SEA LEVEL RISE AND REDEVELOPMENT
OF GALVESTON ISLAND STATE PARK

ASLA 2013 ANNUAL MEETING & EXPO | BOSTON
EDUCATION SESSION HANDOUT
AFTER IKE: SEA LEVEL RISE AND REDEVELOPMENT OF GALVESTON ISLAND STATE PARK

Ravaged by Hurricane Ike, Galveston Island State Park was completely devastated in 2008. Based on predictive modeling of sea level rise and hurricane storm events, the master plan celebrates the fragility of this unique barrier island landscape. The master plan accommodates anticipated site conditions that will evolve over coming decades.

LEARNING OBJECTIVES

- Understand sea level rise and hurricane predictive modeling to anticipate the evolution of coastal landscapes during master planning.
- Learn how a system of site tools embraces the dynamic barrier island environment rather than artificially fighting against it.
- Explore how creative program delivery and flexible facilities retain existing visitation patterns, engage new user groups, leverage investment, and financially sustain the mission.
- Discover site interpretation techniques that celebrate the fragility of this delicate site and invite visitors to explore the “Bay to Beach” connection.
MIKE FRAZE  PRINCIPAL, STUDIO OUTSIDE

As a founding principal of Studio Outside, Mike has 18 years of experience in the design of environmental education facilities, parks, and camps. He pursues a collaborative and process-oriented planning approach that assigns value to visitor experience, natural systems, and contextual influences. Fostering the client mission, Mike engages stakeholders at all stages of project development as a means to refine program and functionality. In addition to Galveston Island State Park, previous projects include master plans for Silver Bay YMCA of the Adirondacks, the Girl Scouts of NE Texas, and most recently a county wide camping program for Cook County, Illinois.

KEITH BOWERS  PRESIDENT, BIOHABITATS, INC.

As the founder and president of Biohabitats, Keith has built a multidisciplinary organization focused on regenerative design – the blurring of boundaries between conservation planning, ecological restoration and sustainable design. Using living systems as the basis for all of its work, Biohabitats applies a whole-systems approach to all of its projects. His work ranges from site-specific ecosystem restoration projects involving wetland, river, woodland and coastal habitat restoration to regional watershed management and conservation planning, to the development of comprehensive sustainability programs for communities and campuses throughout the country.

JIM SHELTON  PRINCIPAL, OVERLAND PARTNERS ARCHITECTS

Jim Shelton is a principal at Overland Partners. He has extensive experience focused on environmental, cultural, and institutional projects, as well as select commercial and residential work. As design principal and project manager, Jim has collaborated with a variety of consultant teams on the master plan and design of the Chickasaw Cultural Center, an academic building at the Dallas Campus of the University of North Texas, and the Grand Canyon Transit Center. Jim received a Bachelor of Architecture from the University of Texas at Austin and is active in the San Antonio design community.

JOELYNN BARCLAY  TEXAS PARKS & WILDLIFE DEPARTMENT

Joelynn Barclay has worked in the Infrastructure Division of Texas Parks and Wildlife Department since 2002. As a park planner, she works with a variety of conservation professionals all over Texas in order to develop resource-based recreation facility plans that broaden access to the outdoors, protect natural resources and enhance the quality of experience for people of all ages, abilities and interests. An avid hiker, camper and sailing enthusiast, her outdoor interests easily align with the Agency mission. Joelynn is a Professional Landscape Architect, LEED-AP and a recent graduate of the Tree Folks - Urban Forest Steward program in Austin, Texas.

ADDITIONAL COLLABORATION INCLUDED
GOALS + OPPORTUNITIES

- Role of Galveston Island State Park within the island context.
- Perception of Galveston Island State Park as two distinct parks - beach and bay. Beach receives majority of traffic, while bay is often overlooked but contains strong recreational and educational opportunities.
- “Bay to Beach” transect available only within GISP. Opportunity must overcome constructed challenges that minimize perception of beach park vs. bay park.
- Extensive public process undertaken that engaged all ranges of demographics and users. Utilized intercept surveys to meet people 'where they are' to expand perspective and depth of public input.
Galveston Island State Park “Bay to Beach” habitat transect.

Impacts of Subsidence and Sea Level Rise on Galveston Island State Park. Fifty-year time horizon anticipates significant transition of beach and marsh areas into bay and gulf.

Predictive models were developed to identify land mass loss, as well as evaluate how habitats would transition over time. Models also identified potential challenges with existing infrastructure over fifty-year time horizon.

FEMA/ NFIP flood elevations establish parameters of approximately 20 feet above sea level to place structures above the wave crest of a 100 year tropical storm event.
Site planning will respond to a fifty year time horizon.

Structure life spans will be tied to function, elevation, and location. Facilities of major investment, such as a Discovery Center, will adhere to a 100 year time horizon.

Facilities located in zones of future inundation must appropriately respond to those site changes.

Facilities should be aggregated to the edges.

Facilities should work as a family of experiences and must be flexible for multiple programs.
Master plan clusters development and reduces developed footprint and infrastructure (in relation to existing site conditions). Plan also incorporates contiguous open space to emphasize ‘Bay to Beach’ experience.

Plan connects beach and bay with pedestrian bridge that spans over highway - providing continuous pedestrian trail access.

Discovery Center is launch point for all site interpretive discovery. Facility is purposely located in area of future inundation to emphasize dynamic nature of site, and register site evolution.

Multi-use campsites are organized in ‘box knife’ configuration that allows adaptability for beach movement over fifty year time horizon. Plan incorporates a minimum 125’ dune migration zone to preserve integrity of dune and swale system.
The ecological diversity of Galveston Island State Park (GISP) is like none other on the Texas coast. Showcasing a complex mosaic of coastal dunes, strand prairies, and salt marsh, the park is a dynamic environmental remnant of the Texas barrier island system, offering an unparalleled “beach to bay” experience that is no longer attainable on the island.

The pressures of natural and man-made phenomena, however, have compromised the fragile balance of this environment. Ravaged by Hurricane Ike, key park facilities were lost and have yet to return. The facilities that did survive do so in locations that impact key natural systems. A state highway bisects the park into two disjointed “beach and bay parks,” underscoring the dichotomy between man and nature that threatens the very existence of this park.

Texas Parks and Wildlife commissioned the Studio Outside team, which included Overland Partners Architects and Biohabitats, Inc. to craft a visionary plan that would initiate a rebirth of the park. The team canvassed a broad audience to identify program opportunities and delivery methods that specifically repositioned Galveston Island State Park to effectively meet a changing market.

The future of GISP, however, resides in a balance between recreation and nature. Critical determining factors acknowledge culture, ecology, and experience while also considering coastal dynamics such as weather patterns, sea level rise, and island subsidence. The master plan infuses a holistic approach to habitat restoration, sustainability, interpretation, visitor experience, and recreation.

The visitor experience at Galveston Island State Park begins at the Discovery Center, where the structure’s siting and state of the art LEED construction capitalize on bay views while emphasizing the dynamic nature and fragility of the natural systems around it. The Discovery Center and all park programs anticipate future site evolution identified within the predictive sea level rise models. The ‘transect trail’ begins at the Center and showcases the dynamic habitat changes that transition from “beach to bay.”

The plan positions Galveston Island State Park to effectively manage its fragile resources while still providing diverse recreation opportunities for its constituency. Through establishing appropriate balances between recreation and nature, the park is poised to regain, and retain, its status as a flagship destination in the Texas Parks and Wildlife system.