Settlement Patterns

Existing Conditions
At the time of this workshop, the study area on Johns Island consisted of properties that are either within the City limits of the City of Charleston or under the jurisdiction of Charleston County. The planning, zoning and development regimes in place on Johns Island consist of conventional Euclidian, single-use zoning classifications and development ordinances consistent with 20th century practices. With regard to properties within the City, there are more than nineteen zoning classifications in use including SR-1, SR-2, SR-4, SR-6, SR-7, DR-1, DR-3, DR-6, DR-9, RR-1, CT, BP, LB, GB, C, GO, STR, LI, ND and PUD, along with several overlay zones.

During the workshop, it became clear that the current zoning of Johns Island is not sensitive to the context of Johns Island despite the fact that the current zoning/development standards adhere to previously recommended/adopted land use strategies for Johns Island. Just as other areas of the City of Charleston, Johns Island retains a sense of place that is unique to Johns Island. The directed settlement patterns by virtue of zoning and development standard ordinances should be sensitive to the context and simplified in order to promote preferred form rather than serve as a list of prohibitions. The “list of prohibitions” approach results in the end users trying to optimize their position without regard to the broader context.

A considerable proportion of the land within the Urban Growth Boundary has been developed or is occupied with wetlands, and as such, cannot be developed. The properties have been developed and are consistent with the zoning ordinances in place. A map delineates these properties from undeveloped properties and from properties that in their present state represent potential development opportunities (Illustration 3). The “potential development opportunity properties” are generally those that have one or only a few structures in place on a relatively large parcel. In many cases, these properties lie along Maybank Highway and are characterized by their relatively narrow and deep shape. It is recognized that the shape of these properties can be an obstacle to designing larger and more coherent neighborhoods or neighborhood centers.
Existing settlement patterns for the most part illustrate conventional suburban design, uniform distribution of density (repetitive lot types), lack of focus on architecture/public realm, "heavy on the land" infrastructure patterns that do not respect the ecology of Johns Island and zoning that focuses on use rather than form, and haphazard building placement.

The City of Charleston, in its Century V Plan, designates three areas along Maybank Highway for development as Gathering Places. These areas are intended for compact, mixed-use, walkable neighborhoods employing an interconnected and complete network of streets. Further, these areas should accommodate a mix of uses including civic uses (school, library, satellite government offices) that complement existing home-grown businesses rather than displace them during the evolution of Johns Island. Illustration 4 shows the Gathering Place locations from the Century V Plan.

Conventional 20th century commercial developments have been built at the intersections of Maybank and River Road and at Maybank and Main Road. These commercial properties typically feature retail shells placed behind large parking lots. Fairly large setback requirements in addition to buffer requirements along Maybank allow for strips of planted land to act as visual screens which partially hide the shopping centers from the sight of passing motorists. These development patterns do not afford the built environment the opportunity to address the street and therefore produce a substandard public realm. For example, the design of the Peninsula affords unique interface between the buildings, streets, and ultimately the users of the space thus creating a more pedestrian-friendly environment. This type of compact, user-friendly design should be considered for the study area. This type of traditional neighborhood development, unlike suburban sprawl, results in a healthier growth pattern for the study area and Johns Island as a whole.

Currently, there are approximately ten new neighborhoods (subdivisions) planned and approved for construction within the Urban Growth Boundary.

**Recommendations**

Adopt a tailored version of the Ahwahnee Principles for Resource-Efficient Communities as the Johns Island Covenant of Settlement Patterns

In 1991, at the instigation of Local Government Commission staff-member Peter Katz, author of the New Urbanism, the commission brought together a group of architects who have been leaders in developing new notions of land use planning: Andres Duany and Elizabeth Plater-Zyberk, Stefanos Polyzoides and Elizabeth Moule, Peter Calthorpe, and Michael Corbett. These innovators were asked to come to agreement about what it is that the new planning ideas - from neotraditional planning to sustainable design - have in common and from there, to develop a set of community principles. Essentially, the public input during the Johns Island Community Planning Effort reflected and/or echoed the thoughts of these principles. Thus, the City of Charleston should adopt a tailored version of these principles for the study area. All decisions involving settlement patterns should adhere to these principles upon adoption, and developers should demonstrate to the public how these principles have been reflected in the proposed settlement pattern.
Ahwahnee Principles

Preamble:
Existing patterns of urban and suburban development seriously impair our quality of life. The symptoms are: more congestion and air pollution resulting from our increased dependence on automobiles, the loss of precious open space, the need for costly improvements to roads and public services, the inequitable distribution of economic resources, and the loss of a sense of community. By drawing upon the best from the past and the present, we can plan communities that will more successfully serve the needs of those who live and work within them. Such planning should adhere to certain fundamental principles.

Community Principles

• All planning should be in the form of complete and integrated communities containing housing, shops, work places, schools, parks and civic facilities essential to the daily life of the residents.
• Community size should be designed so that housing, jobs, daily needs and other activities are within easy walking distance of each other.
• As many activities as possible should be located within easy walking distance of transit stops.
• A community should contain a diversity of housing types to enable citizens from a wide range of economic levels and age groups to live within its boundaries.
• Businesses within the community should provide a range of job types for the community’s residents.
• The location and character of the community should be consistent with a larger transit network.
• The community should have a center focus that combines commercial, civic, cultural and recreational uses.
• The community should contain an ample supply of specialized open space in the form of squares, greens and parks whose frequent use is encouraged through place and design.
• Public spaces should be designed to encourage the attention and presence of people at all hours of the day and night.
• Each community or cluster of communities should have a well-defined edge, such as agricultural greenbelts or wildlife corridors, permanently protected from development. (Note: The Johns Island community acutely values the concept of principles of wildlife corridors and connected natural spaces).
• Streets, pedestrian paths and bike paths should contribute to a system of fully connected and interesting routes to all destinations. Their design should encourage pedestrian and bicycle use by being small and spatially defined by buildings, trees and lighting, and by discouraging high speed traffic.
• Wherever possible, the natural terrain, drainage and vegetation of the community should be preserved with superior examples contained within parks or greenbelts. (The Johns Island community promotes the concept of building to the existing ecology/topography rather than altering the existing ecology/topography.)
• The community design should help conserve resources and minimize waste.
• Communities should provide for the efficient use of water through the use of natural drainage, drought tolerant landscaping and recycling.
• The street orientation, the placement of buildings and the use of shading should contribute to the energy efficiency of the community.

Regional Principles

• The regional land-use planning structure should be integrated within a larger transportation network built around transit rather than freeways.
• Regions should be bounded by and provide a continuous system of greenbelt/wildlife corridors to be determined by natural conditions.
• Regional institutions and services (government, stadiums, museums, etc.) should be located in the urban core.
• Materials and methods of construction should be specific to the region, exhibiting a continuity of history and culture and compatibility with the climate to encourage the development of local character and community identity.

Implementation Principles

• The general plan should be updated to incorporate the above principles.
• Rather than allowing developer-initiated, piecemeal development, local governments should take charge of the planning process. General plans should designate where new growth, infill or redevelopment will be allowed to occur.
• Prior to any development, a specific plan should be prepared based on these planning principles.
• Plans should be developed through an open process and participants in the process should be provided visual models of all planning proposals.

Source: Authors: Peter Calthorpe, Michael Corbett, Andres Duany, Elizabeth Moule, Elizabeth Plater-Zyberk, and Stefanos Polyzoides Editor: Peter Katz, Judy Corbett, and Steve Weissman
Plan by Form, not by Use. It is recommended that a range of forms be included in the neighborhood cores and edges. Uses within the buildings should be allowed to evolve over time as population, demographics, the environment and the economy change over time. This also provides greater opportunity for smaller and simpler dwellings that are, by their nature, more affordable. This will require a new approach to administering “uses”—form-based coding. The prevailing single-use practice is not sustainable and further encourages sprawling settlement patterns.

Establish Form-Based Zoning for the Study Area. Regarding form-based zoning, Rangwala states, “This approach shifts the focus of local government oversight from the conventional hyper-control of uses to a more limited (and rational) emphasis on the form of the built environment: the streets, the public spaces formed by the disposition of buildings, and the form of the buildings themselves. There are important differences between conventional zoning practice and form-based practice. In effect, conventional zoning assigns regulations to individual parcels as placeholders, but these, however, are seldom tied to a specific vision of how a community wants to look. Conversely, the regulations in form-based codes are keyed to various street and building types.

“In this format, the focus shifts from the regulation of activities on private property by location to encouraging property owners to build in ways that further a community’s sense of itself, particularly in terms of the design of the public realm. To communicate such a framework, form-based codes typically utilize drawings, diagrams and photographs. The public officials and designers find it easier to understand these than the lists, charts and formulas that dominate standard zoning practice. In practice, the basis of form-based zoning is the same as that for more conventional types; a comprehensive master plan, spelling out how a city wants to develop, underlines both. The form based alternative, however, seeks to develop a more meaningful implementation of the three-dimensional vision implied in the master plan. In particular, a form-based code is generally built on a regulating plan, which in turn relates to more specific building envelope standards, street sections, architectural standards, and definitions.

Illustration 8
Pedestrian Sheds: As a general rule, it is understood that most people will walk approximately 5 minutes to satisfy daily needs and 10 minutes to access public transportation. The illustration above shows that the major portion of each of the three designated C-5 zones falls within the 5 minute walk radius and they are all entirely within the 10 minute radius.

Of these components, the regulating plan is a drawing that specifies, in detail, what is only loosely defined in the City’s master plan. The function and location of streets and their relationship with buildings and open spaces are clearly defined on the regulating plan. Building heights, the siting of buildings on a lot, and uses are then further defined by means of building envelope standards. Typical street sections specify the cartway widths, curb radii, sidewalk and tree planting area dimensions, on-street parking configurations, and other amenities. Architectural standards regulate the important public elements of the façade.

Finally, certain terms not readily understood by the public, or meant to be used in a specific way, are clarified in a definition section. In addition to revamping assumptions about what a zoning code is intended to regulate, the production and administration of such an alternative regulatory structure requires an interdisciplinary sensitivity to urban design, architecture, landscape design, traffic engineering, and even market demand. Crafting the regulating plan and associated building envelope standards also requires knowledge and experience in drawing — typically using computer-aided design software. Finally, specifying building envelope and architectural standards require an understanding of architecture, landscape architecture, and building construction.”

It is proposed that a form-based zoning approach be introduced on Johns Island as an alternative to the conventional, Euclidian zoning that currently exists. This zoning scheme would be based on the form-base of each zone and not based on a pattern of single-use, separated zones. Each zone would define all the variables associated with neighborhood structure, block and site structure, building massing and form and building types as well as identify and prescribe the attributes and variables that determine how a neighborhood is structured and built, and therefore, how it functions.

Form-based zoning is similar to the ecological concept of describing habitat by viewing it in a transect format (a vertical slice across the habitat) and recognizing that human, animal, and vegetative habitats work best where there are...
intense and diverse cores that transition to less intense areas and ultimately to undisturbed natural surrounds. In terms of planning for human habitat, these cores are compact and built to a human scale. They are also diverse, which is to say that there are a variety of building types, civic spaces and activities (uses), occurring within the core. As a result, these places are eminently walkable as dwellings are commingled and adjacent to places of employment, retail businesses, civic institutions and places of recreation.

Form-based zoning promotes the idea of “complete” neighborhoods. Complete neighborhoods offer all of the necessities of life along with various civic amenities and services. Daily shopping needs are nearby. Schools are within biking and walking distance. Transit stops are within a ten-minute walk of the majority of dwellings. And in some cases, places of employment are within a few minutes commute from home.

The form-based code should inventory and respect the ecology of Johns Island (see Awahnee Principles) and the natural resources inventory should be utilized to proactively plan proposed settlements around low-lying areas to avoid flooding. Also, “rural/country” development standards for those properties located outside of the UGB should be developed and adopted.

Building on the Century V Plan, it is recommended that a Form-based Zone be established which draws on the Gathering Place Ordinance as the areas of the most compact and diverse neighborhoods. The previously identified Gathering Place locations would be circumscribed and “zoned” accordingly. The neighborhoods surrounding this zone would be designated for development at a lower overall density and subsequent surrounding areas would likewise be zoned at decreasingly lower densities until a rural preserve region is reached at the edges. This type of zoning approach would produce a gradient or transition of density as described in the Johns Island Growth Management Committee’s recommendations. Those properties located within the City but outside of the UGB should be rezoned to respect the gradient of density/transition. It is important to note that prior to the adoption of a form-based code, the study area will need to be further analyzed to calibrate a form-based code that is of its place.

This approach to defining the requirements for construction of human habitat is closely aligned with the overall recommendations of the Johns Island Growth Management Committee and previous planning efforts. It focuses development along the Maybank Highway in neighborhood cores. It produces neighborhoods that are mixed-use and compact, and therefore, effectively walkable. It is conservative in its use of land as it promotes compact patterns of development rather than hyper-low density suburban patterns that are land consumptive.

Illustration 10 shows a proposed deployment of form-based zones as described.

During the course of formulating the Johns Island Community Plan, Staff prepared an “at first glance/thought” regulating plan for Johns Island. The purple areas are designated T-5 and discontinuous (Type 5) uses with all other uses located to the east of the purple areas.

**General Requirements:**

The purpose of this code is to guide the development of various land uses and related activities so that the resulting neighborhoods are eminently walkable and the development of the city is in keeping with the overall recommendations of the Johns Island Growth Management Committee. The purpose of this code is to provide specific requirements that are consistent with the recommendations of the Johns Island Growth Management Committee.

**Permitted Uses:**

- Uses permitted in the Mixed Use (MU) District and Village Commercial District (VCD), as well as attached dwelling types
- Other uses which are of the same general character as the above permitted uses, as determined by the Town Architect
- For special uses, applicants would have to seek approval through the Special Exceptions process, as outlined in Article VII of the Town of Johns Island Zoning Ordinance

**Notes:**

1. Appurtenances may extend beyond the height limit.
2. All permitted uses are allowed on all floors.
3. Building heights for commercial and mixed-use structures shall have at least one of the following: arcades, colonnades, marquee, porch, or awning.
4. Residential structures shall have a front porch or stoop.
5. Where a lot consecutively abuts more than one street, it shall maintain at least 50% street frontage along its secondary street, in addition to the requirements for its primary street frontage.

**Precedents:**

Illustration 9
Transect-Based Planning—Courtesy DPZ & Co.

Illustration 10
Form-Based Code Example—Bluffton, South Carolina
would be built using a modified version of the current Gathering Place Ordinance. The dark red areas are designated as T-4 zones and would be designed according to a modified version of the current Neighborhood District Ordinance. The pink areas are designated T-3 (which would be less dense), while green represents zone T-2 (less dense still), and the remaining surrounds would be classified T-1 (as a “rural type” zoning).

Special use districts (typically for industrial/commercial use) are also established to provide appropriate places for activities that by their nature should be removed from neighborhoods and neighborhood cores. It is recommended that guidelines for the design and construction of the T-3 and T-2 zones be prepared so that if development occurs within these areas it is consistent with existing patterns in these areas and so that it does not take on a conventional sub-urban pattern. Again, it is important to note that prior to the adoption of a form-based code, the study area will need to be further analyzed to calibrate a form-based code that is of its place.

Focus on and Invest in the Public Realm. In conjunction with the proposed form-based zoning, it is recommended that particular attention be given to the definition of streets and public spaces as places of shared use. The Gathering Place Ordinance requires that buildings be placed close to the street creating a sense of enclosure and allowing the buildings to form public spaces. Like-wise, the configuration of streets is important in contributing to both aesthetic qualities and functional attributes. In addition, the inclusion of well-proportioned and properly detailed greens, squares, plazas and parks completes the assembly of the public realm. The proposed form-based code will address these factors to assure that the neighborhoods may properly serve their residents and guests.

An appropriate example of Post WWII design that did not focus on enhancement of the public realm is the “strip mall.” Ironi-cally, these strip malls in a regional context are well-situated for new “neighborhood centers” that can serve surrounding neighborhoods in a more complete manner. The recommended form-based code should include techniques for “unstripping strip malls” in a phased fashion that respects leases that are in place, phased parking scenarios, and incorporation of big box retail if so desired by the City, etc.

Design Complete Streets. Neighborhood streets should be designed with the following considerations in mind. Streets should evoke safety for pedestrians and cyclists via a street geometry that induces motorists to drive slowly. This is accomplished by keeping neighborhood streets narrow as well as focusing attention to curb radii and on-street parking. On-street parallel parking in neighborhood streets act to reduce perceived travel lane width and generally influence motorists to drive slower.

Streets should be “light on the land” (environmentally sensitive). Hence, the amount of impervious pavement should be mini-mized, or if possible, eliminated. Existing dirt roads contribute to the soft edges and the light and whimsical nature of Johns Island. Also, swale drainage coupled with low curbs or no curbs would allow for the natural drainage inherent in the porous soils found on the island.

Requiring street trees in compact neighborhoods will result in a desirable visual aesthetic as the trees mature and contribute environmentally. Trees intercept precipitation, hold water, convert carbon-dioxide to oxygen, hold soil in place, provide habitat and food for many life forms, create soil, define spaces, cool the ground, reduce heat island effects, yield wood and shield pedestrians from moving vehicles.

Street design should incorporate pedestrian access so that pedestrians have a place to walk; therefore, street design must incorporate sidewalks, crosswalks and environmentally sensitive lighting. In a similar way, streets and roads in low-density areas should be designed to minimize environmental impacts and reflect the “rural” character of the Island.

The current street standards of the City of Charleston do not yield the flexibility needed for “light on the land” approaches to roadway infrastructure. The City should adopt street standards that reflect the aforementioned principles. The design and materials utilized in all dimensions of settlement (building construction, streets, sidewalks, etc.) of a more natural element could become a national model and will maintain the rural feel of Johns Island.
Prepare a Set of Architectural Principles.

In general, the architectural vernacular of native Johns Island is light and whimsical. So that a sense of place is preserved and enhanced, it is recommended that a set of principles for architecture be prepared to inform owners, designers and builders as to preferred architectural choices. These principles would be based upon a study of Johns Island and Sea Island vernacular. It would discuss aspects of proportion, massing and form and address roof pitches, overhangs and eaves, fenestration and exterior elements such as porches and bays. It would address materials, finishes and color schemes and door and window shapes and types. It would address recommended practices in application of exterior detailing. It should not prohibit, however, evolution of newer solutions to construction problems as the economies and technologies of construction change and as design innovation advances, such as solar design. These principles or “promotions of appropriate form” should be incorporated into the form-based code for Johns Island.
Implement Height Control by Story. Height controls based on dimensional limits tend to produce uniform rooftops. As illustrated, floor limits can produce a skyline with variety as well as a captivating built environment. Given the architectural vernacular of Johns Island/Lowcountry Sea Islands, building height should not exceed three and a half stories and should respect the prevailing height of the elder live oak canopy.

Discourage Uniform Distribution of Density. One of the predominant characteristics of sprawl is uniform patterns in terms of building massing and types and uniformity in terms of lot and site plan. It is recommended that in the T-2 and T-3 zones the zoning codes allow and encourage variety in building disposition and lot plans. This means, that in some places, buildings can be clustered closely or that they would not be set on a uniform setback. The existing low-density areas of the island reflect a provisional planning approach where a variety of buildings have been placed as needed or desired by their owners.

Illustration 11-These illustrations are taken from Leon Krier’s book, Architecture, Choice or Fate, Papadakis, 1998
Thinking Regionally, Acting Locally.
In all decisions involving future settlements for Johns Island, the context of the Region must be respected as outlined in the aforementioned Ahwahnee Principles. Also, cooperation between Charleston County and the City of Charleston on all matters related to Johns Island future is a given.

Adopt an edge for the City of Charleston. Metropolitan regions are finite places with geographic boundaries derived from topography, watersheds, coastlines, farmlands, regional parks, and river basins. The metropolis is made of multiple centers that are cities, towns and villages, each with its own identifiable center and edges. The center of the City of Charleston is identifiable as the peninsular downtown. The edge of the City of Charleston, however, should be given more thought. The concept of the Urban Growth Boundary is one that attempts to define this edge from a regulatory fashion. This edge is well-defined if it is based upon geographic boundaries as described above versus that of an arbitrary line on a map. It is important to establish the necessary and fragile relationship to the City’s agrarian hinterland and natural landscapes via this edge. The relationship should be one of an environmental, economic, and cultural eminence. With this said, the City should study the concept of the edge and the associated regulatory policies and procedures. The goal should be to protect the area surrounding the UGB as rural/agricultural while providing for and enhancing housing, economic development, civic, social, recreational opportunities within a well-defined area that has already experienced extensive development and growth.

Maintain rural areas/invest in the Greenbelt in defining an edge. Moreover, in order to create the “forever” edge, the City (with Charleston County) should preserve the rural areas outside of the City as well as invest in the Greenbelt/ecological barrier. The protection of rural preserve and reserve areas can be achieved via other techniques known as the transfer of development rights (TDR) or the purchase of development rights (PDR). The transfer of development rights serve as an opportunity to concentrate development in certain areas, protect other critical areas from development, and compensate property owners where development is not encouraged. Rather than extinguishing development rights in areas slated for protection, a TDR program transfers those rights to other property allowing this “receiving property,” typically located within the city Limits, to develop at greater densities than would otherwise be allowed. TDRs, however, may not be allowable in the State of South Carolina and thus would require enabling legislation. Also, an institutional “allowance holder” is often needed to account for the trades and/or bank available rights. Purchase of Development Rights (PDR) programs identify private property important for water quality, wildlife habitat, and other purposes, and provide funds to buy specified development rights from the owners. Therefore, the easement (may be a conservation easement as well) may, for example, prohibit subdivision and limit construction on the parcel to one house, while allowing the owner to continue to use the property for forestry, farming, hunting, and other rural activities.

Encourage Charleston County to adopt the recommended form-based code for the study area and apply it to those properties within the study area that are of Charleston County jurisdiction. The aforementioned adoption of the code will ensure consistency and comprehensive planning for the subject area. The converse, mutually exclusive planning, should be discouraged as it contributes to suburban sprawl-like settlement patterns. Further, the City should support the continuation of regular meetings between County and City urban designers and planning staff to ensure that new developments and improvements on Johns Island are consistent regardless of jurisdiction.

At an even higher level, the City should coordinate efforts with local, state, and federal agencies and organizations to identify the Island’s cultural and natural resources, incorporate them in the comprehensive planning process, and define a strategy for protecting and enhancing them.
CONCEPTUAL SETTLEMENT PLAN FOR THE SOUTHEAST QUADRANT AT MAYBANK AND RIVER ROAD

During the Johns Island Community Plan, this location was planned under a "what if?" scenario. What if the City adopted a form-based code for Johns Island? What would the resulting form reflect under such a code in the neighborhood cores? This location represents a significant opportunity to apply compact, walkable and diverse design principles (form-based code) on Johns Island.

These illustrations show the kind of patterns and arrangements of buildings, streets and public spaces that produce a sense of place, conserve land and shift development away from conventional 20th century models.

Public, private, civic and environmental spaces are all present in a seamless pattern of small blocks conveying an investment in the public realm of the study area.

The key to walking and driving convenience is a pattern of small blocks.