SUSTAINABLE DEVELOPMENTS IN COASTAL MISSISSIPPI AFTER HURRICANE KATRINA

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Introduction

In response to the housing shortage wrought by Hurricane Katrina coupled with the desire to retain Coastal Mississippi character and protect precious coastal resources, developers are providing solutions in the form of sustainable, conservation-minded communities. One such sustainable development is The Reserve at Carr Bridge (The Reserve), an Andover Development and a conservation-themed 176-acre residential community presently being constructed in Harrison County, Mississippi (Figure 1). The Reserve is planned to accommodate between 320 and 380 single-family homes which are anticipated to be constructed in phases over the next three (3) years. The development has been planned to avoid wetland and floodplain areas with a small percentage of wetland impacts expected. The development plans incorporate principles of smart growth and conservation design, which not only benefit the environment, but add value to the immediate and surrounding community. It is the developer's intent to pursue LEED certification of the residential community in the coming months. Also, a Tidelands Grant Application has been submitted to augment the development of an Eco-walk, an elevated boardwalk through the natural areas, which will be open both to the general public as well as residents of the community. In addition, a network of pedestrian and bicycle trails is planned throughout the development to promote interaction of residents with nature and foster community.

Figure 1. The Reserve at Carr Bridge

The single-family homes are planned to be constructed of "green materials" that enable high energy efficiency, provide for high wind ratings, and can be more quickly constructed than traditional construction. The combination of the above mentioned design principles and approaches to residential development will not only assist in the provision of much needed housing in the area but should be a valuable asset to the coastal community and Harrison County. Water and Sewer Provision for the site was strategically balanced between long term water supply and wastewater treatment through the planned infrastructure found in the final version of the Mississippi Gulf Region Water and Wastewater Plan (MGRWWP) as well as a short term solution of water and sewer infrastructure extensions to nearby existing utilities.

Preliminary engineering was completed for the entire project with final engineering including roadway, sewer, water, stormwater, drainage, and grading plans completed for Phase I. Construction Plans were reviewed and approved by Harrison County and onsite infrastructure bid to site/civil construction contractors. Many responsible bids were received and the project was awarded based on capacity, proposed schedule, and costs. Construction of Phase I site infrastructure is nearing completion with Phase II projected to begin in 2008.

Shortly after Hurricane Katrina ravaged the Mississippi Gulf Coast, Eco-Systems was retained to provide professional consulting services for River Hills, an 800-acre mixed-use development to be constructed in Harrison County, Mississippi near the Lyman Community (Figure 2). The property was rezoned in January 2007 as a Master Planned Community for an estimated 1900 residences along with a significant "community based" commercial area.

Figure 2. River Hills

The proposed project includes four distinct land use areas. These include: a mixed-use commercial area to include commercial, retail, and professional office space combined with live-work units and row housing; a single-family residential area, a mixed-use residential area; and a natural or conservation area. The mixed-use commercial area serves as the town center and the primary gateway into the community that will contain a mixture of land uses designed to serve and compliment not only the proposed community but surrounding communities as well. Anticipated land uses include light commercial, retail, professional office spaces and service related businesses. Intermingled within this compatible mixture of land uses will be live-work units, row houses and townhomes targeted towards an upwardly mobile demographic that will require a level of convenience and accessibility that will be accommodated through the planned combination of businesses and land uses occupying this sector.

The mixed-use residential area will include multiple housing types designed to accommodate a variety of income and demographic levels. This area will cater to retirees, first-time homebuyers and families transitioning from other areas and communities into the proposed development. The housing types anticipated in this area include live-work units, townhomes, row houses and single-family detached residential units. The primary difference between the mixed-use commercial and residential areas includes the overall development density of the two areas and the overall percentage of commercial land uses. The single-family detached area will consist primarily of single-family housing with carefully planned "pocket" parks and recreational areas. The single-family detached area will include a range of detached housing types and options designed to accommodate a variety of income levels. Each single-family home in this area will be strategically located so as to be within a reasonable walking distance to a neighborhood park or green space designed for the encouragement of community gathering and interaction.

The Conservation Area consists of approximately 320 acres of environmentally sensitive lands that contain either jurisdictional wetlands, floodplains or a combination of the two. The Conservation area will serve as a community amenity in that it will be accessible to the community via a network of interconnected pedestrian trails designed to facility alternate modes of transportation within the community and to also facilitate the use and enjoyment of the planned natural areas by community residents. After the intensive planning effort, Eco-Systems developed a construction phasing strategy that would aid in project implementation. Preliminary engineering plans for the entire site were developed including grading plans, water and sewer infrastructure plans, stormwater management and drainage plans, roadway and lot layouts. These plans were developed using progressive principles of conservation design coupled with a low impact approach. Final engineering is underway to produce construction plans and specifications for the first phases of construction that are expected to begin in the near future.

A third development in which Eco-Systems provided a full range of professional consulting services is Graystone at Saracennia. The proposed project consists of approximately 476 acres that lies approximately 2 miles north of the city limits of Moss Point in Jackson County, Mississippi. The development is designed around known environmental constraints to impact less than 6 acres of the total 219 jurisdictional wetlands on site. The remaining 213 acres of wetlands will be placed in conservation easements.

A conceptual master plan has been prepared for the community by utilizing the known constraints of the property and elements of traditional neighborhood design coupled with an intensive conservation planning approach. Eco-Systems developed the master plan after an intensive planning charrette sponsored by the developer and hosted in Miami, FL by Duany Plater-Zyberk & Company (DPZ). The proposed project is planned as a mixed-use development including a village center with shops, restaurants, and light "community based" commercial areas. It is also planned to include live-work units, townhouses, and single-family residences. A village green, courtyards, plaza greens, and linear park areas along the wetlands will compliment the village center with open green space. The design is intended to be pedestrian friendly and fit into the natural surroundings by taking advantage of the natural topography of the area, conservation areas, and Black Creek. A wide variety of housing options tailored to everyone from young singles and families to retirement-aged individuals with an emphasis on providing more affordable housing solutions is intended for the project.

Some of the more unique features of the master plan include the provision for live-work units within the village center and a significant dedication of conservation easements designed to provide permanent protection of critical environmental features such as jurisdictional wetlands. These conservation easements should also provide opportunities for residents and patrons to view wildlife and be exposed to a variety of natural coastal habitats. The village center area will provide the neighborhood commercial services for the community and immediate surrounding areas. Integrated into this village center may also be some residential lofts above the "community based" commercial space. A planned village green with a central civic building or monument is planned for the center of this area. It is anticipated to be used for community events and to provide an aesthetically pleasing landscape for the residents and patrons.

Single-family detached homes will be the primary land use throughout the residential area with a multi-family cluster housing area located to the south of the village center. However, some live/work units, townhouses, and rowhouses will be strategically dispersed to create a seamless transition from the village center to the surrounding residential area. It is anticipated that approximately 800 to 900 total residential units can be accommodated with the development of this plan. Open green space including linear parks and conservation areas will

also be a predominant feature of the residential area. This should provide a pedestrian-friendly environment that encourages interaction of neighbors with each other and with the natural environment and promotes the health of the community. Community buildings, parks, playgrounds, trails, and sports facilities will be dispersed throughout the community in locations that are within convenient walking and biking distance. Black Creek and the over 200 acres of conservation area will provide a natural and scenic amenity to the residences. The residential density of the proposed development has been planned in accordance with the requirements set forth in Jackson County's Subdivision Regulations and Zoning Ordinance and was rezoned as a Planned Unit Development in 2007 (Figure 3). The project is currently in the detailed planning stages.

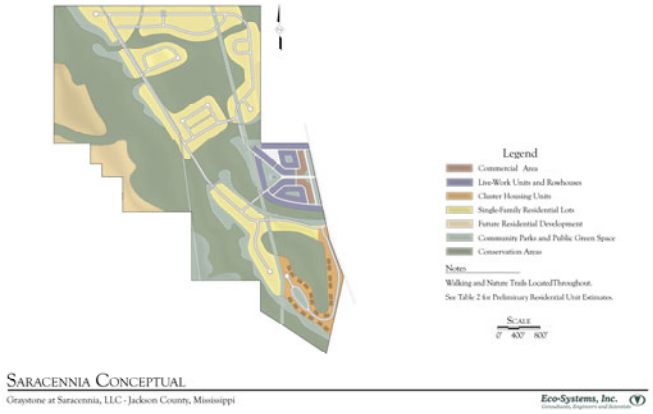

Figure 3. Graystone at Saracennia

These three developments implement smart growth elements, conservation design principles and low impact concepts and were designed to fit into the natural setting by taking advantage of the natural site features such as topography, conservation areas, and natural waterbodies. These developments were engineered not only to meet the housing demands by yielding more than 2,800 residential units, but were designed to conserve the coastal resources of Mississippi. These unique communities represent the healthy balance that can be achieved between economic development and environmental protection in coastal Mississippi.

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