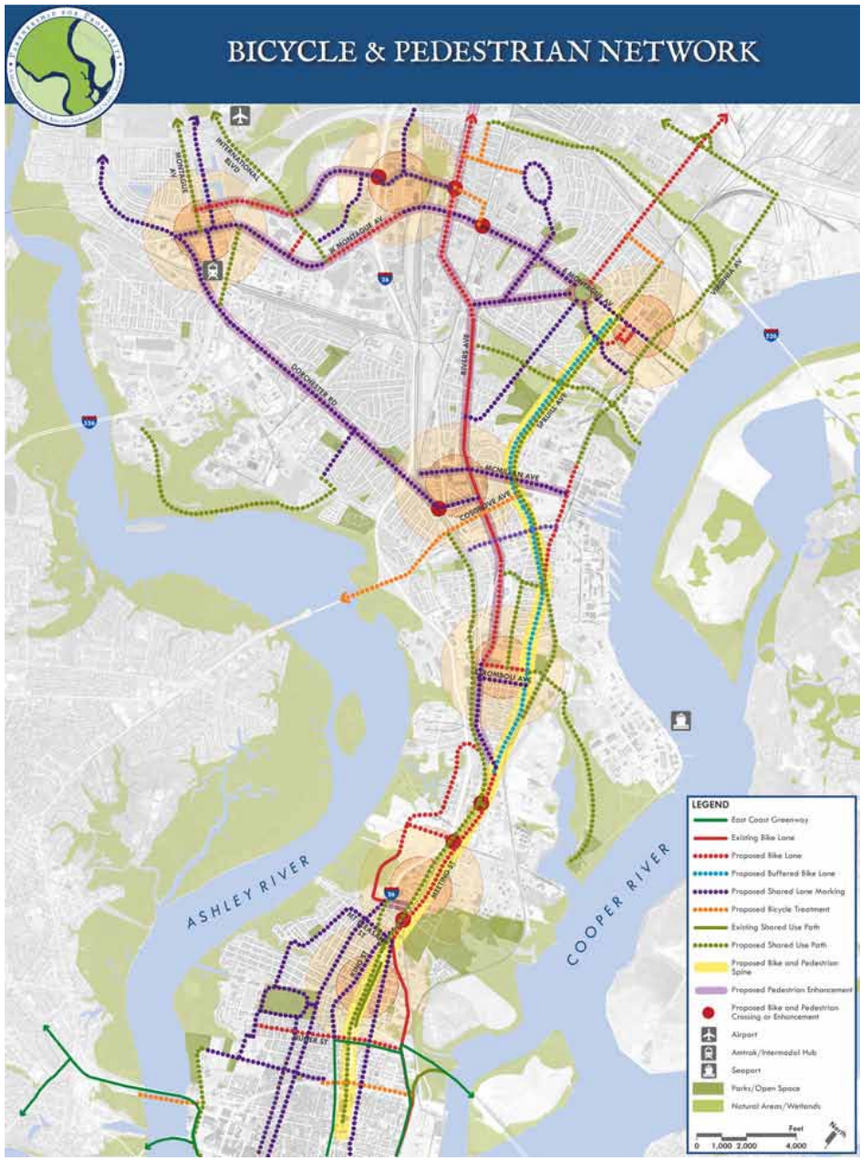
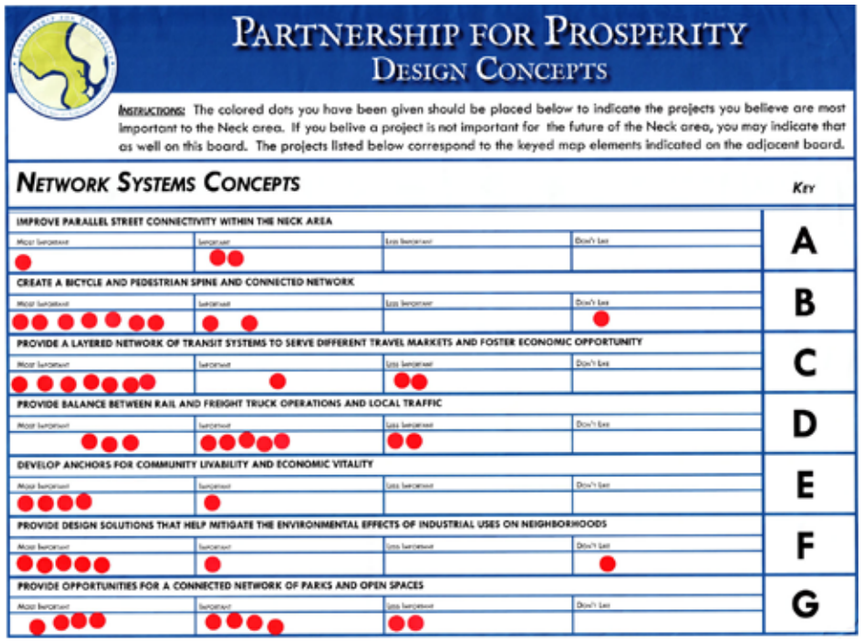


Figure B.56 Bicycle & Pedestrian Network



Partnership for Prosperity
Design Concepts

Instructions: The colored dots you have been given should be placed below to indicate the projects you believe are most important to the Neck area. If you belive a project is not important for the future of the Neck area, you may indicate that as well on this board. The projects listed below correspond to the keyed map elements indicated on the adjacent board.

Network Systems Concepts	Most Important	Important	Less Important	Don't See	Key
IMPROVE PARALLEL STREET CONNECTIVITY WITHIN THE NECK AREA	●	●●			A
CREATE A BICYCLE AND PEDESTRIAN SPINE AND CONNECTED NETWORK	●●●●●●●	●●		●	B
PROVIDE A LAYERED NETWORK OF TRANSIT SYSTEMS TO SERVE DIFFERENT TRAVEL MARKETS AND FOSTER ECONOMIC OPPORTUNITY	●●●●●●●	●	●●		C
PROVIDE BALANCE BETWEEN RAIL AND FREIGHT TRUCK OPERATIONS AND LOCAL TRAFFIC	●●●	●●●●●	●●		D
DEVELOP ANCHORS FOR COMMUNITY LIVABILITY AND ECONOMIC VITALITY	●●●●	●			E
PROVIDE DESIGN SOLUTIONS THAT HELP MITIGATE THE ENVIRONMENTAL EFFECTS OF INDUSTRIAL USES ON NEIGHBORHOODS	●●●●●	●		●	F
PROVIDE OPPORTUNITIES FOR A CONNECTED NETWORK OF PARKS AND OPEN SPACES	●●●●	●●●●	●●		G

Figure B.57 Design Concept Ranking, Network Systems Concepts

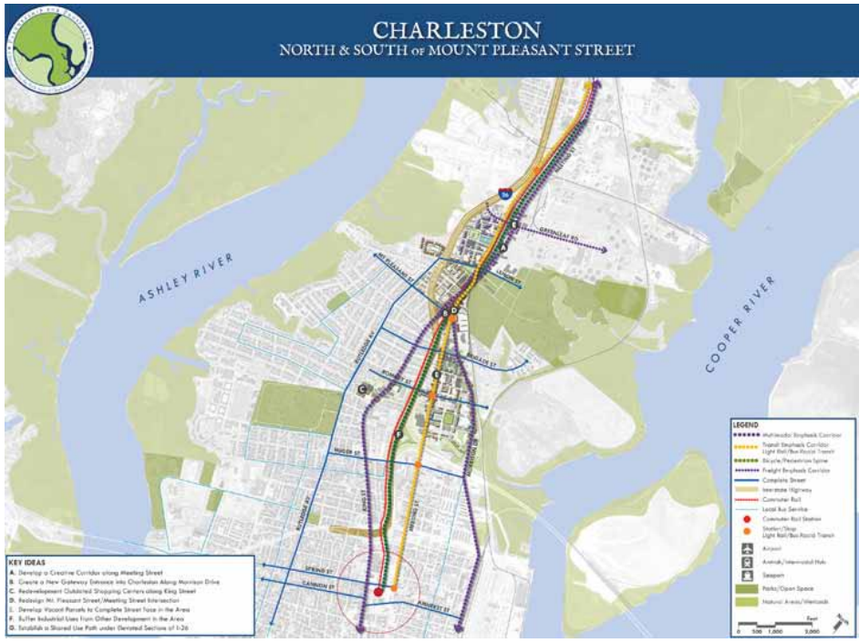


FIGURE B.58 DESIGN CONCEPT AREAS, NORTH & SOUTH OF MOUNT PLEASANT

FIGURE B.60 CATALYST AREA DESIGN PHASING - SOUTH OF MOUNT PLEASEANT

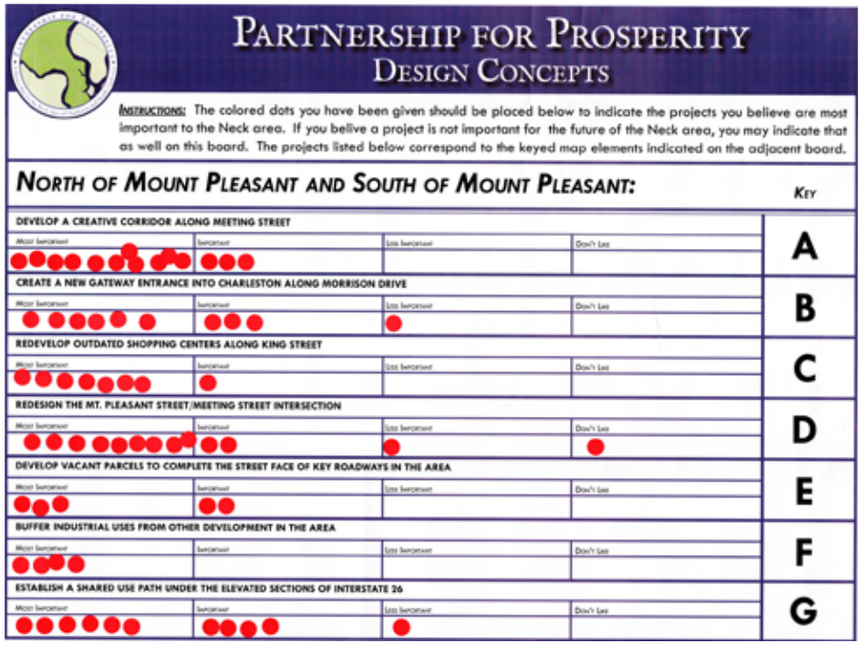


FIGURE B.59 DESIGN CONCEPT RANKING, NORTH & SOUTH OF MOUNT PLEASANT

FIGURE B.61 CATALYST AREA DESIGN PHASING - NORTH OF MOUNT PLEASEANT

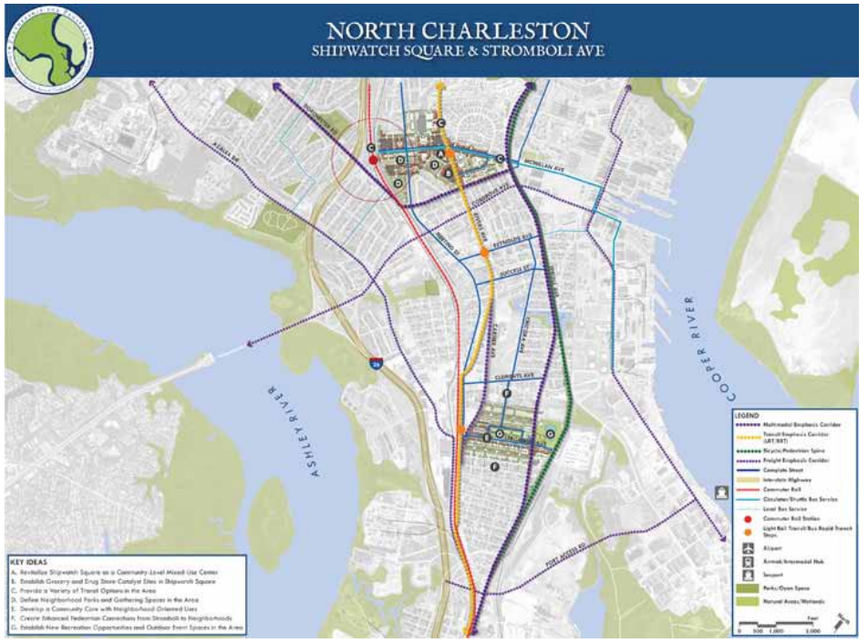


Figure B.62 Design Concept Areas, Shipwatch Square & Stromboli Avenue

Figure B.64 Catalyst Area Design Phasing - Stromboli Avenue

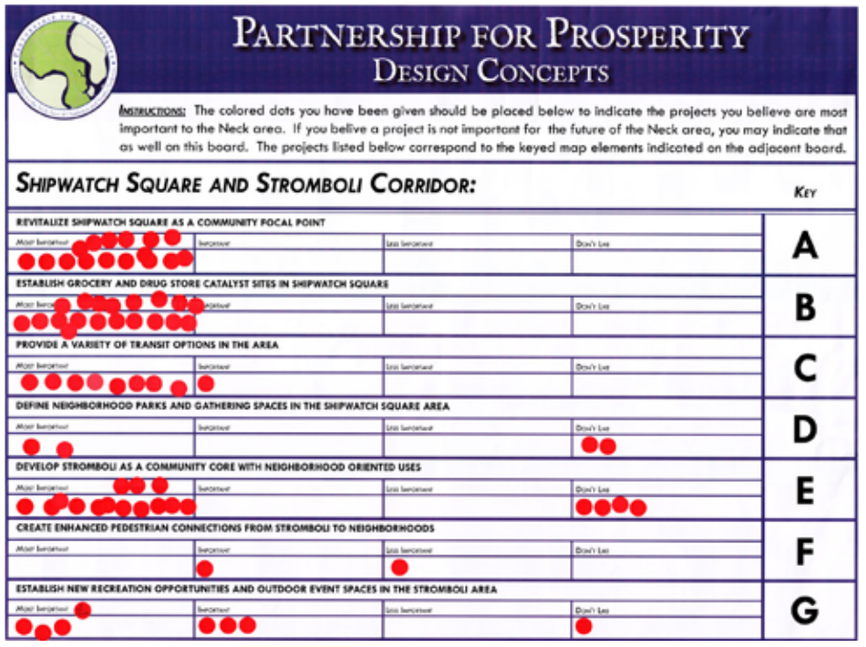


Figure B.63 Design Concept Ranking, Shipwatch Square & Stromboli Avenue

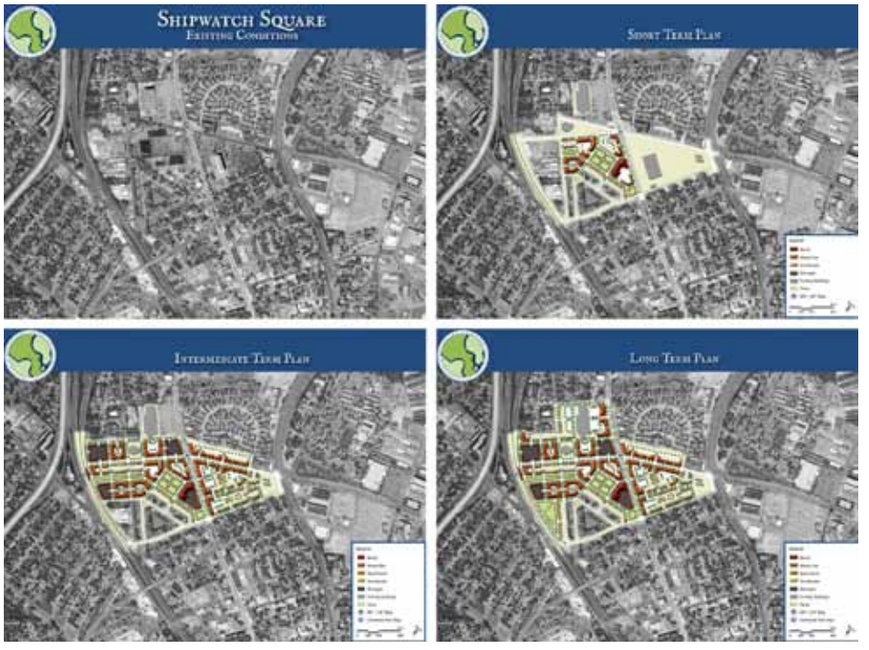


Figure B.65 Catalyst Area Design Phasing - Shipwatch Square

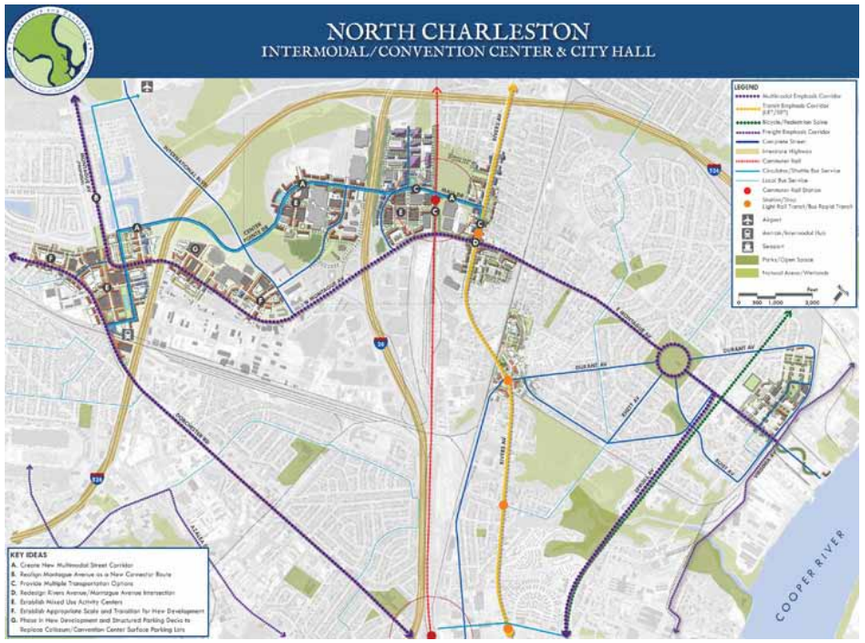


FIGURE B.66 DESIGN CONCEPT AREAS, CONVENTION CENTER & MALL DRIVE AREA

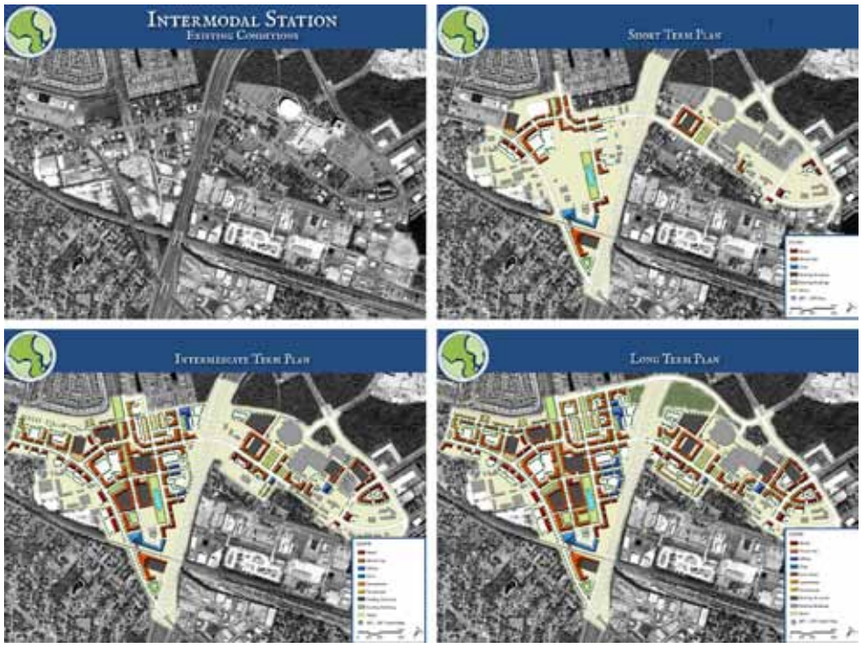


FIGURE B.68 CATALYST AREA DESIGN PHASING - CONVENTION CENTER

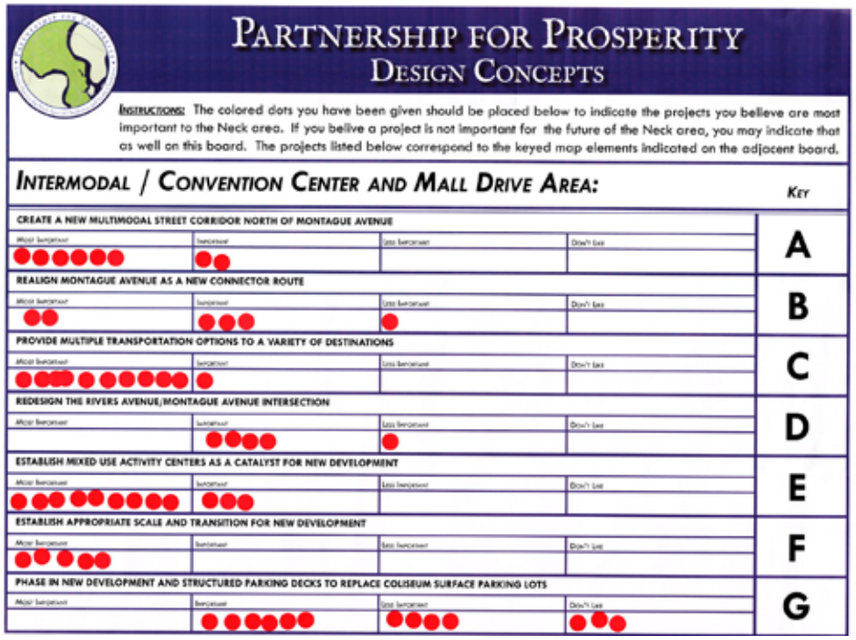


FIGURE B.67 DESIGN CONCEPT RANKING, CONVENTION CENTER & MALL DRIVE AREA

FIGURE B.69 CATALYST AREA DESIGN PHASING -MALL DRIVE AREA

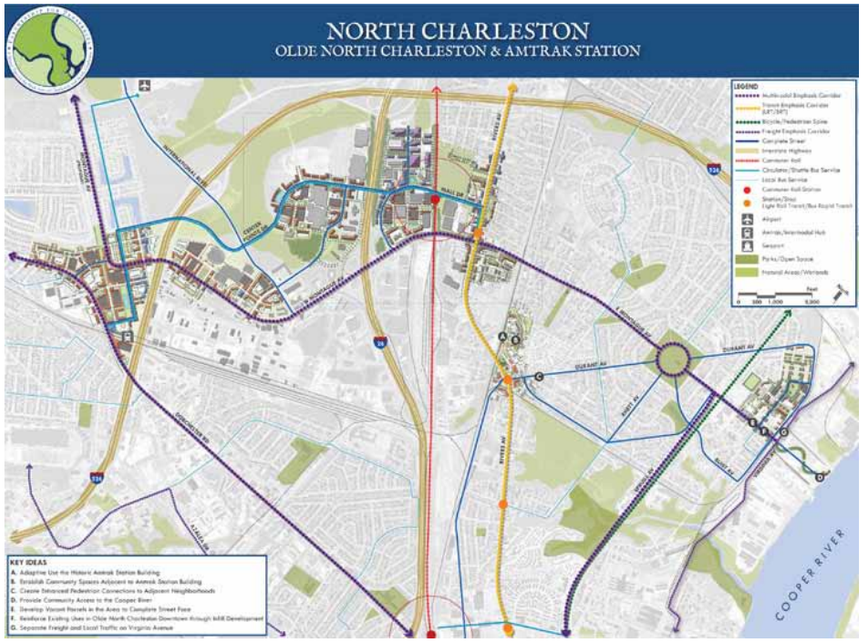


FIGURE B.70 DESIGN CONCEPT AREAS, AMTRAK STATION & OLDE NORTH CHARLESTON

FIGURE B.72 CATALYST AREA DESIGN PHASING - AMTRAK STATION

FIGURE B.71 DESIGN CONCEPT RANKING, AMTRAK STATION & OLDE NORTH CHARLESTON

FIGURE B.73 CATALYST AREA DESIGN PHASING - OLDE NORTH CHARLESTON

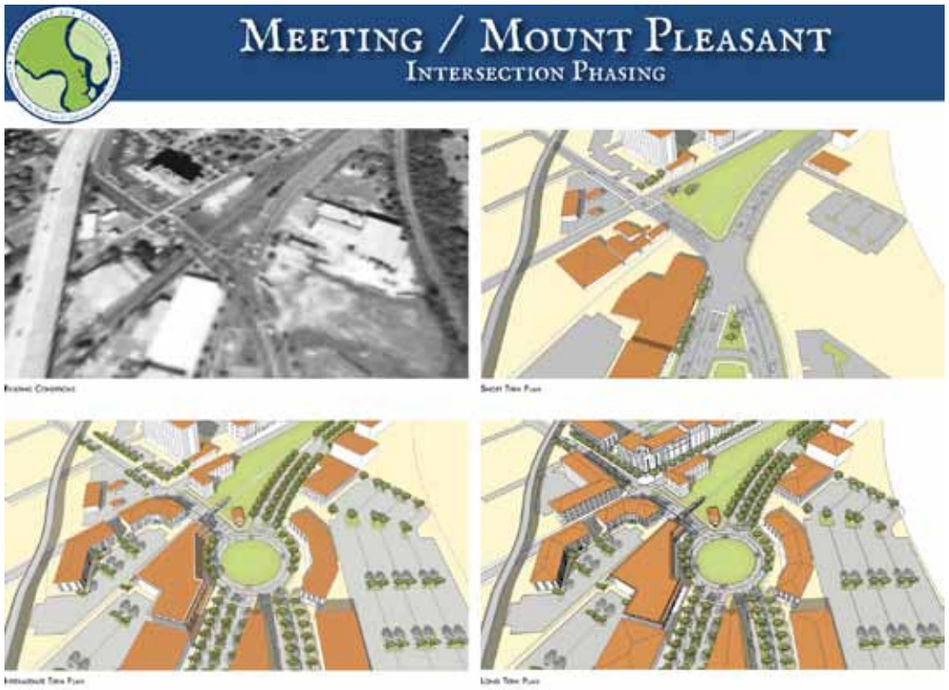


FIGURE B.74 INTERSECTION PHASING, MEETING STREET & MOUNT PLEASANT STREET

FIGURE B.75 INTERSECTION PHASING, MCMILLAN AVENUE & RIVERS AVENUE

Partnership for Prosperity: A Master Plan for the Neck Area of Charleston and North Charleston
Open House Voting Exercises: March 1, 2012 - Summary

Network Systems Concepts					
Concept	Most Important	Important	Less Important	Don't Like	Total Dots
Improve parallel street connectivity within the Neck area	1	2	0	0	3
Create a bicycle and pedestrian spine and connected network	7	2	0	1	10
Provide a layered network of transit systems to serve different travel markets and foster economic opportunity	7	1	2	0	10
Provide balance between rail and freight truck operations and local traffic	3	5	2	0	10
Develop anchors for community livability and economic vitality	4	1	0	0	5
Provide design solutions that help mitigate the environmental effects of industrial uses on neighborhoods	5	1	0	1	7
Provide opportunities for a connected network of parks and open spaces	4	4	2	0	10

Flip Chart Comments
1. Mount Pleasant Street needs sidewalks/complete street.
2. Huger is a key east/west connection - speeders on it (including police).
3. Want LRT.
4. Rail traffic must be elevated to allow rail/port/transportation expansion without destroying Neck neighborhoods.
5. Could you show existing developments, i.e. Noisette on maps to understand relationships to catalyst areas.
6. Multimodal implies mass transit - commuter rail needs to be free from existing traffic constraints (especially at rush hours).
7. Should the tank farm behind the Military Magnet School be shown as a proposed park?
8. Carefully study the connector off Virginia Avenue to I-526 if you direct too much much freight traffic that way.

Intermodal/Convention Center and Mall Drive Area					
Concept	Most Important	Important	Less Important	Don't Like	Total Dots
Create a new multimodal street corridor north of Montague Avenue	6	2	0	0	8
Realign Montague Avenue as a new connector route	2	3	1	0	6
Provide multiple transportation options to a variety of destinations	10	1	0	0	11
Redesign the Rivers Avenue/Montague Avenue intersection	0	4	1	0	5
Establish mixed use activity centers as a catalyst for new development	9	3	0	0	12
Establish appropriate scale and transition for new development	4	0	0	0	4
Phase in new development and structured parking decks to replace coliseum surface parking lots	0	6	4	3	13

Flip Chart Comments
1. Like connection over I-26 on Mall Drive.
2. How will some of these things be built when land is privately owned? Feasibility of plan?
3. Like Montague Avenue extension.
4. Where will money for Montague overpass come from?

5. Consider locating the new Amtrak Station/New Transportation center on the old shipyard - north of where a new passenger terminal could be located some day.
6. Leave space for Convention Center expansion.

Amtrak Station and Olde North Charleston					
Concept	Most Important	Important	Less Important	Don't Like	Total Dots
Adaptive use of the historic Amtrak station building	8	2	0	0	10
Establish community spaces adjacent to the Amtrak station building	2	3	0	1	6
Create enhanced pedestrian connections to adjacent neighborhoods	9	2	0	0	11
Provide community access to the Cooper River	10	1	1	0	12
Develop vacant parcels in the Olde North Charleston downtown area to complete the street face	0	8	1	0	9
Reinforce existing uses in Olde North Charleston downtown through infill development	0	3	0	0	3
Separate freight and local traffic on Virginia Avenue	8	1	2	0	11

Flip Chart Comments
1. Grocery in Park Circle
2. Provide streetscape improvements to get residents to Hendricks Park for Cooper River access - access at the end of Montague Avenue is unlikely.
3. Can the Virginia Avenue "split" be done within the existing right-of-way or will private property be utilized?
4. Is access to the Cooper River important here [end of Montague Avenue] or is it better to improve connections to existing parks, especially to the south at Noisette?
5. Improve the connections between the neighborhoods to the south of Olde North Charleston downtown and Montague Avenue/downtown.
6. Why isn't the port area included with this planning effort?
7. Provide more swimming classes to take advantage of connections to the water. [This person stressed the importance of lessons - that too many children from the area drown each year].
8. Provide more night time activity centers.

Shipwatch Square and Stromboli Corridor					
Concept	Most Important	Important	Less Important	Don't Like	Total Dots
Revitalize Shipwatch Square as a community focal point	16	0	0	0	16
Establish grocery and drug store catalyst sites in Shipwatch Square	19	0	0	0	19
Provide a variety of transit options in the area	8	1	0	0	9
Define neighborhood parks and gathering spaces in the Shipwatch Square area	2	0	0	2	4
Develop Stromboli as a community core with neighborhood oriented uses	14	0	0	4	18
Create enhanced pedestrian connections from Stromboli to neighborhoods	0	1	1	0	2
Establish new recreation opportunities and outdoor event spaces in the Stromboli area	4	3	0	1	8

Flip Chart Comments
1. Shipwatch Square - an opportunity for local businessmen. Look at opportunities for office space (currently Rivers Avenue is lacking in quality offices). Ensure it is affordable.
2. Use I-26 as a premium transit corridor with hubs that provide connections to the Rivers Avenue corridor. Make Rivers Avenue a multi-use boulevard with shopping and community uses.
3. Look at the North Charleston Mitigation Plan for Stromboli Avenue plans - rail line extension and port connector road.
4. Water (fire), sewer and stormwater on Spruill between Jackson and Stromboli. [There are no services in place - current uses are grandfathered. Prospective buyers are scared away because they would have to make improvements - City should add infrastructure].
5. [Stromboli corridor park] lake is shown on landfill site.
6. Consider elevated rail from Bennett yard over to port.
7. Indoor recreation activities are necessary, but these need to be in all areasto be developed and for all age groups since parks close at dusk.

North of Mount Pleasant and South of Mount Pleasant					
Concept	Most Important	Important	Less Important	Don't Like	Total Dots
Develop a creative corridor along Meeting Street	11	3	0	0	14
Create a new gateway entrance into Charleston along Morrison Avenue	6	3	1	0	10
Redevelop outdated shopping centers along King Street	7	1	0	0	8
Redesign the Mount Pleasant Street/Meeting Street intersection	9	2	1	1	13
Develop vacant parcels to complete the street face of key roadways in the area	3	2	0	0	5
Buffer industrial uses from other development in the area	4	0	0	0	4
Establish a shared use path under the elevated sections of I-26	6	4	1	0	11

Flip Chart Comments
1. Commuter rail is expensive and long term - look at bus rapid transit as a good interim strategy.
2. I support the roundabout at Meeting/Morrison but it will need to be long term due to cost.
3. Existing ramp on I-26 at Mount Pleasant is very tight - support redoing it to make it safer.
4. Existing buildings and churches south of Mount Pleasant Street no longer on map.
5. Access to Rosemont and Bridgeview communities.
6. General concern over implementing plans at this large a scale.
7. Keep the railroad crossings bumpy. [person stressed that it slows down cars]
8. Stay away from tall buildings in this area; most homes were built between 1910-1940 and are Craftsman style. Tall buildings would look out of place and deter the integrity of the community here.
9. Focus more on using existing structures and not tearing down so many buildings to to build new structures that look out of place.
10. Create opportunities for local businesses to inhabit new developments.
11. Definitely focus on "complete streets" around these neighborhoods - close proximity to downtown Charleston.
12. Shared use idea under I-26: large skate park for skateboarding, cyclists, scooters, etc...sorely missing in this area.

Figure B.76 Catalyst Area Design Phasing - Open House Voting Exercise

Appendix C
Open Space Facilities

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Open Space

GENERAL

Open space contributes to the health and quality of life for residents, promotes community sociability, provides a variety of recreational and educational activities for all ages, and helps preserve and enhance the natural environment.

Passive-based open space emphasizes enjoyment of a natural resource or activity and not competition or participation. Facilities may include picnic tables, benches, observation areas, gardens, historic or cultural sites.

Active-based recreation uses promote participation and rely on the presence of facilities that enable certain activities to function. User-oriented activities may include baseball, football, soccer, basketball, and tennis. Resource-based activities include hiking trails and water-related pursuits.

A variety of open spaces exist within the Neck area (see **Figure 4.7**). These areas fall into several broad categories that have been described below. In order to fully understand how these open spaces function within the Neck area for planning purposes, facilities must not only be looked at individually, but how they connect and contribute to the system as a whole. A complete inventory of Open Space Facilities can be found in **Appendix C**.

PARKS

Parks are the basic unit of the open space system and serve as the recreational and social focus of the community. Parks should accommodate a wide variety of age and user groups, with a focus on both informal active and passive uses. The following parks are located within the project area:

- Allan Park (passive, approx. 0.5 acres): walkways, benches, lawn area, and fountain.
- Brittlebank Park (passive, approx. 15.5 acres): walkways, benches, picnic tables, playground, lawn areas, water access, and piers.
- Crosstown Park (passive, approx. 0.3 acres): benches and lawn area.
- Cool Blow Park (active, approx. 2.0 acres): one multi-purpose sports field with backstop, playground, and one basketball full court.
- Ferndale Park (passive, approx. 0.5 acres): lawn area with no facilities.
- Ferrara Drive Pocket Park North (passive, approx. 1.3 acres): lawn area with no facilities.
- Ferrara Drive Pocket Park South (passive, approx. 1.5 acres): benches and lawn area.
- Hampton Park (active/passive, approx. 55 acres): walkways, benches, picnic tables, garden, gazebo, pond, dog run, lawn areas, two baseball diamonds, and one basketball full court.
- Harmon Field Park (active, approx. 13.0 acres): benches, lawn areas, playground, swimming pool, two multi-purpose sports fields, two baseball

Hampton Park

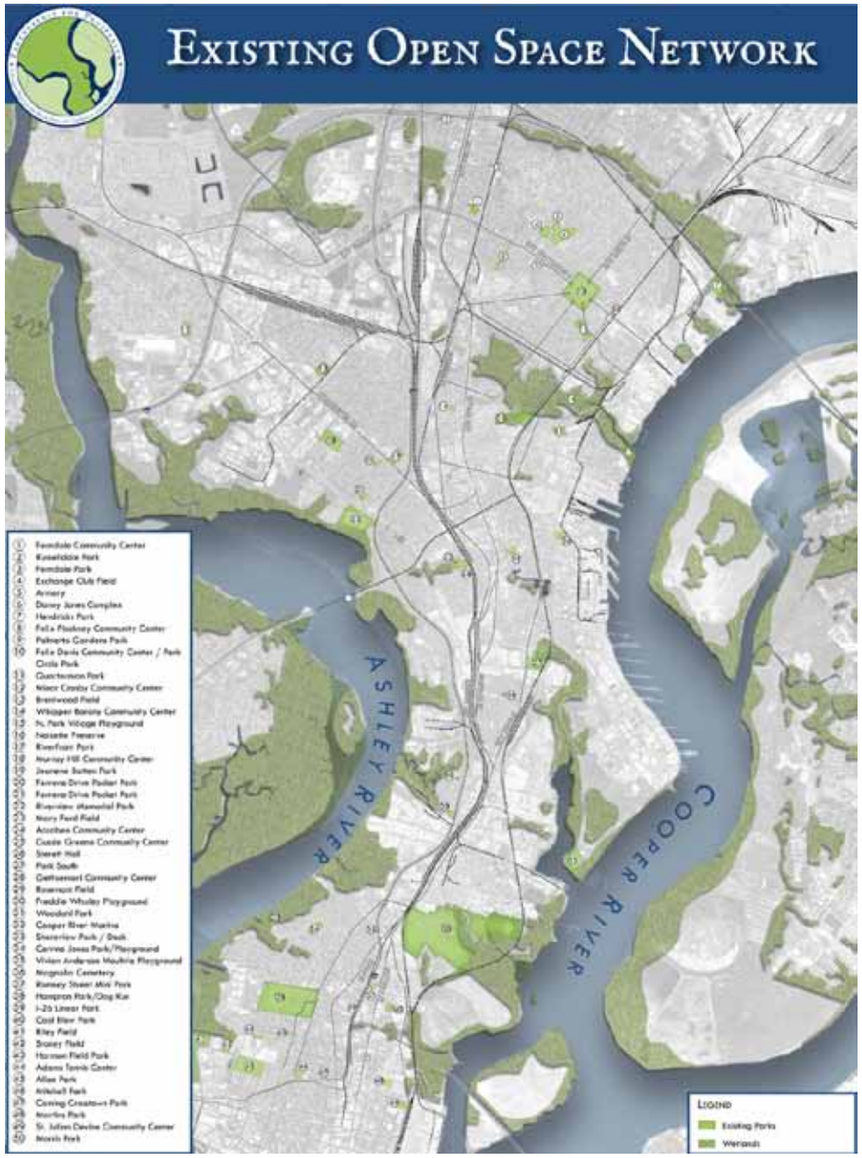

Figure C.1 Existing Open Space Network

diamonds, two basketball full courts, and field house.

- Hendricks Park (passive, approx. 5.5 acres): benches, walkways, lawn areas, shelter, pier, and boat ramp.
- Jones Park (active, approx. 3.5 acres): benches, playground, one multi-purpose sports field, two tennis courts, one basketball full court, and one basketball half court.
- Martins Park (active, approx. 3.5 acres): benches, lawn areas, playground, swimming pool, one baseball diamond, one basketball full court, two basketball half courts, and field house.
- Mitchell Park (active, approx. 1.7 acres): benches, lawn areas, playground, one basketball full court, and multi-purpose sports field with backstop.
- Morris Park (active, approx. 1.5 acres): benches, lawn areas, playground, and four tennis courts.
- Palmetto Gardens Park (passive, approx. 2.5 acres): benches, lawn areas, and playground.
- Park Circle (active, approx. 30 acres): benches, lawn areas, gazebo, playground, two baseball diamonds, and disc golf course.
- Park South (active, approx. 8.0 acres): lawn areas, one multi-purpose sports field, and one basketball full court.
- Quarterman Park (passive, approx. 5.0 acres): benches, walkways, picnic tables, and pond.
- Riverfront Park (passive, approx. 13.0 acres): benches, lawn areas, walkways, bandshell, water access, pier, boardwalk, playground, and dog park.
- Romney Street Mini Park (active, approx. 0.5 acres): lawn area and one basketball half court.
- Shoreview Park (passive, approx. 2.5 acres): benches, walkways, water access, and pier.

Athletic Fields

Fields are areas prepared for the play of organized sports and games and include both grassed ground (such as baseball, softball, and football fields) and hard court areas (such as basketball, tennis courts, tracks, and hockey rinks). The following athletic fields are located within the project area:

- Brentwood Field: one baseball diamond.
- Danny Jones Complex: one baseball diamond, four tennis courts, swimming pool, roller hockey rink, track, and football/soccer field.
- Exchange Club Field: one baseball diamond.
- Mary Ford Field: one baseball diamond.
- Joseph P. Riley, Jr. Park: one baseball diamond (Charleston Riverdogs professional baseball franchise)
- Rosemont Field: one multi-purpose sports field with backstop.
- Stoney Field: track and football/soccer field.

Playgrounds

Playgrounds are designed to provide both active and passive uses, usually with distinct play areas and equipment for preschool (ages 2-5) and/or school age children (ages 5-12) and informal recreation for all ages. They are often located adjacent to an elementary school. The following playgrounds are located within the project area:

- North Park Village Playground
- Vivian Anderson Moultrie Playground
- Freddie Whaley/Rosemont Playground

Shared Use Paths / Trails

For purposes of this inventory, trails (more accurately known as shared use paths) for recreational use include only off-road multi-use trails. On-street facilities are included in the bicycle/pedestrian network. There is only one trail located within the project area:

- A paved trail is located beneath the raised portion of I-26 from Huger Street to Mount Pleasant Street (approx. 0.9 miles); it contains both paved and unpaved sections.

Community Centers

Community Centers are indoor meeting places used by members of the community for cultural, educational, social, or recreational (such as swimming pools, gyms, and weight training facilities) purposes. The following community centers are located within the project area:

- Accabee CC
- Armory
- Felix Davis CC
- Felix Pinckney CC
- Ferndale CC

- Freddie Whaley CC
- Gethsemani CC
- Gussie Greene CC
- Jeanene Batten CC
- Minor Crosby CC
- Murray Hill CC
- Russelldale CC
- St. Julian Devine CC
- Sterett Hall
- Whipper Barony CC

Special Use Facilities

The Special Use classification covers a broad range of recreation facilities oriented towards a single-purpose use. The following special use facilities are located within the project area:

- Adams Tennis Center (six courts)
- Cooper River Marina

Natural Spaces

Natural open space areas consist of landscape set aside for the purpose of preservation or conservation of natural resources, natural features, buffering, or scenic/aesthetic value. The following natural areas are located within the project area:

Magnolia Cemetery

- Magnolia Cemetery
- Noisette Preserve
- Riverview Memorial Park
- Woodahl Park

Schools

Schools also provide a variety of open spaces for recreational purposes and are usually available for community use during non-school hours. The following schools in the Neck area provide recreational spaces:

- Academic Magnet HS
- Brentwood MS
- Burns ES
- Chicora ES
- Garrett Academy
- Hursey ES
- Mary Ford ES
- McNair ES
- Military Magnet School
- Morningside MS
- North Charleston ES
- North Charleston HS
- School of the Arts
- Burke HS
- Citadel
- Clyde ES
- Mitchell ES
- Rivers ES

Although there are a variety of routes to get from one open space area to another along the street network, as discussed in the bicycle/pedestrian system section of this chapter, there are gaps in the network that prevent clear and safe mobility options for users.

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Appendix D
Spruill Avenue : Road Conversion White Paper

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SPRUILL AVENUE

ROAD CONVERSION WHITE PAPER

FIRST DRAFT – JANUARY 5, 2012

1. Executive Summary

The resurfacing of Spruill Avenue between McMillan Avenue and Meeting Street offers an opportunity to enhance livability along the Spruill Avenue corridor in North Charleston by better accommodating bicycle and pedestrian travel along this corridor. To that end, this white paper, developed as part of the Berkeley-Charleston-Dorchester Council of Governments (BCDCOG)-sponsored Partnership for Prosperity – A Master Plan for the Neck Area of Charleston and North Charleston, recommends a road conversion that would incorporate buffered bicycle lanes within a three-lane typical section as part of the current resurfacing project. This action will improve traffic safety, improve bicycle connectivity and quality of service, and increase livability while retaining acceptable levels of service for motor vehicles. The conversion will not significantly affect implementation costs or timeframes and will help achieve the objectives the ongoing Neck Area Master Plan efforts. The road conversion is consistent with the objectives of the 2008 North Charleston Comprehensive Plan.

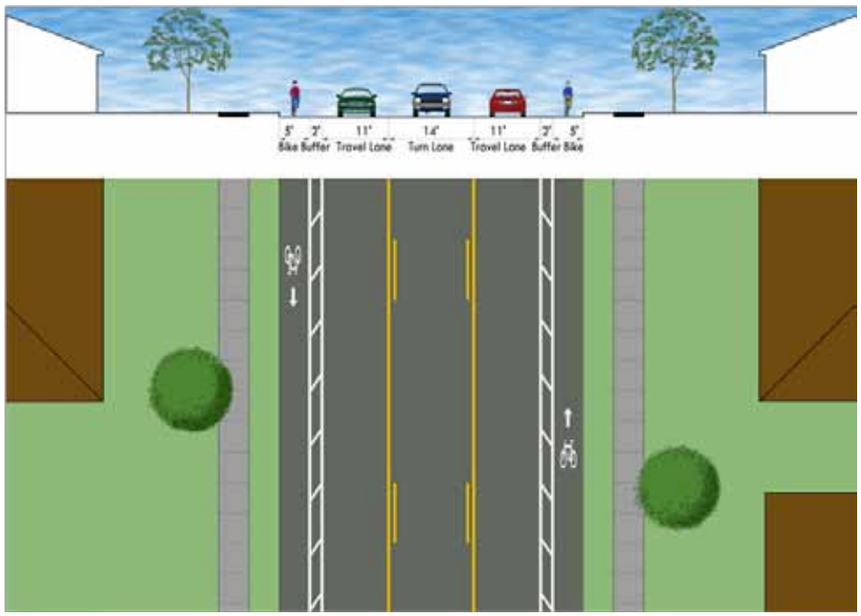

FIGURE D.1 RECOMMENDED SECTION

2. Road Conversion Purpose and Need

Through the Neck Area Master Plan (Master Plan), the BCDCOG and the Cities of North Charleston and Charleston seek transportation and land use solutions that improve sustainability, livability, and economic opportunity. The Master Plan identifies the need for a high-quality, visible bicycle and pedestrian spine route that connects North Charleston and Charleston. The Spruill Avenue corridor is a logical corridor for facilitating longer-distance bike accommodations based on its general alignment (relatively straight and flat), adjacent land uses (low levels of conflicting activities such as parking and driveway maneuvers), and high levels of connectivity to nearby emerging redevelopment nodes, such as the Navy Yard at Noisette and Shipwatch Square. The corridor also ties in directly with the Liberty Hill and Park Circle neighborhoods, and the Olde North Charleston main street along East Montague Avenue, helping to strengthen these commercial retail and civic destinations.

Over the long-term, this major bicycle route is envisioned as consisting of a shared use path (using abandoned railroad right-of-way parallel to Spruill Avenue, where available) complemented by signature on-road facilities and an enhanced pedestrian environment that would provide for increased comfort and safer travel along the corridor. This concept is also supported by the City of North Charleston Comprehensive Plan and the Lowcountry Alliance for Model Communities (LAMC) Area Revitalization Plan, which include a proposed bicycle & pedestrian trail along Spruill Avenue, and in the draft 2035 CHATS Long-Range Transportation Plan, which includes policies, recommendations and funding for Complete Streets programs and projects. While a shared use path along the length of the corridor is a long-term goal, it is unlikely that an off-road facility will be possible along entire corridor. In addition, providing a range of options for bicyclists and other roadway users through a modified roadway design will increase bicycle mobility and connectivity, lower travel speeds, and increase safety, all of which contribute to overall livability along the corridor and in the Neck area.

The Neck plan is pursuing a roadway conversion for the entire length of Spruill Avenue from Meeting Street to Montague Avenue. However, due to the immediate implementation opportunity provided by the current resurfacing project, this white paper focuses on the section of Spruill Avenue between McMillan Avenue and Meeting Street. This section of Spruill Avenue is a five-lane roadway within a 50' wide typical section that provides capacity for auto volumes higher than will be expected over the next 25 years. The reconfiguration of the roadway cross-section to provide buffered bicycle lanes as described below would improve valuable bicycle connectivity in the corridor and, with a thoughtful design, would likely attract more riders from neighborhoods along the corridor.

3. Corridor Context

Spruill Avenue is a SCDOT-maintained state highway (Route S-10-32) that runs generally parallel to and east of Interstate 26 and US Route 52 in the neck of

Figure D.2 Project Location

the Charleston peninsula. It connects Montague Avenue to the southern boundary of the City of North Charleston, where it intersects with Meeting Street near Exit 218 of I-26.

A currently active railroad line runs parallel to Spruill Avenue on the east, and the former Charleston Naval Shipyard is located just beyond the railroad track. Along most of Spruill Avenue, the railroad is about 25 feet beyond the edge of the road right-of-way. Between North Carolina Avenue and Delaware Avenue, the railroad track and Spruill Avenue diverge. In the 0.4-mile stretch between Delaware Avenue and Meeting Street the railroad track comes back to being adjacent to Spruill Avenue in a small railyard with a series of railroad sidings for switching railcars.

Spruill Avenue is classified as a minor arterial north of McMillan Avenue and south of Burton Lane. Between McMillan Avenue and Burton Lane, it is classified as a principal arterial. Spruill Avenue is not a designated hurricane evacuation route; US Route 52/78, which runs parallel to the west of Spruill Avenue, is a major emergency evacuation route. The former Charleston Naval Shipyard is located between Spruill Avenue and US Route 52/78 near McMillan Avenue.

Spruill Avenue is not part of the National Highway System, or a state highway truck or bikeway networks. During 2010, the SCDOT reports an average annual daily traffic (AADT) of 9.600 vehicles on Spruill Avenue just south of the intersection with Cosgrove Avenue. Further south, the 2010 AADT is 11,200 vehicles on Spruill Avenue just south of Stromboli Avenue. The posted speed ranges from 35 to 40 mph. With two 10-foot wide travel lanes in each direction and one 10-foot wide center turn lane, traffic conditions are generally free-flow and vehicles travel at speeds significantly higher than the posted speed. There is no on-street parking available.

North of North Carolina Avenue, a narrow sidewalk is provided on the western side of Spruill Avenue, offset a few feet with a grassy buffer. Between North Carolina Avenue and Burton Lane, sidewalks are provided along both sides of Spruill Avenue without any buffer space. Sidewalks are provided along both sides of Spruill Avenue with a narrow grassy buffer between Burton Lane and Beech Avenue. South of Beech Avenue, only the western side of Spruill Avenue has sidewalks.

Fixed route bus service is provided along Spruill Avenue. CARTA Route 101 runs along the northern portion of Spruill Avenue between Montague Avenue and Reynolds Avenue (south of McMillan Avenue). CARTA Route 11 runs along the southern portion of Spruill Avenue from Dorchester Road to the south.

Development activity directly along Spruill Avenue is very limited. Generally land uses are vacant or abandoned former industrial plots of land. In some areas Spruill Avenue runs on the edges of single-family neighborhoods. This corridor has potential to redevelop, as there are several areas with vacant or underutilized properties. A few single family homes on corner lots have little side setback from Spruill Avenue. Setbacks for commercial buildings range from as little as five feet from the sidewalk, like the Tri-County Plaza of Charleston at 2931 Spruill Avenue at the intersection of Norwood Street, to 80 feet or more to accommodate off-street parking in front of buildings.

Two areas identified in the Neck Area Master Plan for future economic growth in the Neck area, Shipwatch Square and the Navy Yard at Noisette, are located several hundred yards to the west and to the east of Spruill Avenue, respectively. Although long-term potential exists for redevelopment along the Spruill Avenue corridor, including at the Reynolds and Stromboli neighborhood commercial

centers, and at the several underutilized industrial properties, significant change is unlikely in the near term. The resurfacing project on Spruill Avenue provides an immediate opportunity to put in place a significant link in the bicycle connectivity network for the Neck area. There are few good north-south corridors in the Neck area that can safely accommodate bicyclists in a comfortable on-road setting due to high traffic volumes, heavy truck traffic, higher speeds and lack of continuity. For a variety of reasons, Spruill Avenue provides the best context for such a north-south Complete Street corridor to emerge that would effectively link both cities and connect neighborhoods along the corridor to commercial, employment and civic destinations. This resurfacing project provides an opportunity that the community cannot afford to lose, as one of the most common ways of implementing complete streets projects is through routine maintenance and resurfacing projects such as this one.

4. Alternatives Considered

The current repaving plan is designed to retain the existing five-lane typical section as well as two alternatives that would implement bicycle lanes in the corridor. The City of North Charleston has requested that SCDOT consider providing 5-foot bicycle lanes on each side of Spruill Avenue by maintaining the existing four 10-foot travel lanes and eliminating the existing two-way left turn lane . This study also examined a three-lane alternative with an 11-foot travel lane in each direction, a 14-foottwo-way left turn lane (TWLTL), and buffered bike lanes (5-foot lanes and 2-foot striped buffers). Figure 2 shows the typical section for each alternative. In this report, the City of North Charleston's four-lane section is identified as a "proposed section" and the three-lane section is identified as the "recommended section".

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Appendix E
Goods Movement Data

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COMMERCIAL VEHICLE SIZE AND WEIGHT ENFORCEMENT

At a federal level Congress and FHWA have defined primary networks from a policy standpoint for encouraging interstate commerce and heavy truck travel. The National Network of Highways includes: (1) the Interstate Highway System and (2) other highways designated by states in response to the Surface Transportation Assistance Act (STAA) of 1982 as being capable of safely handling larger commercial motor vehicles. Off the National Network, states, counties and municipalities have the authority to set load limits on roadways under their jurisdiction. Most often, state authorities establish the governing gross weight limits, axle load limits and vehicle dimension standards that apply to local jurisdictions. Local authorities typically "post" or adopt route specific regulations to protect critical or deteriorating infrastructure.

The demand for urban goods and services requires the use of large commercial vehicles to move goods, even in congested urban areas. Further, the drive to increase the efficiency of goods movement sometimes results in trucks being loaded beyond legal limits. The primary purpose for adopting and enforcing truck size and weight regulations include:

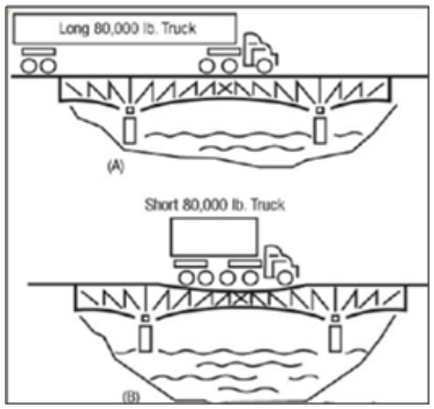
- Pavement protection;
- Bridge protection; and
- Safety.

TRUCK WEIGHT AND PAVEMENT DAMAGE

Pavement damage is determined primarily by axle loads – or more precisely, by the weight on the "footprint" of the vehicle's tire contact with the pavement. For this reason, in addition to axle load regulations, many states also have weight per inch of tire width limits. There are no federal regulations governing weight per inch of tire width, but "super single" tires becoming a popular replacement for dual tires, more than half of the states have adopted tire weight laws. The tradition means of enforcing truck weight laws has been through the use of static roadside bed scales, or mobile enforcement using wheel scales. For many urban areas the space required to pull-over and weight trucks prohibits efficient enforcement. However, studies have shown that the cost of overweight trucks can significantly out weight the cost of greater enforcement resources. And, data in urban areas suggest that many single unit trucks such as refuse and construction trucks (e.g. cement mixers, gravel trucks, etc.) are often significant violators.

TRUCK WEIGHT AND BRIDGE DAMAGE

Bridge damage is primarily impacted by the total weight of the vehicle – i.e. the total suspended weight upon the bridge structure. However, the bridge deck or pavement surface on the bridge is also affected by axle weight. Most bridge regulations in the U.S. are based on the federal bridge formula which establishes the maximum weight for bridges based on weight, number of axles and the



length between the front and rear axles of the vehicle. On short bridges long vehicles will likely not transfer the total weight of the vehicle to the bridge at one time, while shorter vehicles transfer more weight to individual bridge members. Given the types of trucks that typically operate in urban environments, overweight, short trucks can cause premature bridge deterioration.

Bridges are affected by the weight of trucks in two ways: fatigue and overstress. Fatigue refers to repeated loads on a bridge that cause it to flex, much like repeatedly bending a piece of wire back and forth. Overstress refers to the possibility of severe damage and possible collapse caused by a single extreme loading event.

One of the most frequent causes of bridge damage in urban areas results from commercial vehicles striking bridges and overpasses. An investigation by New York DOT and the City of New York found that in 2008 there were 98 incidents of commercial vehicles striking bridges in New York City alone. Bridge strikes can result in death or injury, infrastructure damage, road closures and other operational disruptions (e.g. strikes to rail bridges can close rail lines). NYCDOT is addressing bridge strike problems through enforcement of truck routes, detailed GIS mapping of low clearance bridges, education and outreach, reflective signing of low bridges, and the use of technology to monitor those bridges most prone to strikes.

Truck size and weight regulations were conceived originally as a means of maintaining the integrity of quality roadways. However, truck weight and dimension also affects vehicle handling characteristics such as stability and control. Operating a truck beyond limitations established in law can severely degrade stopping ability, put excess wear on vehicle components such as brakes, tires and suspensions systems. Overloads also degrade the ability of a heavy truck to

accelerate into traffic or through intersections or railroad crossings, or maintain vehicle stability in high-speed, tight curves.

Commercial Vehicle Emission Regulations

Since passage of the Clean Air Act in 1963, U.S. federal emissions standards for light, medium and heavy duty trucks have become increasingly stricter. In the past decade new diesel engine standards, as well as, EPA standards for low sulfur diesel fuels have continued to cut emissions despite the growth in commercial vehicle miles of travel. While stricter federal regulations on trucks serve to lower emissions on new vehicles, these improvements often filter more slowly to urban truck operations and trucks engaged in relatively short-haul drayage from container ports. Due to the short-haul nature of urban and drayage truck operations, these fleets turn over more slowly. It is not uncommon for once long-haul over-the-road trucks to be semi-retired into the service of urban and drayage truck operations before being retired for good.

To lower emissions in urban areas an increasing number of state and local jurisdictions are imposing restrictions on trucks such as idling regulations and engine compliance rules. The American Transportation Research Institute (ATRI) has assembled a compendium of truck idling relations that cites 22 states and more than 50 city and county jurisdictions that impose engine idling restrictions. Currently South Carolina state law prohibits trucks from idling more than 10 minutes in any one hour period. (SCCL §56-35-40)

In addition to idling regulations, an increasing number of jurisdictions are providing financial incentives to trucking companies to adopt clean technology trucks. For instance, many of the nation's largest container ports offer grants and low interest loans to help owners replace equipment manufactured prior to 2004, when the first new diesel engine technologies were mandated by EPA.

Once the infrastructure design guidance is established and operational policies adopted, it is important to take the necessary steps to sell the improved routes to the users and local communities. This section outlines several strategies that can be used to market the truck routes in the Neck area.

Marketing Truck Routes and Selling Compliance

Three overarching strategies are presented to market the improved truck routes and sell compliance to drivers in the Neck area, local communities, and local and regional authorities. These strategies include:

- Marketing to commercial drivers – positive route guidance;
- Enhanced route enforcement; and
- Freight quality partnerships – a grass roots approach to win-win solutions.

Appendix F
Design Guidelines

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1.0 INTRODUCTION

Background: The purpose of this document is to bring together a comprehensive set of design guidelines and standards for new development in the Charleston Neck area in order to ensure compatibility with the urban design and built character of the surrounding community.

1.1 *Purpose and Intent*

This document is intended as an accompaniment to the Partnership for Prosperity Master Plan in order to provide additional guidance on the design of public and private improvements in the Neck Study Area. These guidelines are primarily intended for new development and redevelopment that is anticipated to occur in the Neck area in the coming years. They are intended to preserve the economic investments made in the area by ensuring that all future improvements will maintain a consistent design character and high quality of design and construction. The overall intent is to ensure that residents and businesses that have made investments based on the quality and character of the built environment have a reasonable assurance that those investments are supported through a consistent design character for the Neck into the long term future. The use of agreed-upon standards for new development should, in the long run, benefit everyone, ensuring that the Neck will maintain a consistently high quality design character that can be a source of pride and a basis for continued long term investment.

1.2 *Relationship of Guidelines to Master Plan*

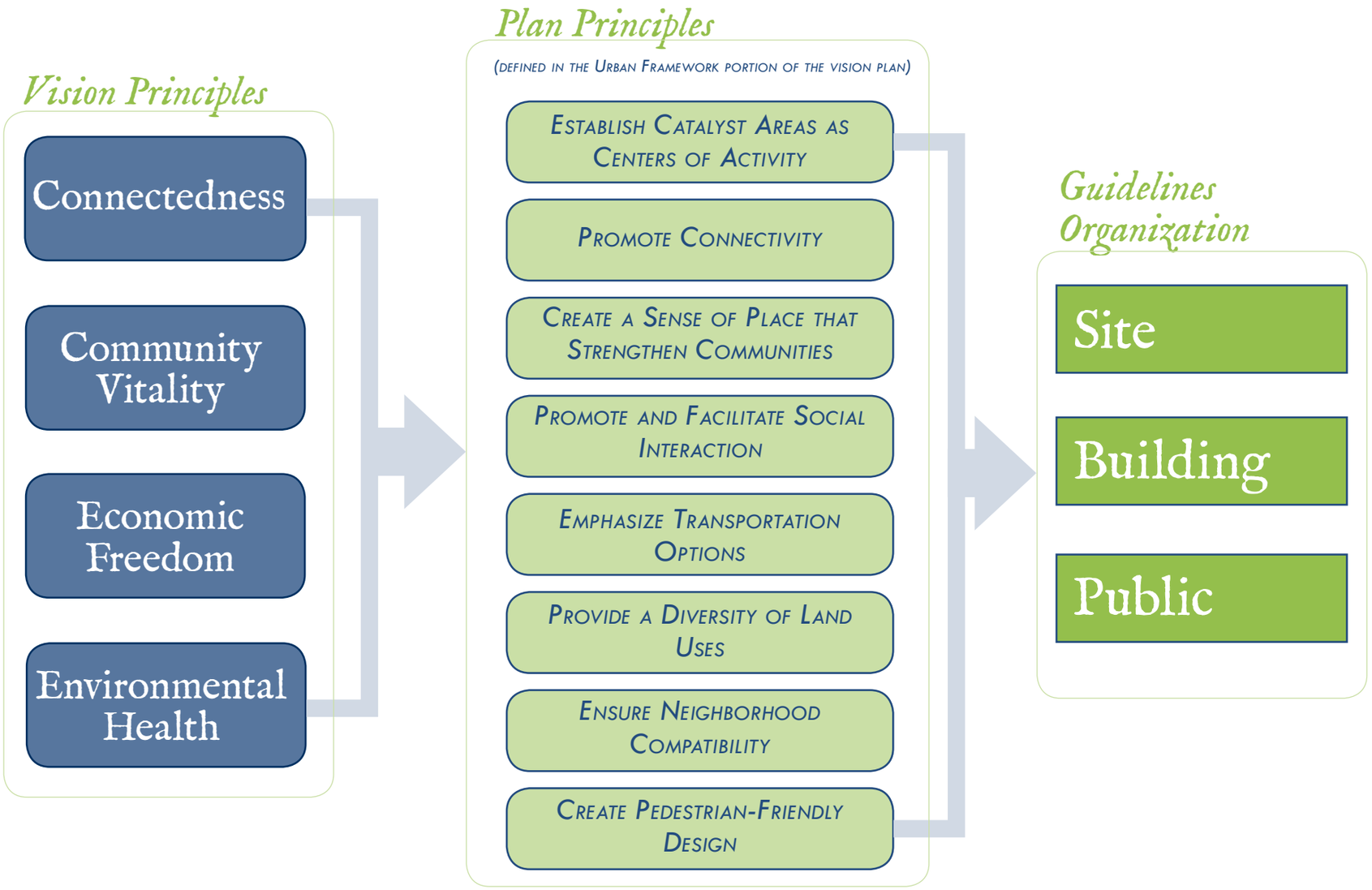
The Partnership for Prosperity Master Plan provides a basic long term framework for the planning and development of the Neck. In addition to laying out a plan for land use, transportation, and environmental sustainability, the plan also presents a compelling vision for the Neck area's future in terms of design character. However, the design vision established in the Master Plan is necessarily broad, as it relates to multiple Catalyst Areas, as well as to existing neighborhoods and businesses in the whole study area. As developers, investors, companies, institutions, and other stakeholders begin to participate in the area's revitalization; they will be looking for additional guidance in designing and executing projects that will advance the vision.

1.3 *Design Excellence in the Neck*

The design principles described in these Design Guidelines provide a more detailed framework for specific design details and overall development quality, as well as transportation system improvements, land use and urban design principles.

These Guidelines are organized into three basic categories of design elements:

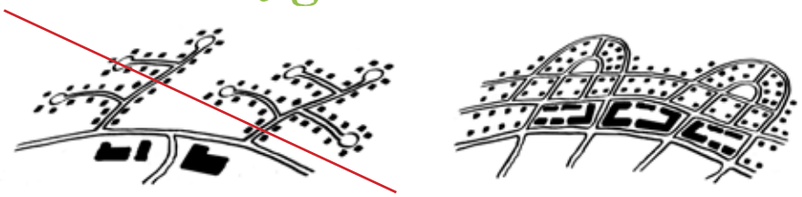
- Site Planning
- Building Design
- Streets and Public Spaces


Vision Principles
Connectedness
Community Vitality
Economic Freedom
Environmental Health
Plan Principles
(defined in the Urban Framework portion of the vision plan)
Establish Catalyst Areas as Centers of Activity
Promote Connectivity
Create a Sense of Place that Strengthen Communities
Promote and Facilitate Social Interaction
Emphasize Transportation Options
Provide a Diversity of Land Uses
Ensure Neighborhood Compatibility
Create Pedestrian-Friendly Design
Guidelines Organization
Site
Building
Public

2.1 SITE PLANNING

Background: Successful site planning balances automobile and pedestrian accessibility and creates an environment that is welcoming to all users. A key factor is the organization of buildings and parking relative to adjacent streets. Frequently, buildings are set too far back from the road, leaving a large, open expanse of parking visible to visitors from the roadway, and a wide, often uninviting, expanse of asphalt to be crossed by pedestrians. A more desirable alternative reverses this placement, drawing the building to the street edge and moving parking to the rear, in turn providing a more intimate pedestrian-friendly frontage along the roadway. In this way, buildings frame the street, enhancing and enlivening the pedestrian environment with storefronts and entrances along the sidewalk.

2.1.1 *Block Configuration*

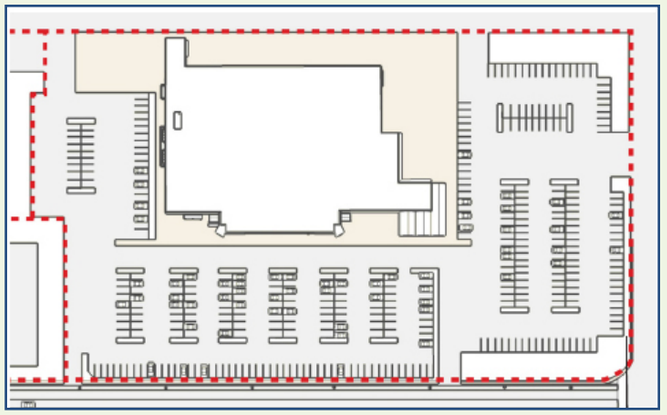


A well-designed block network promotes pedestrian activity and encourages walking in place of driving for local trips by making connections between destinations accessible and convenient. Compact blocks facilitate an interconnected street network and provide the framework for mixed-use development and a greater diversity of building types within close proximity. Increased street connectivity also disperses traffic flows, subsequently helping to transform the street into a comfortable space for pedestrians. Interconnected transportation networks can provide advantages such as enhanced vehicular and pedestrian access, reduced traffic congestion, and enable emergency vehicles to respond in a more timely manner.

Many communities have adopted maximum block length standards or street connectivity standards to facilitate vehicular and pedestrian circulation. Block length standards should encourage pedestrian-oriented blocks between 200 and 600' in length. A typical pedestrian trip length is about 1/4 mile or approximately 5 minutes. Therefore, block lengths a distance of 1/8 of a mile or shorter are encouraged to promote pedestrian activity and access to a variety of destinations within a typical walk.

Design Objectives:

- Disperse traffic by providing multiple routes
- Provide opportunities for shorter trips
- Reduce congestion on major thoroughfares



650' block

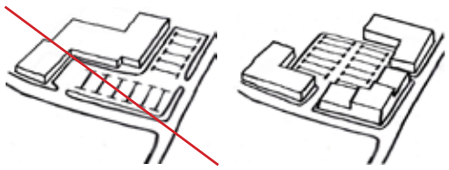
The illustration above shows a typical auto-oriented site plan. The illustration below shows how it could be reorganized to accommodate pedestrian-oriented block sizes.

325' block | 325' block

Poorly Networked Uses/Streets *Well Networked Uses/Streets*

2.1.2 Building Location, Orientation, & Use

Building Location & Orientation



Proper building location and orientation can reduce walking distances from the sidewalk and make streets more useful for pedestrians, transit users, and bicyclists. Building entries should border main streets and public thoroughfares to foster a vibrant, walkable environment.

Design Objectives:

- Provide convenient pedestrian access between public sidewalks, on-site parking, and buildings.
- Provide a more continuous street wall that encourages pedestrian activity and reinforces a sense of place
- Orient entrances to the sidewalk to enliven the pedestrian realm.

Use

Creating a pedestrian-friendly environment typically includes providing a careful balance of land uses, jobs, housing, restaurants and shopping within a compact area. To be successful, mixed use development must utilize both a vertical (multiple floors) and horizontal (adjacent buildings) mixture of uses; include an interconnected street network that enhances mobility for pedestrians and cyclists, and allows users to park once and walk between several uses; and provide a balance between activities that occur between the daytime, evening, and weekend hours, fostering a busier, safer, and more exciting environment 24 hours a day.

Regulations can require mixed use development for individual parcels or promote single land uses that provide land use diversity within a ¼-mile range of a parcel. They can prohibit developments, such as drive-through businesses, that discourage pedestrian activity. In all cases, a specific definition of mixed use is needed that establishes a threshold by which the mix of uses is measured.

Design Objectives

- Offer a variety of land uses in a compact, walkable area to promote walking, biking and transit
- Create opportunities for local trips
- Allow a greater variety of uses to occupy a given space
- Provide pedestrian-supportive uses on the ground floor and other uses in the stories above

Discouraged: A wide, uninviting, expanse of asphalt creates a barrier to pedestrian activity and encourages shoppers to drive to other destinations within the site.

Encouraged: Building orientation that encourages pedestrian activity to and between destinations

Discouraged: single uses disconnected from other uses and from sidewalk access.

Encouraged: mixed use within an interconnected street network

2.1.3 *Site Entry and Access*

Accessing businesses from the primary roadway via individual driveways is typical of auto-oriented streetscapes. The sidewalk is interrupted by driveways, increasing the possibility of conflicts between transportation modes. The primary roadway traffic is also interrupted by turning vehicles. Consolidating driveways will lessen these interruptions and help encourage pedestrian activity.

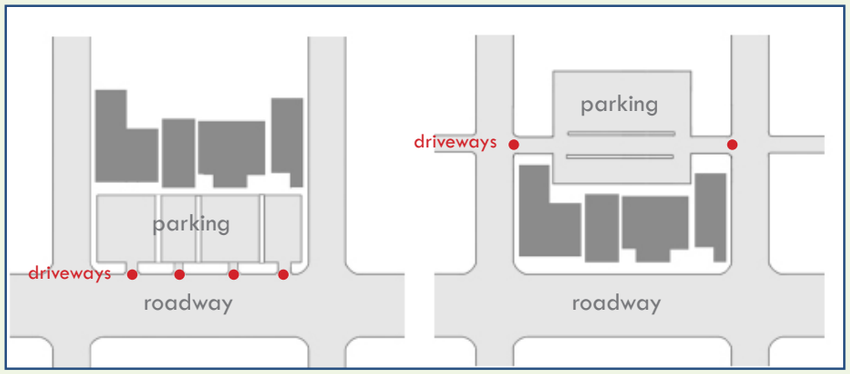
Access management should be used to minimize unnecessary driveway connections and to encourage shared and cross-access between adjacent parcels. Access management that supports pedestrian activity, while accommodating vehicles, often makes use of a single alleyway, side, or rear entrance to a common parking lot, usually internal to a block or behind a set of buildings. Shared driveway access strategies can also help reduce pedestrian and bicyclist conflicts with automobiles and help maintain traffic flow.

Design Objectives:

- Reduce the potential for pedestrian and vehicular conflicts
- Provide better through traffic flow
- Improve vehicular/pedestrian/bicycle safety by reducing entrances onto major roads

Discouraged: Typical auto-oriented street with multiple driveways interrupting the sidewalk and flow of traffic

Encouraged: On-street parking and rear or shared lots help create an uninterrupted sidewalk and reduce modal conflicts



Discouraged: parking in the front of the building creates a greater distance between the sidewalk and the building entrance, discouraging pedestrian activity.

Additionally, multiple entrances to parking disrupt the flow of pedestrian traffic

Encouraged: Shared parking in the rear limits the number of access points and reduces potential conflicts between travel modes.

2.1.4 *Parking Location & General Design*

Parking can be a major factor limiting the walkability of a place. Providing an overabundance of free parking encourages driving and, if located in front of buildings, may serve as a barrier between pedestrians and their destinations.

Generally off-street parking should be located behind or beside buildings. Building facades that open directly onto the sidewalk without parking in front are more inviting to pedestrians.

PARKING TYPES:

Structured Parking

Structured parking or parking garages are most appropriate in high-density areas. Garages reduce the total amount of paved area and can fit well into an urban environment, maintaining scale and facade articulation. Garages should be located within block interiors wrapped by perimeter liner buildings or as stand alone structures that can easily integrate first floor retail. The proportion, rhythm and massing of a garage should reflect that of surrounding buildings.

Surface Parking

Parking should be located to the rear of the building wherever possible. Any off-street parking adjacent to the public right-of-way should be screened with landscaping or fencing in such a way that it does not create a barrier to adjacent sites or blocks. (*For more information on screening, see section 2.1.6.6 "Screening, Fencing, Walls, and Railings."*) Long aisles of parking bays should be broken up with landscaped islands. Pedestrian access should be designed around the perimeter of on-site parking and between parking aisles.

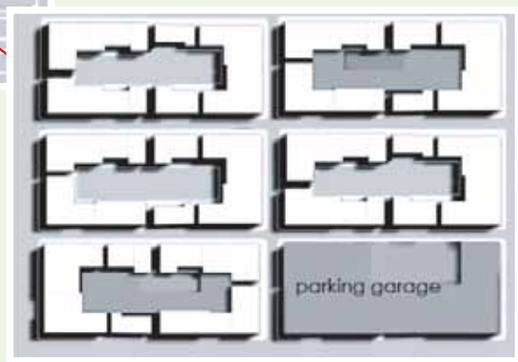
On-street parking

On-street parking occurs within the right-of-way and is an important factor contributing to streetscape activity and business vitality. *On-street parking is discussed in further detail in section 2.3.1.3 Roadway Zone."*

Design Objectives:

- Parking should not impede pedestrian access to building entryways
- On-street parking and well-integrated structured parking can contribute to an active pedestrian streetscape
- Shared parking lots and access should be encouraged

Discouraged: auto-oriented, parking dominated development



Encouraged: shared or public parking integrated into a mixed use, walkable development pattern

Encouraged: Structured parking with ground floor retail is compatible with adjacent building architecture and materials

Encouraged: shared interior parking

2.1.5 Transitions

Scale Transitions

Compatible scale should be considered in terms of lot size, building dimensions, building placement, and orientation. Where practicable, similar sized lots or buildings should face each other across local streets, but not to the detriment of achieving an appropriate mix of uses at the edges of catalyst areas or neighborhoods. Transitions of development scale are best accomplished across rear lot lines, alleys, open space or collector and arterial streets. New development should relate to other existing or proposed development on adjoining properties to maximize useful interconnections and shared efficiencies.

View Transitions

Important views and vistas, both natural and man-made, should be used as opportunities to create edges or to align public spaces and corridors to enhance the quality of the public realm experience.

Buffering and Screening for Transitions

Where incompatible scale or activities cannot be mitigated through adequate transition, buffering and screening should be required. Buffering and screening strategies should consider building and parking placement, building orientation, walls, fences, and landscaping.

Design Objectives:

- Provide for compatible transitions of design to adjacent neighborhoods
- Ensure that building scale, massing and design are compatible with surrounding areas.

Mixed use buildings transition between commercial and residential uses.

Live/work buildings can also provide a good transition between heavy retail uses such as a grocery store and a residential neighborhood.

Open spaces may provide transitions between certain uses located on adjacent or neighboring blocks.

2.1.6 *Landscaping & Hardscaping*

Design Objectives

- Complement and soften buddings and hardscape elements.
- Visually frame buildings and define entrances.
- Differentiate neighborhood identities and buffer parking and service areas.
- Improve site environmental conditions, reduce urban heat island effects and improve site permeability.

2.1.6.1 General Landscape Guidelines

Landscape Plans

Developments should incorporate landscape plans that indicate the location, size and placement of plat materials, as well as irrigation when appropriate. Plans should include a hierarchy of plantings in terms of size and types of plant material to mark the transition between the horizontal ground plane at the sidewalk or parking area and the vertical facades of buildings.

Sustainability

Landscape plans should endeavor to utilize sustainable principles of design that use less water than traditional designs. Strategies to reduce water consumption include specification of low-water need plant materials, mulches or ground covers that limit evaporation, use of drip irrigation or other systems that more effectively deliver water to plants, use of reclaimed water, and rain water harvesting.

Diversity

A diverse selection of plants, including species that are already existing in the area, should be used. Mixing different sizes and types of plantings helps create a more resilient and disease-resistant plant community. Plant materials should be selected that are appropriate for the urban environment and specific micro-environment (shade, wind, space limitation, etc…). Plant materials that are drought tolerant, suited to the climate and/or native to the region are encouraged. No invasive species should be planted.

Street Trees

Tree species which naturally produce large surface roots that may damage pavements and trees with dense canopies that block building entrances and store fronts should be avoided. Also, trees that can litter the pavement with excessive fruit, branches and large leaves should be avoided. Tree species that have thorns are generally not recommended in pedestrian areas.

Landscaping can be used to frame ground floor architectural elements and to soften other hardscaping materials

A variety of landscaping species and plant types of varying heights and densities are recommended for visual interest and for the overall health and resilience of plantings.

Street Trees, continued

To minimize conflicts of lower tree limbs with pedestrian and roadway areas, bottom tree branches should have at least 7 feet clearance for pedestrian walkways, 8 feet clearance for bicycle traffic, and as much as 14 feet clearance to avoid interference with buses.

Street trees should be planted in a uniform pattern and spaced equally to create a relatively continuous canopy upon maturity. Street trees should be planted at an average spacing of 40 feet on center (the approximate length of two on-street parking spaces). Exact spacing should be modified on a block-by-block basis and trees can be clustered to minimize obstruction of views and building entrances and to avoid conflicts with utilities and street furnishings.

Trees in paved areas should be provided with deep root barriers, automatic irrigation, and expandable metal tree grates. Tree grates should be regularly maintained and expansion rings should be removed as the tree trunk grows.

Landscape Arrangement

Landscaping should be arranged and maintained in a way that does not block signs or street lights. Sight lines and clear zones should be maintained at all intersections. Landscaping and hardscaping elements should be coordinated with adjacent streetscape elements to provide a unified and consistent look.

Where there is on-street parking, tree locations should be coordinated with parking stalls to minimize conflicts with vehicle doors.

Grass species with low water needs should be utilized in low pedestrian traffic areas.

Street trees should be planted in a uniform pattern and spaced to create a relatively continuous canopy upon maturity.

Street plantings should be selected and maintained so that branches do not hide signs or block street lights.

2.1.6.2 Plant Materials

Plant materials should be selected that are appropriate for the regional climate, reflective of historic patterns and elements, and provide seasonal interest.

All plant materials should be free of any defects, of normal health, height, leaf density and spread appropriate to the species as published in the latest edition of American Standards for Nursery Stock.

Plant materials with similar water and light needs should be grouped together.

Street trees should be deciduous and have a minimum 2 ½" caliper. Coniferous trees should not be used as street trees.

Plant materials should be selected that are appropriate for the regional climate, reflective of historic patterns and elements, and provide seasonal interest.

2.1.6.3 Plaza Landscaping

All plazas should be landscaped with a combination of plants and hardscape materials to provide shade and area for amenities such as fountains and art that create focal points for users.

Plazas should be made comfortable by using architectural and landscape elements to create a sense of place, enclosure and security. Plazas should be oriented to take advantage of views and sunlight. Plazas should visually and physically connect to the adjacent streetscape.

Plaza landscaping should contribute to a comfortable environment for pedestrians, while complementing the design of hardscaping and other architectural elements along and within the site.

2.1.6.4 Parking Area Landscaping

General

Parking area landscaping should enhance the aesthetic appearance of surface parking lots, screen them from view from public roads, and provide safe and attractive pathways through parking lots for pedestrian traffic.

Large surface parking areas should be broken up into smaller increments or pods with interior landscaping (e.g. landscaped islands or medians) or with pedestrian connections. Landscaping within a parking lot should be evenly distributed.

Location of Plantings

A perimeter planting strip and/or a garden wall should be provided between the parking area perimeter boundary and an abutting public street.

Berms should not be used as a method of parking lot screening along walkable streets.

Landscaping and trees should be located to achieve maximum shading of parked vehicles.

Accent trees and landscaping may be provided on both sides of all parking structure entrance/exit drives as a wayfinding measure.

Parking area landscaping should be used to enhance the aesthetic appearance and provide screening within surface parking lots.

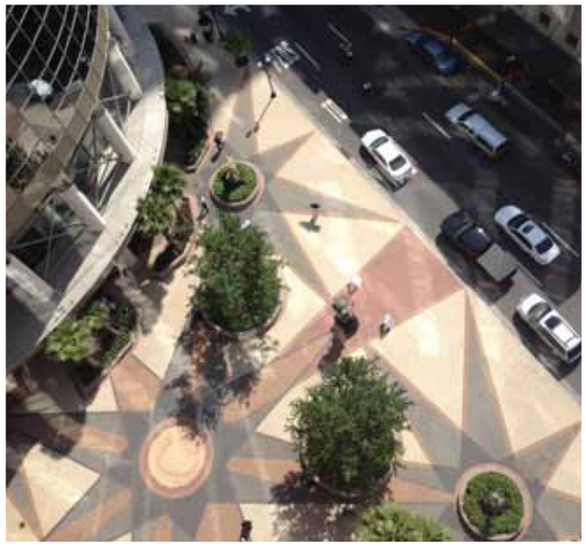
2.1.6.5 Hardscape

Decorative paving should be used to identify special areas of the streetscape such as intersections, pedestrian building entrances, crosswalks, and plazas and help differentiate functional zones on a sidewalk or street.

Special pavement surfaces used in private realm areas should be coordinated with pavement surfaces in adjacent public realm areas where they are both visible from the public right-of-way.

Special pavement surfaces should be appropriate for heavy urban traffic and meet the requirements set forth within the Americans with Disabilities Act (ADA).

The use of permeable pavement systems is encouraged.



Pavement materials with colorful patterns and a variety of materials can be used to highlight important public spaces.

2.1.6.6 Screening, Fencing, Walls, and Railings

The design and materials for walls and fences should be coordinated with the design and materials of nearby and adjacent buildings in terms of color, quality, scale, and detail. They should not necessarily be identical, but should be high quality, decorative rather than utilitarian, and be substantial in appearance commensurate with the urban environment.

Walls and fences exceeding that are located adjoining a public street should provide variety and articulation at intervals not exceeding 100 feet through the following methods: changes in plane horizontally on the ground plan; expression of structure, such as a post, column or pilaster; variation of material; and/or variation of form, such as from solid to open. The design of walls and fences should avoid long, unarticulated areas facing sidewalks.

2.1.6.7 Service Area Buffering

Service and utility areas should be concealed from the public right-of-way by employing means such as enclosing walls, fences, screening and/or landscaping of sufficient height, structure and density for year round cover to provide an opaque screen from the public view.

Fencing and walls should be comprised of high quality, durable materials that are complementary to the design character and intention of an area.

2.1.7 *Exterior Lighting*

Design Objectives:

- Provide a cohesive appearance to the Neck and complement the historic character of adjacent areas.
- Enhance safety and encourage safe pedestrian and vehicular access and activity at night.
- Promote easier wayfinding and orientation in neighborhoods and activity areas in the Neck at night.

Lighting can enliven a nighttime space providing aesthetic appeal and community identity, and enhancing the sense of safety for pedestrians.

2.1.7.1 General Lighting Guidelines

Exterior lighting for pedestrian areas should be provided at all points of decision such as intersections, crossings, steps, and arrival points. It should illuminate pedestrian pathways, drives, buildings, service areas, signage, landscaping and other areas where appropriate.

Building, site and parking lot lighting fixtures should be coordinated and compatible with the architecture of adjacent buildings, landscape, and streetscape. Simpler fixture styles are recommended to be compatible with different architectural styles.

The placement of lighting fixtures should be coordinated with the landscaping plans to avoid conflicts in layout.

All lighting should be aimed, located, designed, fitted and maintained so as not to present a hazard to drivers or pedestrians by impairing their ability to safely traverse and so as not to create a nuisance through light trespass.

Exterior lighting should be provided at intersections to enhance the safety of pedestrian crossings at night.

2.1.7.2 Site and Building Lighting

Street Lighting

Street lights are used for overall illumination of roadways and sidewalks and should enhance security of the street while minimizing negative impacts on private properties. Placement of fixtures should provide a coordinated and organized appearance that contributes to the overall continuity of areas.

Generally, all street lights should be located so as to provide safe clearance for pedestrians and adjacent vehicles. The setback for each pole from the curb edge should be consistent to create visual alignment. Poles should be intentionally placed in relation to on-street parking spaces to prevent conflicts with vehicle doors. Street lights should be spaced consistently based on the width of the street and the length of the given block. Mature tree canopies should be considered when spacing street lights, which should be centered between trees whenever feasible. Spacing should strive to achieve a consistent look.

Street lights can be designed to enhance and support the character of a district.

Building Lighting

Building lighting design should highlight primary building entrances, light specific usable exterior spaces such as balconies or terraces, complement adjacent streetscapes, and accentuate adjacent plazas and open spaces. Building lighting should be integrated into the architecture through concealment or through materials, detailing, form, and spacing that complements the building.

Building lighting fixtures, whether exposed or concealed, shall not have power sources, conduit runs, junction boxes, or other unfinished elements exposed to view. Architectural accent lighting should be limited to indirect lighting only.

Building lighting should be complimentary to the architectural style of the building and should highlight primary building entrances.

Building Sign Lighting

Illuminated signs should be oriented to the public right-of-way and should avoid facing residential uses and publicly accessible open spaces or plazas whenever practical. They should have tops to prevent light from escaping upward.

Pulsating, flashing, running or rotating lights are generally not compatible with pedestrian-friendly areas and activity center. Power sources, conduit runs, junction boxes, or other unfinished elements should be concealed to minimize their visual impact.

Projecting lighting fixtures used for illuminating building signage should be simple fixtures that are angled down to prevent overall glare.

2.1.7.3 Open Space Lighting

Open space lighting should create a comfortable and safe nighttime ambience in publicly accessible open spaces and plaza areas and provide continuity of light levels with adjacent streetscapes. It should provide the lowest levels necessary to achieve safety and efficient wayfinding. Appropriate elements of plazas such as gazebos, art, and fountains should be highlighted to aid in orientation, provide visual interest and become an inviting presence at night.

Pedestrian lighting may be used in plazas to illuminate primary walking pathways or accented paved areas. Illumination sources that are low to the ground such as bollards and walkway lights are encouraged.

High power and general illumination of entire plazas and open spaces from remotely mounted fixtures is discouraged.

Open spaces should be well-lit to create a comfortable and safe environment for nighttime activity.

2.1.7.4 Parking Area and Drive Lighting

Parking areas should include adequate lighting levels to create a safe and secure environment. Fixtures should be installed at illumination levels to provide safety for vehicles and pedestrians, while minimizing glare or spillage onto adjacent properties. The entrances and exits to parking areas should be well lit.

Poles should be placed to provide a unified, organized appearance throughout the parking area and provide reasonably even and uniform light distribution without hot spots or dark spots.

Parking area lighting should be evenly distributed throughout the parking area to provide the maximum level of safety for vehicles and pedestrians, yet it should not spill out or create glare onto adjacent properties.

2.1.7.5 Accent Lighting

Accent lighting of buildings, building entries, landscaping, plazas and other special features is encouraged.

Accent lighting should highlight appropriate design elements. It should be ground mounted or mounted on buildings and light levels should be low or background in appearance. Flood lighting is prohibited.

Landscape lighting should be subtle and should be carefully shielded to avoid view of the source. Uplighting of landscaping should be limited to a select few elements and should be designed to avoid sky glow.

Accent lighting may be used to highlight significant architectural features of a building, enhancing its overall appearance at night.

2.1.8 *Signage*

The character of a community, neighborhood, or district can be reflected in the design of signage. For example, dispersed strip commercial uses are primarily accessed by car while compact mixed-use areas are easily transversed on foot.

Signs that are sensitive to nearby neighborhoods, respect the scale and proportion of buildings, and contribute to the ambiance of a place can help secure and maintain a healthy economic climate.

Design Objectives:

- The scale and design of signs should be based on the intended viewer and their speed of travel
- The design and placement of signs should be coordinated throughout a district; materials and colors should complement the character of existing buildings and their architectural elements.
- Avoid signs that compete for attention and thus lead to visual clutter.
- Signs coordinated and maintained across a district can contribute to a healthy economic climate.

2.1.8.1 District or Area Signage

District signage includes a variety of wayfinding or identification signage used to highlight important streets, districts, and precincts within a city.

Public signage can serve to announce arrival into a particular part of the city, district or special destination. This is particularly significant at intersections which can serve as gateways to a district or transitions between districts. Signs and their text should be scaled for legibility by both pedestrian & automobile traffic. Bracket type banners on pedestrian light poles and other district and wayfinding signs should be coordinated in both design and placement to present a unified identity for the district and its corridors.

Wayfinding, banners, historic markers and other public signs can help to mark important places, and define a consistent character of an area or district.

2.1.8.2 Site and Building Signage

Wall-Mounted Signs

Wall-mounted signs are most often placed at the ground floor level of buildings to be viewed both by pedestrians and slower moving vehicles. Because viewer movement is expected to be slower for wall mounted signs, signs may incorporate multiple colors and text types. Types of wall-mounted signs include: awnings, hung signs, storefront window signs, and signs fixed parallel or perpendicular to building facades.

For multiple businesses sharing one lot, the design of wall-mounted signs should be legible from across the parking lot and sometimes from the street. All signs should be aligned across the retail center and should be proportional in scale to the building facade.

Free-standing Signs

Free standing signs includes monument and pole signs. Pole signs range in style from highway scaled commercial signs to Main Street Style signs. Free standing signs are most often used to attract motorists and are often placed along the street in the amenity area or at commercial entrances.

When a primary entrance to a commercial use is through a parking lot, it is often necessary to place signs along the roadway to attract motorists. Shared monument or pole style signs that advertise all of the retail and commercial uses that the parking lot serves are often used. It is recommended that a consistent text size, color, and font be used for all businesses on the shared sign. Tall masts and multiple individual signs are discouraged.

Other design considerations for free-standing signs include the following:

- Sign height should not exceed that of the building
- Monument style bases should match or complement the primary building material it represents.
- Monument style bases can be well-integrated with the site by adding appropriate landscaping around the base.

Projecting wall-mounted sign

Wall-Mounted Canopy Sign

Wall signs among businesses are aligned and font size is consistent.

Main Street sign

Highway pole sign

Discouraged: Inconsistent form, fonts and colors. Scaled larger than the building and has incompatible building materials

Monument sign with landscaping

Multiple business monument sign with consistency of sign shapes and sizes, color, and scaled below building height

2.1.8.3 Signage Materials and Design

Based on the speed of the viewer, sign materials and design may vary from simple to more complex. Signs oriented towards higher speed vehicles should use simple colors and text so that they can be easily understood from a distance.

Pedestrian-oriented signs, or those viewed at slower speeds, may incorporate multiple colors, sign shapes, varying and smaller fonts, as well as images and other design elements. Sign materials and design should be proportional and compatible with the building architecture.

Signs with movable text or electronic messaging signs, signs with inflatable or movable parts, tall mast signage, overscaled awning signage, cabinets, and blinking signs are discouraged.

Discouraged: Arterial signs lack any sense of place and contribute to visual clutter

Encouraged: Street trees draw the driver's eyes below the canopy line and help to establish a unified character

Encouraged: Signs scaled and placed for visibility by slow-moving vehicles and pedestrians

2.2 BUILDING DESIGN

Background: Buildings collectively help to establish the local character and distinct identity of a place. Main Streets often contain some of the oldest and most cherished buildings. While building design is an expression of the tastes and desires of the property owner, a general compatibility and harmony of building designs within a neighborhood or district can also greatly contribute to aesthetic appeal, quality of life, and economic value of the area. In general, a localized and context-sensitive approach to building design is recommended fro the Neck and a suburban, "anywhere USA" type of deign that ignores its surrounding context is discouraged.

2.2.1 *Build-to-Lines and Setbacks*

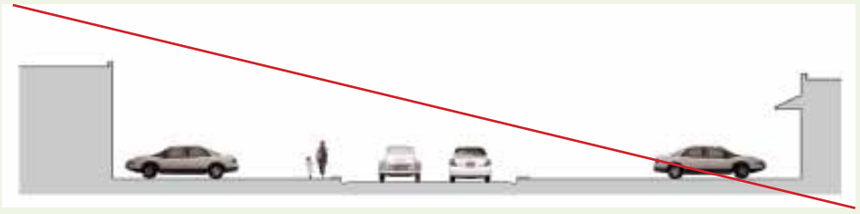
Building setbacks may be regulated to reinforce a desired street character. Minimal front setbacks are recommended to encourage pedestrian activity along the sidewalk. Building entries that border main streets and public thoroughfares foster vibrant, walkable streetscapes and allow for clear pedestrian access and circulation.

Wider setbacks may be used where necessary for outdoor dining, on-street marketplaces, courtyards, or plazas. In mixed-use or high-density residential areas, minimal side setbacks and/or use of party walls is helps reinforce pedestrian activity. In less intense areas, larger setbacks may be suitable, especially when residential uses are on the first floor. In all cases, it is recommended that buildings front on public roads and that parking areas be located behind the buildings.

Design Objectives:

- Provide direct, convenient access between the public sidewalk, parking lots, and buildings.
- Minimize distance pedestrians must travel to access buildings.

Encouraged: little to no setback with parking to rear of building



Discouraged: large setbacks with parking between sidewalk and building

2.2.2 Building Mass, Form and Scale

Mass - Massing describes the physical form and shape of a building or group of buildings. Massing should be compatible with surrounding buildings to create a streetscape that maintains a consistent scale while allowing unique articulation between buildings.

Building location and frontage should generally match that of adjacent structures to create a unified streetscape. However, breaking the established pattern of spacing and rhythm of a streetwall may be used to emphasize a circulation pathway, or a transition to a different use.

Facades over 50' long, measured horizontally, should incorporate elements to help break down the mass of the facade wall. These elements include: recesses and projections of the wall plane, entryways or storefront windows, changes in texture, material, or color, and arcades and balconies.

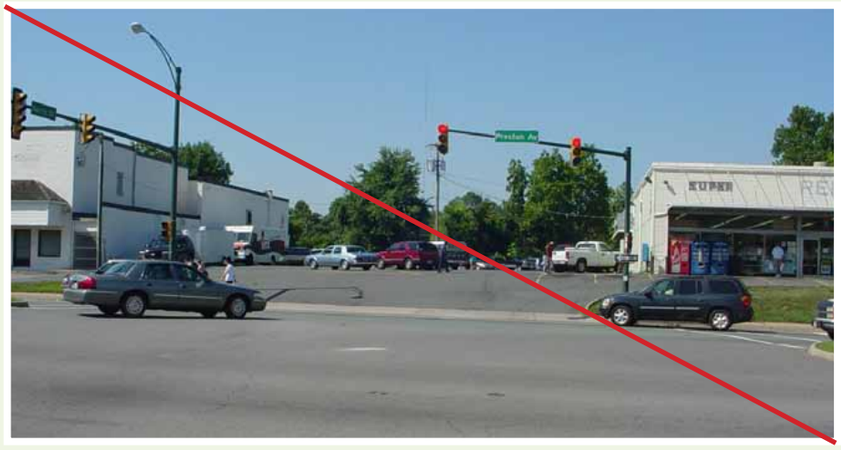
Form - The ground floor may be defined by architectural features such as arcades and awnings that help to enclose the pedestrian space and provide a comfortable sense of scale, or landscape materials such as street trees and foundation planting. Retail spaces should have a ground-floor entryway fronting the public thoroughfare and visible to pedestrians, and transparent storefront windows that integrate the interior space with street activity.

Scale - Variations in height, horizontal divisions, window treatments, and facade materials should be used to create facade articulation and break up the perceived mass of a building and to relate it to the scale of a pedestrian.

Design Objectives:

- Design buildings with a form and scale that enhance the pedestrian experience.
- Provide a consistent streetwall and building setback with breaks occurring to draw attention to certain building or streetscape elements.

Continuous street walls contribute to a pedestrian-friendly streetscape



Discouraged: Overly large breaks in the street wall create gaps in the pedestrian network

Continuous street wall with breaks occurring to accommodate recessed entryways and an arcade-covered area for outdoor seating.

2.2.3 Building Articulation and Composition

Building facades are the interface between the public street and the building interior. The placement and size of the facade elements is critical to the way a building is perceived - it's scale and character. In general, the larger the expanse of blank wall on a building, the larger the structure appears to be to the pedestrian on the street, thus limiting the desirability to walk along these blocks.

At the scale of an entire block, building widths, recesses, and storefronts should generally be uniformly spaced and scaled to create visual unity in the streetwall. At the scale of a building facade, rhythm should be established through the repetition of elements such as windows, columns, recesses and projections, color, materials, etc.

Building facades may be vertically articulated to identify a base, body, and a top. Upper stories may be slightly set back from the ground floor and treated with different materials and colors to reinforce the contrast with the base of the building. A single, unarticulated building mass should be avoided. The middle portion of a building should have evenly spaced bays of windows, reflecting either a residential or office use. The top of a building may be defined by roof form, eaves, and cornices.

Facade transparency encourages pedestrians to look in, which creates a visually interesting walk and helps maintain business vitality

Discouraged: large, unarticulated expanses of building are uninteresting and uninviting to pedestrian traffic

Varying heights, building materials, colors, window sizes and shapes, and entryways are effective ways to distinguish between buildings and/or ground level businesses. However, appropriate care should be taken to respect the character and design of adjacent buildings and maintain a harmonious streetscape.

2.2.4 *Building Character and Materials*

All primary buildings should be constructed or clad with materials that are durable, economically maintained, and of a quality that will retain their appearance over time. Variations in materials and colors are important for creating a vibrant and interesting streetscape.

Building Materials

Acceptable building materials generally should include clapboard siding, pre-cast concrete, stone, brick, or stucco. All sides of a building, visible from the public street, should have consistency in architectural detail and character.

Colors

Colors should be skillfully used to complement building architecture and contribute to the facade articulation along the streetscape. Entryways, openings, roof trim and other architectural details should be highlighted with a change in texture and color. Colors should be compatible with other buildings in the area. Color and texture for architectural finishes should be selected to provide visual unity.

Large windows next to the sidewalk draw interest from pedestrians and maintain a sense of security with 'eyes on the street

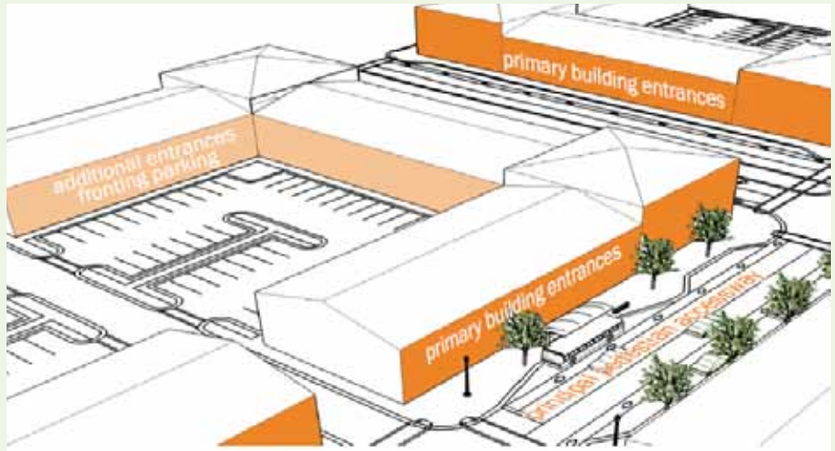
Overly uniform materials, colors and design create a monotonous streetscape

2.2.5 Building Entries

ENTRANCES:

Building entries that border main streets and public thoroughfares help to create vibrant, walkable streetscapes and provide clear pedestrian access and circulation.

The primary building entrance should be oriented toward the principal pedestrian accessway, typically the public sidewalk or an interior sidewalk where the majority of pedestrian traffic is expected to be coming from within the site. Additional entrances may be permitted that are oriented towards on-site parking.



Discouraged: large, unarticulated expanses of building are uninteresting and uninviting to pedestrian traffic

AWNINGS:

Awnings contribute to the overall image of a streetscape by highlighting significant features, providing visual continuity, and helping to provide protection from sunlight or inclement weather. Varying awning height and color, material, and design helps to break up the repetition of architectural elements.

Awnings, if provided, should project a minimum of 36" from the building. They should not extend across multiple storefronts, but should instead be broken into segments that reflect the door or window openings below them. Awning materials should be compatible with the building and surrounding building materials.

Design Objectives:

- Retail and commercial spaces should have a ground-floor entry fronting the public thoroughfare and visible to pedestrians.
- Entrances should incorporate transparent glass that integrate the interior space with exterior street activity.
- Entryway recesses, ground paving materials, door colors, lighting, signage and awnings should enhance the distinction between adjacent storefronts and create visual interest along the streetscape.

Awning enhances the storefront and distinguishes the business

Entry oriented towards the sidewalk with large glass windows invites consumer activity

Awnings should not be used as signs, however, simple lettering may be compatible.

A variety of awning colors and shapes enlivens the sidewalk

2.2.6 Building Accessories

Porches, stoops, balconies, and arcades provide a transitional space between the public and the private realm and between indoor and outdoor space.

Porches and Stoops:

Porches and stoops are typically covered structures extending outward or recessed into the building structure. Porches and stoops help to break down the mass of a building to a pedestrian scale, accentuate the point of entry, and provide shelter from rain and snow.

Balconies:

Balconies may be useful in creating a covered space along a sidewalk or residential entryway. Balconies should not protrude into the right of way and when located next to a public sidewalk, should provide sufficient vertical and horizontal clearance for pedestrian movement. Materials, colors, roof lines and other architectural elements should be compatible with the architecture of the building and design intent of the district.

Arcades:

Arcades are permanent roof-covered walkways that span the length of a building or group of buildings. Arcades provide shade and protection from weather elements while often contributing to the interest and vitality of a streetscape. Evenly spaced columns or openings create rhythm and articulation on the street.

Mixed-Use buildings may incorporate balconies with ground level arcades to serve both upper level residences and lower level businesses.

Arcades can provide a buffer between the sidewalk and the roadway, create a shaded walkway, and act as a unifying architectural element for ground floor businesses

2.3 Streets & Public Spaces

Background: Streets and public spaces provide a key foundation for establishing an overall design character in a district. These elements help to establish the character of a community and provide the framework for activity by the various transportation modes.

2.3.1 *Streets*

Successful street design provides an efficient and interconnected network for pedestrians, bicycles, and vehicles. Street function and appearance balanced with the design of the built environment, creates a pleasant and safe experience for travelers, residents, and business owners. An interconnected street network disperses vehicle traffic, allowing for narrower streets and a more comfortable pedestrian environment. In general, the design of public streets can help to define and enhance the overall design character of a district within a city and are a critical component of the general design recommendations for the Neck area.

For the purpose of these guidelines, streets are divided into three main context zones, and each context zone is further divided into "corridor Elements" such as sidewalks, travel lanes and parking areas that are the building blocks of a street cross section.

1. The Building Context Zone:

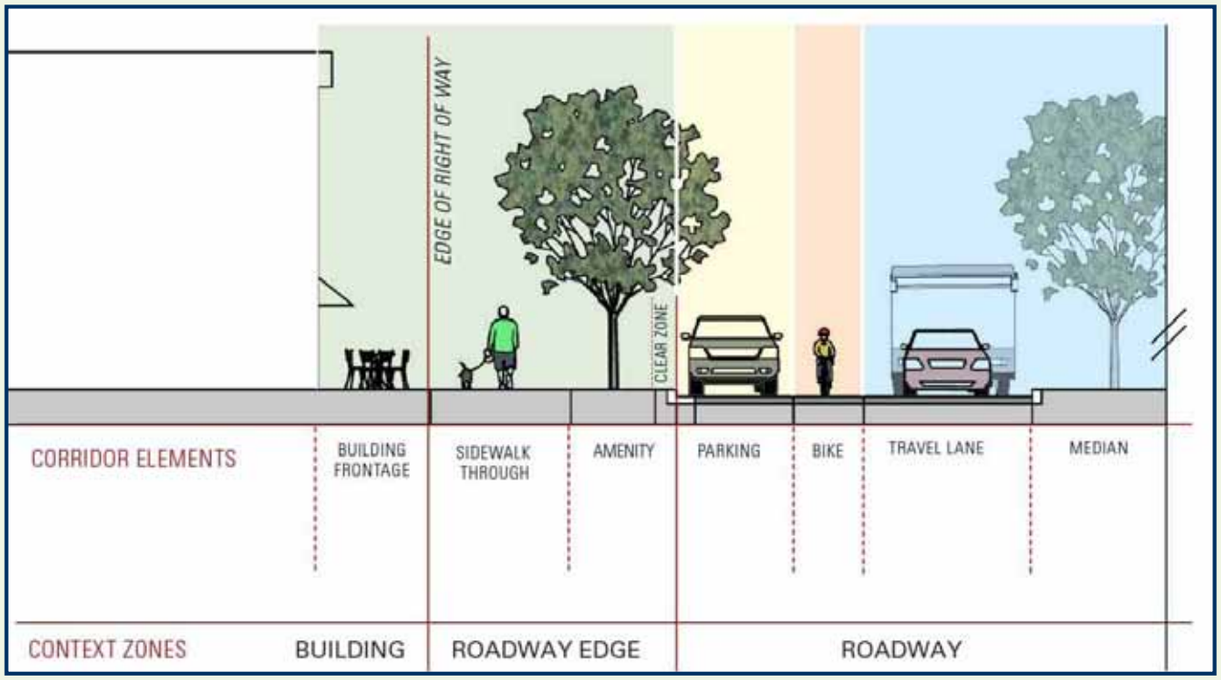
The Building Context Zone is the space directly adjacent to buildings, usually located within the building setback.

2. The Roadway Edge Zone:

The Roadway Edge Zone includes the space between the edge of the curb that is adjacent to the travelway and the Building Context zone. The Sidewalk Through and Amenity corridor elements containing the pedestrian walkway, signage, street trees, utility poles, and other features are located within the Roadway Edge Zone.

3. The Roadway Zone:

The Roadway Zone describes the paved travelway between the inside edges of curbs. Autos, buses, and bikes move within the Roadway Zone, and on-street parking may be present in this zone as well.

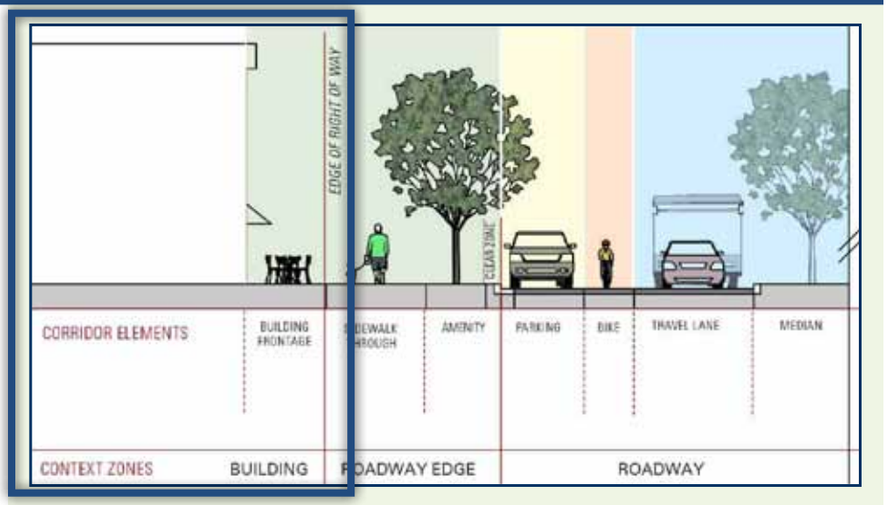


Context Zones for a prototypical cross-section will be used to describe street elements in this section of the guidelines

2.3.1.1 Building Context Zone:

The Building Context Zone is the space directly adjacent to buildings, usually located within the building setback. This area affects how buildings 'interact' with pedestrians, bicyclists, and motorists. When this zone is small, pedestrians interact with the buildings more easily. Buildings that are closer to the sidewalk are easier to enter. Windows close to the sidewalk invite pedestrians to look in. This zone can include space for street activities like café tables, sidewalk sales, and other extensions of building activity. These activities should be kept within the Building Context Zone and should not encroach upon the space for Sidewalk Through Element in the Roadway Edge Zone.

All of the corridor elements in the Building Context Zone are usually outside of the roadway right-of-way. The building owner would generally be responsible for maintenance for these elements.

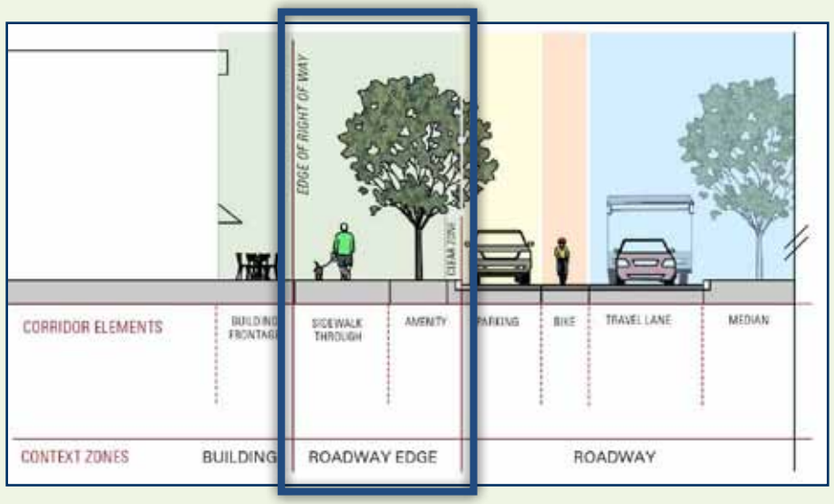


The Building Context Zone may include elements such as benches, landscaping, sandwich signs, cafe tables, stoops, or other elements related to the building.

Sometimes, the sidewalk material is continued into the Building Context Zone making the sidewalk appear wider, and on other occasions, this zone may be differentiated with different ground pavers, designating the zone as separate from the pedestrian walkway.

2.3.1.2 ROADWAY EDGE ZONE:

The Roadway Edge Zone includes the space between the edge of the curb (travel way) and the Building Context zone. This space is essential for encouraging pedestrian activity, reinforcing community character, and promoting safety and security. Within the Roadway Edge Zone, is the Amenity Element and the Sidewalk Through Elements. The Amenity Element provides a spatial buffer between vehicles and pedestrians, includes trees for shade and softening the urban environment, pedestrian-scaled lighting for security and aesthetics, signs and banner poles, and benches, drinking fountains, newspaper boxes, or other pedestrian-oriented amenities. The Sidewalk Through Element is a pedestrian walking zone that should remain obstacle-free to facilitate movement. Additional landscape amenities such as planters within the public realm might be encouraged within appropriate areas to increase the level of visual interest.



AMENITY ELEMENT:

Lighting,

Lighting is an important element for guiding pedestrians along intended walkways and highlighting destination points. In pedestrian oriented areas, lighting should be scaled to the pedestrian (not the automobile,) and oriented towards the sidewalk and the roadway.

Scale, intensity, and fixture design vary between areas of different densities and uses. Ornamental light posts and fixtures help to create an attractive streetscape and should be consistent with the architectural character of the immediate area. In addition to aesthetics and scale, lighting is an important element of public safety. Well lit streets and alleys help to promote a secure environment and encourage night time activity. Using light shields will help keep light focused downward and support "dark sky" standards. *For more information on lighting, please refer to section 2.1.7 "Lighting."*

Public Signs:

Public signage includes a variety of district identification signage and highlight important streets, districts, and precincts. These signs may be located within the amenity zone where banner signs, for example, may be attached to light poles.

For more information on public signs, please refer to section 2.1.8.1 "District or Area Signage."

Pedestrian-oriented lighting & signage

Auto-oriented lighting & signage

District Banner signs

Speed limit signs may be located in the Amenity area

Street Furniture:

Benches and public seating allow pedestrians to rest and congregate and can help to enliven or activate a public streetscape.

To create a cohesive urban environment, seating should be integrated with other urban design elements, such as planters or low walls. Street furniture that is consistent with the district theme and scale provides adequate space for 2-3 strangers to sit comfortably. Shade enhances the user's comfort and arm rests will discourage sleeping on benches.

Street furniture, when located appropriately, in the shade or at regular intervals, helps to broaden the sidewalk function from a place of movement into a place of rest and social interaction.

Street furniture with awkward access and hidden from view is discouraged

Bicycle Parking:

Bicycle amenities are critical to support bicycle activity. Bicycle parking - racks or lockers - should be considered at certain destinations, such as commercial, employment, and transit centers. Bicycle racks should be placed in plain sight near the entrance to the building or facility they are intended to serve, and should be securely anchored. As a general rule bike racks should be located at least as close to an entrance as the nearest parking space.

An ample amount of bicycle parking located close the building entrance encourages bicycle activity.

Street Trees/Landscaping:

Landscape design aesthetically complements and enhances the character of buildings, roads, and the pedestrian streetscape. Different landscape strategies depend on building scale, density, thoroughfare type, and land use.

Street trees help to integrate the roadway with the surrounding area and ease the transition between center and edge conditions. Street trees buffer the sidewalk from the roadway and break down the scale of the street. They provide shade, aesthetically enhance the streetscape, and can be used to highlight important gateways or districts.

For more details on landscaping, please refer to Section 2.1.6: "Landscaping and Hardscaping."

Street trees provide a buffer between the pedestrian Through Element and the roadway, and create a pleasant, shaded environment for walking or resting.

SIDEWALK THROUGH ELEMENT:

The Sidewalk Through Element is the space where pedestrians walk. It is one of a variety of design elements that together contribute to an active and vibrant streetscape. Promoting a walkable environment requires safe, accessible, and connected sidewalks that unite the pedestrian with a desired destination or activity.

The sidewalk through zone should be free of obstacles allowing for unobstructed pedestrian movement. Generally, through sidewalks should be included on both sides of the street at a minimum width of 5' in residential areas and 6' in mixed use areas. Amenity and Building Frontage zones are not essential to pedestrian movement, but are strongly encouraged to promote an pedestrian activity.

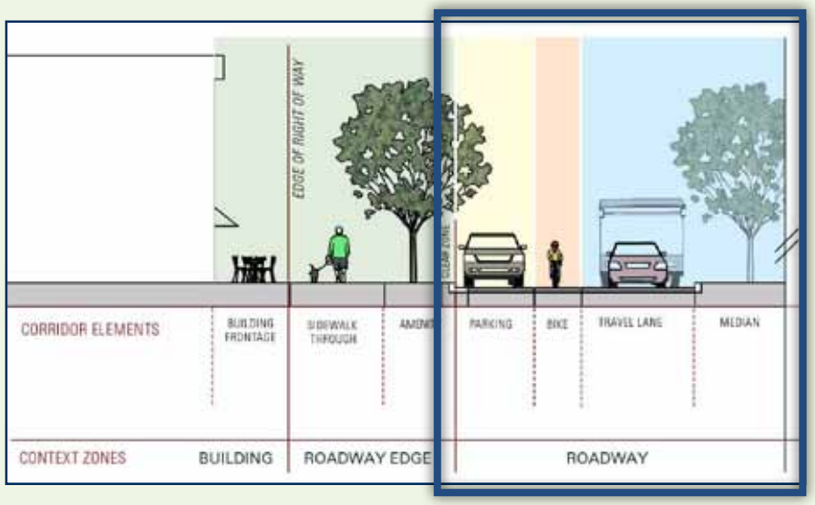
Through Sidewalks should maintain a minimum, obstacle-free zone of 5' in width.

Furniture and signs placed in the Sidewalk Through Element impede pedestrian movement

Clearly delineated and obstacle-free through zone in a residential area with a landscaped buffer and landscaped setbacks on either side are encouraged.

2.3.1.3 ROADWAY ZONE:

The Roadway Zone can be defined as the space between the edges of the curb (or edges of asphalt pavement). It includes the vehicle travel lanes, bus only lanes, bike lanes, on-street parking spaces, medians, and gutter pans.



Medians

Medians are raised barriers in the center portion of the street or roadway that can serve as a landing place for pedestrians, accommodate left-turn lanes, manage access, and provide an attractive space for landscaping or streetscaping treatment. Raised medians are most useful on high-volume or high-speed roads, and they should be designed to provide tactile cues for pedestrians with visual impairments. These cues indicate the border between the pedestrian refuge area and the motorized vehicle roadway.

Medians installed to serve as pedestrian refuges should ideally be 8' in width, with 6' being the recommended minimum. Median widths greater than 18' are used to accommodate left turn lanes as well as pedestrian refuge.

Design Objectives:

- Manage motor vehicle traffic and provide comfortable left- hand turning pockets with fewer or narrower lanes
- Provide a refuge for pedestrians crossing the street
- Provide space for street trees, signage and other landscaping improvements

Raised medians help to establish the character of the roadway, provide refuge for pedestrians, and preserve roadway capacity through access management. Images Source: PBIC Library, Dan Burden

Travel Lane

Most newer streets are designed with lanes that are 12' wide with a significant buffer area between the edge of pavement and adjacent buildings, encouraging high-speed traffic and discouraging cycling and pedestrian activity. This is an appropriate width along high speed regional arterials in rural and suburban areas, although widths may be reduced to 10-11' in urban contexts with slower travel speeds. On many local streets, 10-11' lanes are adequate, narrowing the street and providing additional right-of-way for on-street parking, cycling lanes, or wider sidewalks

Design Objectives:

- Balance the needs of pedestrians, bicyclists, and drivers
- Reduce crossing times, which can help optimize signal timing
- Balance vehicle speed with function and context
- Improve social interaction and neighborhood feel along streets

Travel lane widths should be designed to both accommodate expected traffic volumes and balance the needs of other travel modes.

Bike

Localities can choose from an extensive array of bicycle facilities and treatments to implement. Typical facilities for bicyclists can range from an on-street bicycle lane, shared lane markings, and wide outside curb lanes or shoulders to an off-road shared use path that may or may not run parallel to a roadway. Bicycle connections should include safe, direct routes between residential areas and popular destinations such as schools, parks, and business districts. Accessible bicycle facilities and bicycle parking areas are needed to make bicycling an appealing transportation alternative. Bicycle facilities and crossings should be clearly marked to ensure the safety of bicyclists.

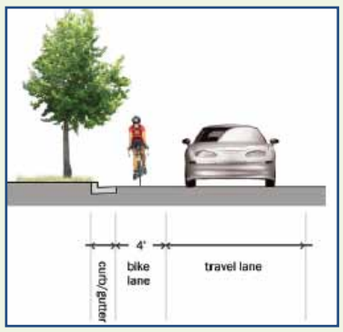
Typical striped bicycle lane makes riding an appealing transportation alternative

Striping, signing, and special pavement markings designate areas to be exclusively used by bicyclists and should be designed according to the AASHTO National Standards. As a general rule, on-street bike lanes should be a minimum of 4' in width or 5' in width when on-street parking is present. If there is no opportunity to include dedicated bike lanes, a wider outside shared lane may be used. In lower speed, lower volume conditions, a simple shared-lane marking can be used to alert drivers to share the travel lane with bicyclists. Multi-use trails that allow for bicycle access should be a minimum of 12' in width.

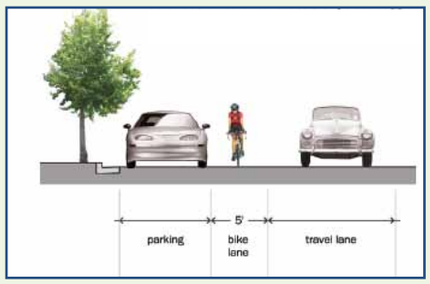
All reconstruction or restriping projects should consider the best means of accommodating bicyclists.

Design Objectives:

- Create travel facilities for bicyclists within or along the corridor
- Maximize bicyclist safety in the design and placement of bicycle facilities



Bicycle Lane without on-street parking



Bicycle Lane with on-street parking

Parking (on-street)

On-street parking occurs within the right-of-way, contributing to the street environment, and helping to buffer the sidewalk from vehicular traffic. Evenly spaced along the street edge, on-street parking helps to maintain the visual consistency and appeal of downtown areas. On-street parking should be set back from intersections to maintain clear vehicle sight lines. It can act as a visual cue that tells motorists they are in a more urbanized, lower-speed area. Local businesses benefit from on-street parking to attract customers and promote a vibrant street corridor.

Design Objectives:

- Enhance safety of all roadway users, particularly pedestrians, by providing a buffer between pedestrian and vehicular traffic
- Reduce on-site parking requirements to encourage compact development, active streetscapes and good urban form

Parked cars serve as a buffer between moving vehicles and pedestrians

Crosswalks

Ensuring that people can cross streets safely and conveniently to access destinations is essential to creating an effective transportation network. Crosswalks provide higher visibility to pedestrians at logical crossing points.

Basic crosswalks consist of reflective white striping. Crosswalks with higher visibility, traffic calming measures (raised crosswalks), or those that are more aesthetically pleasing (colored concrete or brick crossings) are more appropriate in commercial areas or locations with high pedestrian volumes. Care should be used so that the surface does not impede wheelchair access or provide a hazard for the visually impaired or elderly. Crosswalk lighting should be provided at least to the level of general street illumination, although higher luminance should be used at key pedestrian crossings. Countdown pedestrian signals also facilitate pedestrian movement at intersections with heavy traffic volumes or signalized mid-block crossings.

Design Objectives:

- Provide higher visibility and greater safety to pedestrians crossing the street
- Facilitate pedestrian circulation by providing seamless connections between destinations

Crosswalks highlighted with colored pavers are useful in special districts or areas with high volumes of pedestrian activity

Crosswalks can be highlighted with a change in paving material appropriate signage

2.3.2 Open Space

Carefully planned open space is necessary for the richness of mixed-use centers and the vitality of the public realm. Open space is a broad classification for public spaces, ranging from community recreational areas to civic squares. The scale, enclosure, and density of surrounding conditions determine the appropriate type of open space, such as formal/informal, active/passive, or open/contained. Formal civic spaces should be located in the center area, serving the area of highest intensity. Recreational facilities, greenways, and neighborhood parks should be strategically placed to serve the mixed-use communities surrounding the core.

Many qualities contribute to the appeal of open spaces. Environmental and natural features should be integrated into open space planning. Wetlands, critical slopes, drainage swales, and vegetation should be conserved as open public space wherever possible. In urban settings, water retention systems can be rethought and formalized as landscape elements that punctuate design.

Canals, ponds, fountains, and other attractive civic spaces in the center, promote gathering, interaction, and comfort. Moveable seating, tables, and multi-functional elements, such as planters that are at seat height, allow people to congregate and personally define spaces. Shade trees, greens, and cooling fountains help create a comfortable setting.

<u>Types of Open Spaces:</u>

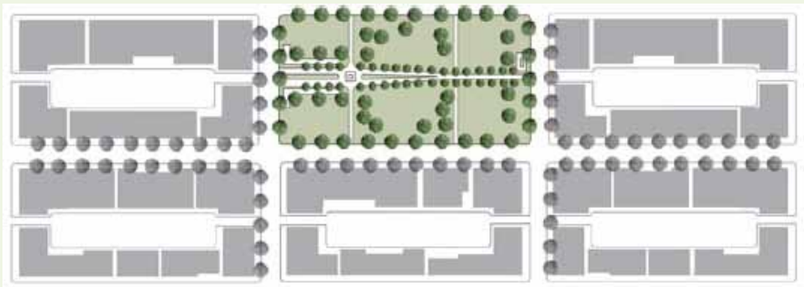
Plaza

The most formal public space, a plaza, is generally less than half the size of a block and often located at the intersection of important thoroughfares. It is devoted to civic uses and commercial activity and surrounded by buildings on all sides. Its landscape is composed primarily of durable pavement and formally planted trees. Features such as fountains, statues, and other vertical elements help mark the civic prominence of the plaza. These architectural features are most successful when planned in accordance with a strong visual axis, allowing the plaza to be read from a distance.

Urban Park

An urban park occupies at least a full downtown block. Its landscape consists of lawns, paved walks, and shade trees. Formal fountains and statues are also often incorporated. Landscape elements can help to organize the park into a series of smaller spaces that offer diverse qualities and uses. Urban parks may be surrounded by civic buildings and residential uses. In certain instances, civic buildings can accompany the park on a shared block. Urban parks may establish Farmers' Markets as a potential use to promote economic development activity in the area. Urban parks provide an excellent terminus for greenways and bicycle routes originating outside the core. In most cases, it is appropriate to frame the

Formal plaza is located at the end of a main street to mark its civic prominence

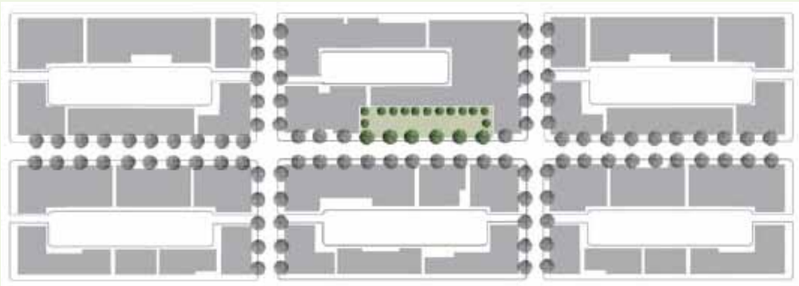


Urban parks are places of community activity located within a shared city block.

park within a visual axis.

Pocket Park

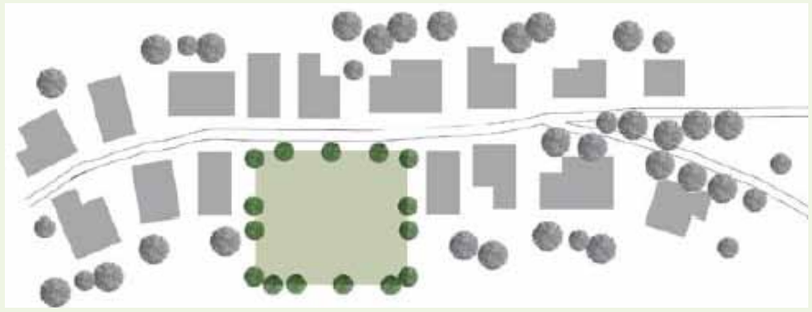
A pocket park is a small park that often occupies an undeveloped space between buildings. Typically no longer than 100' of frontage, pocket parks provide vegetation, shade, and open space within densely built areas. Due to their small scale, pocket parks predominantly serve immediately adjacent buildings. These small, informal breaks in the dense urban fabric provide alternatives to more prominent civic spaces such as urban parks and plazas.



Pocket parks provide breaks in the dense urban fabric and serve the buildings directly adjacent to the space.

Neighborhood Park

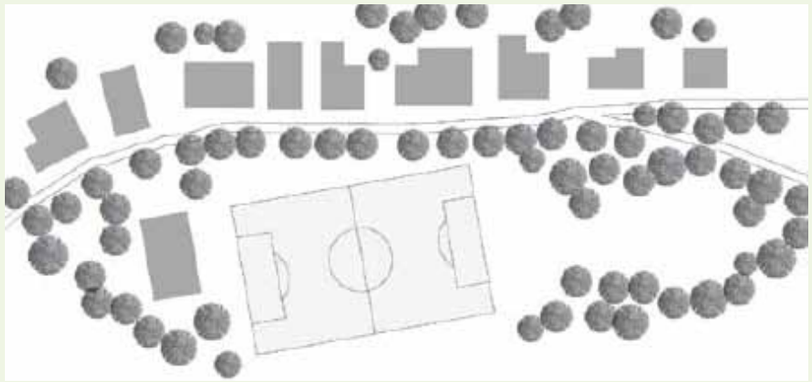
A neighborhood park is an open public space serving a residential area. The space may be used for civic gatherings and recreation. Neighborhood parks provide a safe open area free from moving traffic for children and neighborhood residents. Neighborhood parks may be bound by residences or small-scale institutional or civic buildings to form a common green. These parks are intended to serve the local area, unlike recreational parks, which serve a larger residential population.



Neighborhood parks are located within a residential neighborhood, serving local residents.

Recreational Park

Recreational parks are open public space, ranging from three to ten acres, reserved for civic gatherings and recreation. Often, recreational parks are designed around existing natural features. Its landscape consists primarily of grassy areas, paved or unpaved walks, and shade trees. Formal playing fields may be established to serve community needs. The park should be surrounded by a mix of residential, commercial, and civic buildings. Recreational parks may also serve nearby institutions. Parking needs and other necessary facilities must also be considered.



Recreational Parks include programmed elements such as ball fields or other planned activities for the regional community.

Passive Open Space

Passive open space provides scenic views and may accommodate greenway trails and walking paths. Golf courses may also be incorporated into passive open space. Recreational uses such as playing fields or courts are not typically included however. Passive open space may be retained to serve individual neighborhoods or the overall community.

Design Objectives:

- Conservation of natural features can provide areas for passive recreation, while preserving the environmental functions of wildlife habitat and stormwater management.
- Spatially defined areas or other types of common areas can provide similar environmental functions, as well as areas for more active recreation.
- Neighborhood parks, tot lots and playgrounds provide opportunities for active recreation within residential areas.

2.3.2 Civic Space

Civic spaces are an extension of the community. Civic places such as schools, open spaces, and public institutions (post offices, courthouses, federal office buildings, etc…) should be celebrated as opportunities for public interaction. Public art, statues, flag poles, temporary installations, banners and plazas are a few of the elements used to highlight important civic places or historic buildings.

Accessibility and safety

Civic spaces should be accessible to a variety of users. Streets, bikeways, walkways and transit stops should be connected to all civic places and ideally, to other transit networks. The edges of civic spaces should be defined by streets and building frontages and appropriate lighting should be incorporated within and around all civic spaces for evening visibility. Accessibility and lighting highlight the importance of civic spaces which together contribute to the unique identity of a place.

Design Objectives:

- Highlight civic spaces as unique elements of social and cultural identity within a community.
- Locate civic spaces for maximum visibility and accessibility and provide multi-modal connections to the site.
- Display local public art and sculpture within these spaces to recognize historically significant elements and build community pride.

Civic spaces are areas of cultural identity within a community and should be highlighted art, architectural, and landscape elements.

2.4 Implementation

These Design Guidelines provide a framework to ensure that the implementation of projects for the Master Plan – whether they deal with the preservation of existing neighborhoods, or the development of new ones – will be of a consistently high design quality and character.

2.4.1.1 Background

Mixson is a new development in the Northern Neck area that reflects community commitment to high design quality and character.

These Design Guidelines provide a framework to ensure that the implementation of projects for the Master Plan – whether they deal with the preservation of existing neighborhoods, or the development of new ones – will be of a consistently high design quality and character. Ultimately, these Guidelines are about preserving investments. Current and future residents and businesses in the Neck are all concerned with the investment they have made in the place and these Guidelines help ensure that what happens in the surrounding area will protect rather than harm those investments. The following section addresses how these Guidelines can be implemented in both private and public realms, through new project development, development review and general education and coordination among stakeholders in the Neck.

The Guidelines are not intended to supplant existing policies and practices regarding project planning, development and coordination, or roadway design. There are many opportunities, within adopted standards, to employ flexibility in design and to address issues that warrant tailored approaches, such as those described in these Guidelines. Ultimately, the Design Guidelines help to describe how the Master Plan policies can be applied and provide examples of their application to specific design issues for both public and private projects.

2.4.1.2 Private Sector Implementation

The strategies listed below are intended to encourage and facilitate the creation of high quality private development and investment in the Neck through the strategic use of these Design Guidelines with the private sector.

Outreach to Current Developers and Lenders.

Sharing these Guidelines with the development community as well as potential lenders can provide benefits in two ways. First, the Guidelines help create policy transparency by clearly laying out the expectations of local officials for the overall development character and quality that is desired for projects in the Neck. This helps developers and their lenders know what will be expected of them as they go into projects, and allows them to plan for these expectations ahead of time. Secondly, the Guidelines can help investors in a project to understand that there is a local commitment to quality building for the area so that future development can protect prior investments made in the area by ensuring a consistently high quality design character.

Educating Potential Future Developers:

The type of transit-friendly, mixed-use development shown in the Master Plan is still fairly new in many regions, and developers may be unfamiliar with these design concepts. It will likely be necessary to promote these concepts with local developers and lenders to educate them on the opportunities they represent and the differences with traditional suburban development practices. The illustrations and narrative in the Guidelines may be useful in telling the story of this new type of development opportunity.

Providing a Basis for Enhanced Development Incentives:

New projects in the catalyst areas may need assistance through incentives to be feasible, such as density/intensity bonuses, expedited plan review and approval, or reduced development fees. If these kinds of incentives are considered, it will be of paramount importance to ensure that projects benefitting from these incentives will clearly align with the Master Plan objectives. These Guidelines can be instrumental in ensuring this alignment. For example, developers may voluntarily agree to adhere to the Guidelines in exchange for specified development incentives. By using the Guidelines as the basis for granting incentives, there can be a common agreement between developer and locality on the expectations for future development quality.

Reducing Barriers to Development:

Higher density multifamily units are compatible with the design intensions presented in the Master Plan.

Existing zoning may contain requirements that unintentionally present barriers to the development of new housing, particularly higher density multifamily units that may not have been commonly seen before. Common examples include excessive minimum parking requirements that increase construction costs considerably, excessive setbacks, height requirements or restrictions on accessory uses that apply incompatible suburban-style development standards to an urban area. The Guidelines can be used to identify key design principles and then serve as a basis for doing a comprehensive audit of current development codes and standards that create unintentional barriers to development. By clearly describing the underlying design principles that are aligned with the overall Neck Master Plan, the Guidelines can help ensure that these principles are maintained as ordinances are changed to make them more development-friendly.

2.4.1.3 *Public Sector Implementation*

The strategies listed below include some of the ways that the public sector – whether at City, State or regional levels – can incorporate the design intent of these Guidelines into public projects, codes and policies.

Aiding with General Development Review:

The Design Guidelines may be used by City staff as an aid in reviewing development projects and for ensuring compatibility with the Master Plan. Should a conflict arise between local ordinances and codes and these Guidelines, local codes and ordinances will have the ultimate authority. However, many development projects involve some degree of negotiation with local authorities over their design character and design details. These Guidelines can be shared with developers or applicants at the pre-application stage so that the design intent of the localities in the Neck is clearly expressed up front.

Enhancing Local Ordinances and Codes:

Incorporating design issues and explanatory graphics into existing zoning codes will ensure that the public realm of redevelopment and new development will be of a high standard, easily understood, and leave no room for short-cuts.

As local codes and ordinances are modified and updated over time, they can begin to incorporate many of the design standards in these Guidelines. For example, separate codes such as landscape ordinances or parking codes can be developed that incorporate the principles contained in these Guidelines to support a higher quality built environment in the Neck. In addition, sections of existing codes that touch most on design issues, such as tree preservation, signage, lighting, or screening standards can be modified to incorporate elements from these Design Guidelines, including the explanatory graphics that can make these ordinance sections more user friendly.

Aiding with Development Review in the Catalyst Areas:

In addition to overall development review throughout the Neck, these Guidelines can be used to develop overlay districts in the Catalyst Areas to establish an additional level of development review that incorporates these Guidelines. This may include incorporating additional design standards into PUD or mixed use zoning designations aimed at fostering TOD development, as well as form-based codes, and additional illustration and clarity about what is expected of developers, providing them greater certainty when initiating projects.

Providing a Basis for New Form Based Codes

In order to implement the vision of the Master Plan for the Neck, it may be advantageous to consider comprehensive Form Based Codes for areas of the Neck Area Master Plan. The Neck Area Master Plan has completed and addressed many of the steps involved in the creation of a form-based code, such as the development of Catalyst Area master plans that could serve as the basis for Regulating Plans. The Guidelines can provide further detail to future Form Based Code design standards for specific elements.

Providing Guidance for New Transportation Projects:

New areas of development should strive to accommodate the multi-modal forms of transportation planned for in the Neck Area Master Plan including bicycles, pedestrians, automobiles and various forms of mass transit.

Key recommendations in the Master Plan deal with multimodal and walkability improvements in key districts. As new transportation projects are proposed, they can incorporate the design principles in these Guidelines as a framework to ensure that multimodal and bike/ped-friendly accommodations are being included in new projects. In particular, the section of these Guidelines dealing with "Streets and the Public Realm" gives guidance on how to design new or retrofitted roadway cross sections so that all travel modes are accommodated. With the Neck Master Plan oriented around walkable, transit-oriented catalyst areas, it will be important to make sure that areas designated for commercial development are conducive to non automobile modes of travel. The design standards in these Guidelines call for a comprehensive set of design approaches, including narrower streets, wider sidewalks, bike lanes, streetscaping, wayfinding signage, street lighting, and similar improvements that are part of a "complete streets" design approach.

Supporting Public/Private Improvement Projects:

The Guidelines can be used to support public/private initiatives in the Neck by providing a unifying framework for the quality and design character of improvements in those projects. For example, the Guidelines can support LAMC's Model Blocks program, which develops owner-occupied single-family homes on vacant and under utilized lots, by informing the overall site planning, building design and siting of improvements to ensure a harmonious design character of separate projects in a neighborhood.

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