

Ecological and Cultural Environs

Findings/Current Conditions

Johns Island is referred to as a coastal island. As such there are several important environmental factors that must be recognized when planning for various forms of human settlement and activity on the island. Failure to consider and respond to these factors can lead to degradation of the natural environment. Furthermore, failure to consider conditions such as terrain elevation and water flow channels can result in neighborhoods or structures being placed at risk to damage or destruction from severe storm events.

Johns Island has gone through several cycles of land use. After colonization, agriculture was the primary and major land use on the island. A considerable portion of the island was stripped of native vegetation and the landscape was modified for agricultural production. Following the decline of the major rice and cotton farming activities, a large portion of the island reverted to a natural succession process or was planted with pine for harvesting. Some commercial agriculture remained but to a smaller extent. In the later half of the 20th century, the areas within the study area became attractive for human settlement and now provide locations for multiple uses, including neighborhoods.

There are a considerable number of healthy and mature trees on the Island that must be identified and protected. The trees that form the canopies along the main roads and some of the secondary roads are significant. Our survey of the existing tree conditions along these roads is shown in Illustration 13.

Another important environmental factor on Johns Island involves wetlands. Wetlands are under the protection of federal regulations. On a large scale, the U.S. Fish and Wildlife Commission provide aerial survey data that identify the wetlands. A map of these identified wetland areas is included here as Illustration 14. At a site-specific scale, the wetlands are delineated by way of an on-site survey conducted by authorized professionals. Any and all proposals for construction or modification of land are accompanied with this site surveyed wetlands data with strict regulations control and protect these natural resources from damage.

As a note for understanding, aerial surveys are not as accurate as on-site survey data; the precision of the wetlands delineation shown on the U.S. Fish and Wildlife map is subject to the limits of the surveying method. It is only after on-site surveys are completed that the wetland areas can be accurately described.

A third important environmental factor involves terrain elevation. An elevation study (Illustration 15) indicates which areas within the study area that are low ground and high ground. The map indicates that most of the existing neighborhoods and roads are situated on land above fifteen feet in elevation. The land that lies on the northeast side of River Road (and therefore adjacent to the marsh and river) is predominantly at an elevation below fifteen feet.

Recommendations

Respond to and Respect the Environment. Environmental factors will be of primary importance when making planning decisions and development recommendations for Johns Island. Land at lower elevations will be recommended for agricultural uses, long-leaf pine forest, natural preserve or hyper-low density housing (one dwelling per 10 acres minimum). In particular, the low lying "fingers" which reach across the island will be considered unsuitable for neighborhood development. Most of this area lies outside of the Urban Growth Boundary, and it, therefore, reinforces the need to keep future development within the designated boundary limits.

The City should adopt a tailored River Protection Overlay District Ordinance along the Stono River in order to protect and preserve the environment along the river's length. The purposes of the River Protection District are to: preserve the scenic qualities of the Stono River and the public's ability to enjoy visual and recreational access to the river; ensure that residential and commercial development is well-designed and with the goal of preserving aesthetic, visual and scenic qualities of the district; promote the creation of natural buffer area or greenbelt along the length of the river, punctuated by public access areas and open spaces; protect life, public safety and property from flooding hazards; preserve natural flood storage areas; preserve environmentally sensitive areas, such as fisheries and wildlife habitat, along the river; and prevent water

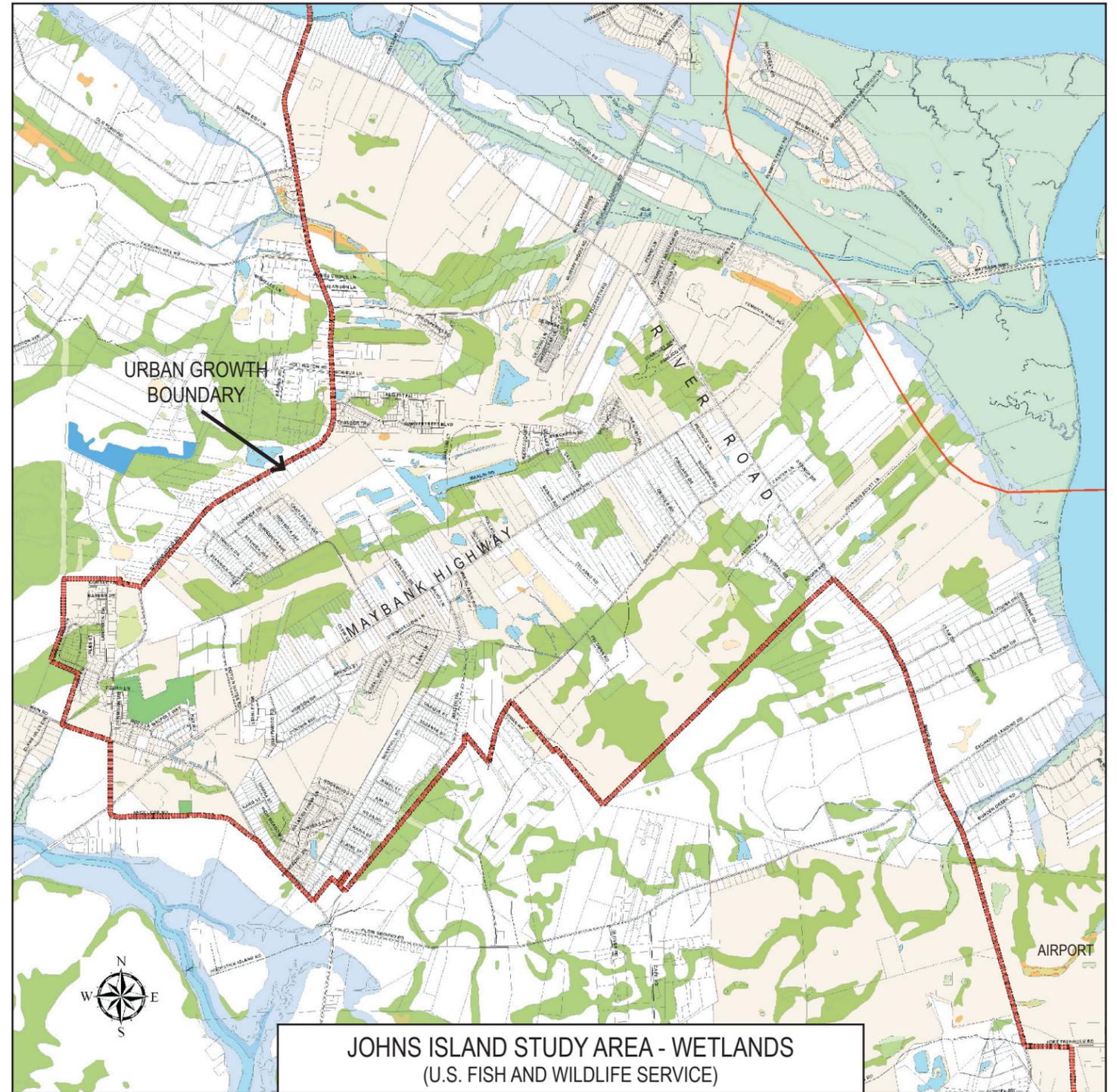
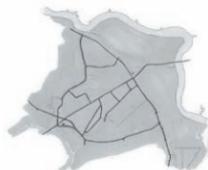


Illustration 28



JOHNS ISLAND COMMUNITY PLANNING WORKSHOP

The City of Charleston, Department of Planning, Preservation & Economic Innovation

Conducted: March 5th through 10th, 2007 Charleston, South Carolina

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pollution caused by erosion, sedimentation, nutrient or pesticide run-off, and poorly sited waste disposal facilities. The land that is situated north and east of River Road is predominantly at a low elevation. As such, it will be classified as appropriate for dwelling density of no more than one dwelling per two acres of land. In addition, to limit the negative effects of pavement it is recommended that new roads be unpaved. This type of road is more environmentally suitable and it also is more in keeping with the character of the island. Further, during the calibration of the proposed form-based code for the study area, those lots fronting waterways/marshes should maintain appropriate form in terms of lot layout in order to assist in the buffering process.

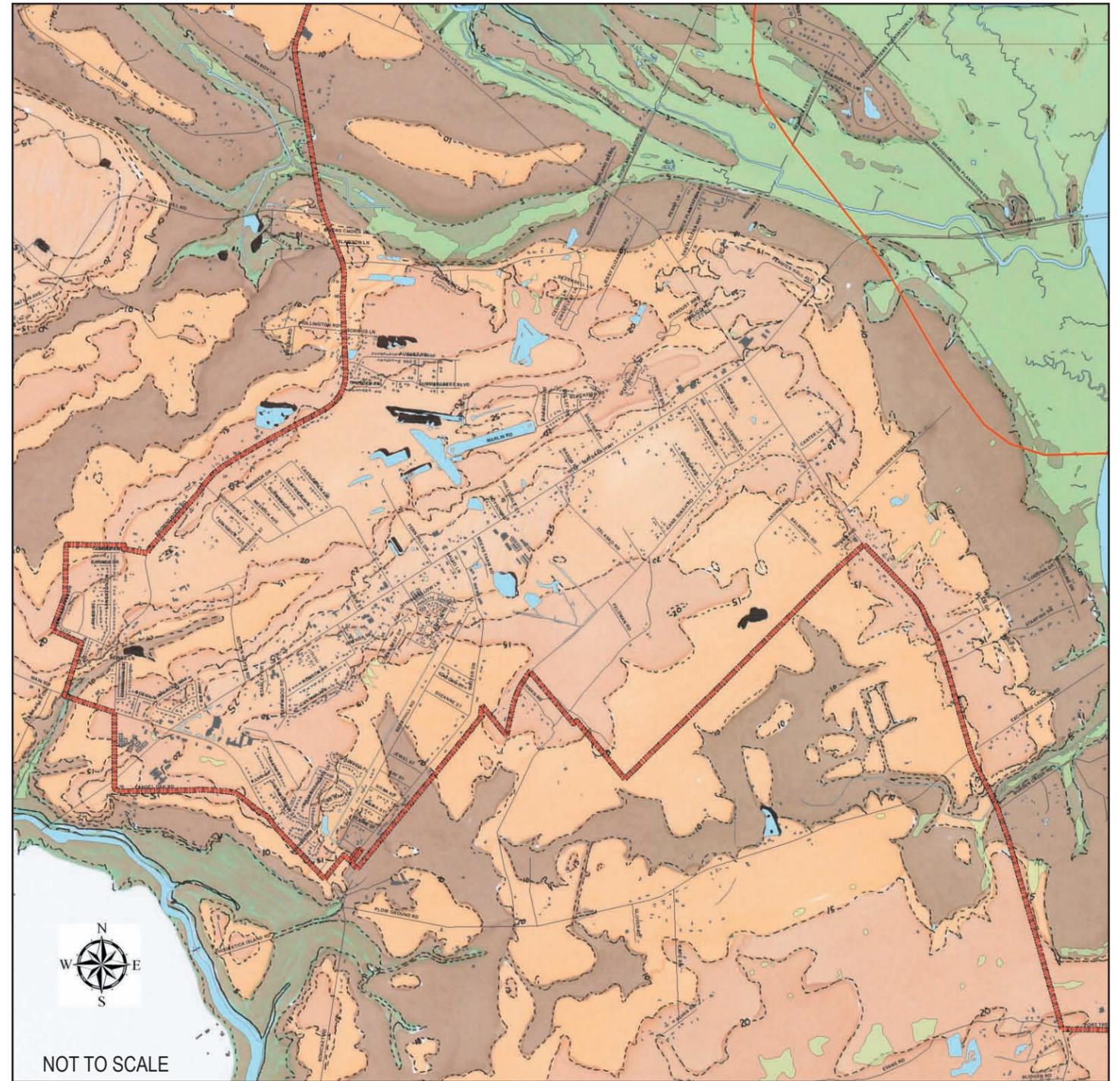


Invest in and Protect Tree Canopies. The existing and future tree canopy of Johns Island provides dappled sunlight and shade, which complements the preservation of place principle. During the workshop, an enormous amount of input solicited was centered on the protection of the tree canopies. While the protection of existing canopies is very important, it is equally important that the City/residents of Johns Island invest in tree preservation to provide for tree canopies that exist and span time for generations to come. In order for the preservation and extension of the tree canopies and wooded areas adjacent to the primary and secondary roads, it is recommended that various control schemes be evaluated for implementation. These schemes include an evaluation of buffers, the deployment of sentinel lots (deep lots adjacent to the roads that are placed into some form of environmental reserve but still permit a limited or select type of development), and/or the assignment of deep

setbacks. At last, the City should develop a replanting plan to replace deficient sections of tree canopies as well as dedicate resources to the pruning, fertilization, and maintenance of the existing historic allees of trees.

Adopt Best Management Practices (BMPs) for Stormwater Management. In order to minimize the adverse effects of storm water runoff, it is recommended that progressive and innovative on-site water management techniques are employed at all scales of development. The porous soils prevalent on the island allow for the use of natural drainage systems, rain gardens, bio-swales and other techniques. The City should adopt heightened best management practices (bmps) for stormwater management as the associated estuarine system of Johns Island is undoubtedly affected by stormwater runoff caused by human settlement. The goal should ultimately be to “decrease impervious!! Increase pervious!!” at all scales of development. At last, the City should adopt a freshwater wetland landscape buffer standard to ensure that freshwater wetlands are not impacted by upstream development and to contribute to the wildlife corridor network.

Promote/Require Native Vegetation. As a rule, the planting of native vegetation is strongly encouraged. Live oaks and water oaks thrive in this area. Longleaf pines planted on higher ground will begin the restoration process of what was the predominant forest profile on the island. The use of non-native ornamental trees and shrubs is to be discouraged. The use of invasive plants is to be avoided altogether. The SCDHEC-OCRM has produced a beneficial document entitled,



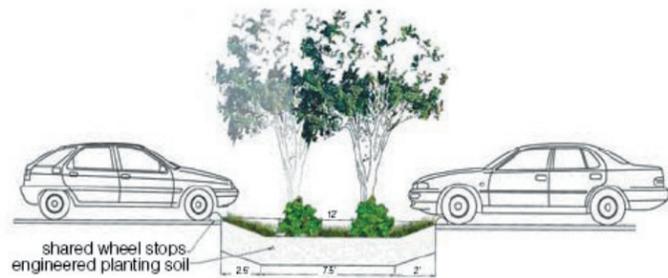
JOHNS ISLAND - ELEVATION STUDY

Illustration 29



Backyard Buffers for the South Carolina Lowcountry, (Appendix B), which serves as a helpful guide for residents in their efforts to retain or restore native plantings, which further protects the waterways, minimizes stormwater pollution, reduces erosion and heating of waterways, creates a sense of place and privacy, reduces flooding and flood damage, saves money and time, and preserves natural habitat.

Illustration 30: "Grēen" Parking Lot Applications



Introduce and Promote LEED Certification Principles. In conjunction with a set of architectural guidelines for use on the island, an effort should be made to introduce and encourage LEED principles. The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency,



JOHNS ISLAND - FORESTED WETLANDS



materials selection, and indoor environmental quality. The City should not require that all new structures on Johns Island be LEED Certified but should provide a user's guide to describe how these principles can be efficiently and cost-effectively incorporated into construction/building.

The City should Adopt Light Imprint for New Urbanism Techniques (Appendix C). This planning and design approach introduces tools that deal with stormwater run-off through natural drainage, conventional engineering devices, and innovative infiltration practices. These tools are applied at the level of the block, neighborhood and sector levels. A combination of these tools is selected and applied as appropriate for the form-based zone. This approach offers a range of solutions and techniques, which in combination provide an effective and sensitive overall stormwater management program.

Preserve the "Place" known as Johns Island. So often in conversations related to the preservation school of thought, the preservation of vertical form is the chief topic of discussion. During the Johns Island Plan Community Workshop, the preservation of place (an additional focus on horizontal form) concept interjected itself into the overall preservation discussion. Past studies of Johns Island have recommended updating the inventory of historic sites and structures. In addition, the inventory should identify other cultural resources such as African American history, the cultural landscape and unique settlements that contribute to overall unique character of Johns Island. Further, the City should revisit the recommendations of City and County Councils to protect the historic landmarks on Johns Island by adopting unified comprehensive historic landmark ordinances



that require:

- the temporary cessation of construction when archaeological sites are encountered;
- ensuring compatible design for renovations of historic structures and new construction; and
- the retention of natural vegetative buffers.

In terms of preservation of the "rural-esque" character of Johns Island, especially those parcels located within the City Limits but outside of the UGB, the City should conduct a thorough review of appropriate rural development standards for these properties as well as give consideration to the application of the appropriate transect zone (see form-based code section of this plan) in order to appropriately guide development.

Coordinate with Charleston County and the Gullah Geechie Corridor Program to provide opportunities to protect the Gullah Geechie cultural heritage and traditions on Johns Island.

Adopt & Implement the Preservation Plan recommendations for the study area. In 1974, the City of Charleston developed a groundbreaking Historic Preservation Plan to protect

its historic and architectural heritage. Thirtythree years later, with the majority of the existing Plan's recommendations implemented, there are new preservation issues for the City to analyze. Working in a partnership with Historic Charleston Foundation, the City has contracted with the firm of Page & Turnbull to lead in the creation of an updated Historic Preservation Plan. The Preservation Plan will include recommendations on preservation principles on Johns Island. These recommendations should be adopted and implemented for the study area.

Adopt & Implement the recommendations of the City of Charleston Green Committee. The City has recently formed a Green Committee. The Charleston Green Committee will provide leadership and practical solutions to ensure a prosperous community that will sustain healthy lives for our citizens and a healthy earth. The committee will work with City government, business groups, nonprofit organizations and other partners to protect and enhance Charleston's distinctive environmental quality and livability. The Charleston Green Committee will work to inspire individuals and organizations –both within and outside City government – to take actions that help make Charleston a model of healthy and ecologically sustainable living.



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The specific work of the Charleston Green Committee will include but is not limited to:

--creating a Local Action Plan on Climate Change that helps the City to implement policies to achieve the goals set forth in the U. S. Mayors Climate Protection Agreement as signed by Mayor Joseph P. Riley, Jr. in June 2005. This will include reducing global warming pollutants through programs that provide economic and quality of life benefits such as reduced energy bills, green space preservation, air quality improvements, reduced traffic congestion, improved transportation choices and economic development and job creation through energy conservation and new energy technologies.

--advising the City in the continued implementation of the City's Local Action Plan on Climate Change, including but not limited to:

--suggesting further measures and goals to encourage the City's energy independence and greenhouse gas reduction

--preparing recommendations regarding the adoption green building standards and certification programs

--monitoring progress on benchmarks in the City's Local Action Plan

--identifying grant opportunities and other possible funding streams to start and sustain programs

--collaborating with established City initiatives, such as the Bike/Pedestrian Committee and established advocacy organizations to promote an integrated community-wide approach to sustainability

--sponsoring and promote sustainability education and outreach programs and events, and develop linkages to schools, institutions and universities

--promoting regional cooperation in sustainability, energy conservation and environmental stewardship.

The Charleston Green Committee will be charged with developing civic policy recommendations related to four general categories of sustainability, as follows:

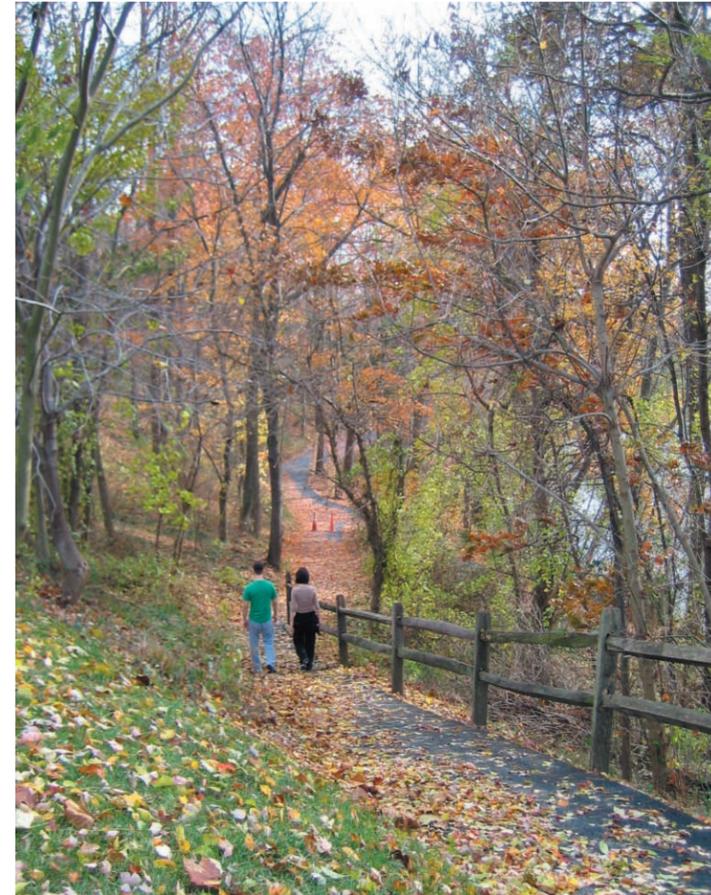
1. Energy Conservation and Efficiency / Renewable Energy
2. Greenhouse Gas Reductions / Alternative Fuels and Technologies
3. Green Building and Development Programs
4. Sustainability Leadership and Education Programs

Empower Natural Corridors. Large areas of open space contribute much more to environmental health if they are linked into continuous corridors. Such corridors should generally take one or two forms: wider corridors, which should be located only between neighborhoods since they interrupt urbanization; and narrower corridors, which may reach into green neighborhood centers in the form of parkways and boulevards. Narrow corridors should provide regular pedestrian crossings so as not to form wildlife barriers. Such continuous corridors would ideally be designated within a regional plan. (DPZ, Onondaga County Settlement Plan) A method by which to provide for these natural corridors would be via conservation easements, purchase/transfer of development rights—all of which should be evaluated and promoted. Further exploration should be given to the recommendation made to develop a long-term utility corridor plan in conjunction with Charleston Water System and the St. Johns Water Company that can be used to enhance natural spaces as wildlife corridors and/or as pedestrian or recreational corridors.



KENTLANDS, MARYLAND: A CONTINUOUS NATURAL CORRIDOR DIVIDES THE SITE INTO TWO SEPARATE NEIGHBORHOODS.

Illustration 31
Courtesy: Duany, Plater-Zyberk & Co.



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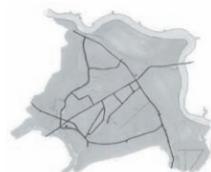
Light Imprint for the New Urbanism. Tom Low, Duany, Plater-Zyberk, & Co.

Onondaga County Settlement Plan, Duany, Plater-Zyberk, & Co.

SmartCode Version 8. Duany, Plater-Zyberk, & Co.

Town of Bluffton Old Town Master Plan & Code. Dover, Kohl & Partners.

"Where would you prefer to live?" Dover, Kohl, & Partners.



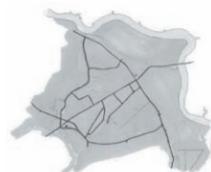
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Johns Island Community Planning Workshop Response Cards Summary					
I-526	5 Against 526	5 For 526			
Traffic	Need to attend to road needs to reduce congestion	Build one or more four lane roads across the Island	Island better served with several smaller roads.		
Preservation/environmental	Preserve trees	Contain runoff on property where originated	Preserve grave yards. Provide for life residents to continue to afford to live on the Island	Equestrian trail system along drainage ditch easement width of 10-12'	Bike paths on Maybank Map conservation easements
Infrastructure	Boat Ramp Green space within developments	Sidewalks on River Road	Need to know more about the effects of development on traffic	Hurricane shelters Reforest/restore ecology	Widen Maybank&Main Passing zones on Bohicket & Main
Zoning	Ensure affordable housing	Multi-story building to reduce sprawl	Reduce density to 4 or 5/acre	Traffic/development should be reviewed and discussed for the entire island Avoid apartments/condo	No big box stores River/Maybank commercial hubs
Johns Island Community Planning Workshop John's Island City Map Responses					
I-526	526 Will hurt the folly road interchange: Calhoun street just as much open your eyes!	Based on BCDCOG traffic counts 526 will increase traffic on Johns/James Island and WA	Improve existing roads 17 south passing lanes seem to working just fine	526 Must be completed. Long term will help Main Rd, Hwy 17, Maybank, Folly and everyone on Johns/James Islands.	
Preservation/environmental	Keep a rural feel to Maybank corridor. When its done is shouldn't be Rte 17	Consider wildlife			
Infrastructure	Enforce speed limit on Bohicket				



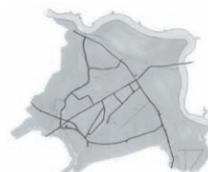
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Workshop Comments

Johns Island Planning Workshop Proposed I – 526 Map Responses						
I-526	12 No to I-526	9 Yes to I-526	Elevate over JI to protect wildlife with no on/off ramps	Connect to wider Maybank to protect River Road		
Traffic	Congestion on Maybank Do not construct exits onto Johns Island off 526	Build a road through center of Johns Island to Eden Vale	4 Lane Maybank West of the Stono			
Preservation/environmental	Preserve trees along Maybank	The UGB allows development along River Rd which will be environmentally damaging.	Preserve wetlands and all trees 24" in diameter			
Infrastructure	526 w/toll extension to Kiawah/Seabrook	Improve existing roads	Noise barriers for homes bordering 526	Schools to support density	Provide various types of recreational uses - bike paths/horse trails	
Zoning	Limit the density of new developments	Would be helpful to know the number of cars/houses resulting from new development				



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