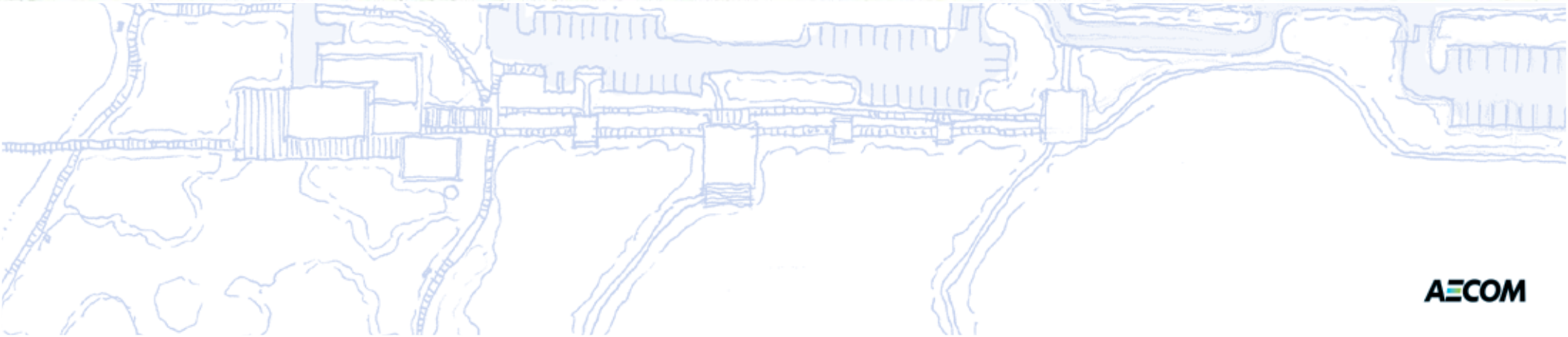
04 INITIAL CONCEPTS



AECOM

04 Initial Concepts

4.1 Basic Concept

The basic concept for the East End Lagoon Park & Preserve is to protect and restore existing natural resources while enhancing the overall visitor experience. The site is referred to as a "Park & Preserve" because it provides a variety of recreational opportunities while also emphasizing the importance of preserving the open, undeveloped character of the site. This is the largest undeveloped piece of land on Galveston Island, and it is important to keep this site open and accessible.

It is important to point out that the East End Lagoon Park & Preserve is not in pristine condition; much of the site has been impacted by human and natural activities over the years. The site is in a constant state of flux because of its location, and many of the impacts are unavoidable. The site itself is dynamic because of the barrier island setting. In some ways it is fragile and vulnerable because of its exposure to the elements, but it is also resilient. Approximately 80% of the site is considered to be jurisdictional wetlands and it is frequently inundated with water. Flooding from storm surges and high tide is a common problem.

Because of the condition of the site, emphasis will be more on restoration and protection than on preservation. There are very few parts of the site that need to be preserved as is. Most areas can be enhanced by removing invasive species, cleaning up debris and pollution, adding native plant materials, and creating a more sustainable environment.

The story that needs to be told at the site focuses on how humans interact with barrier island environments. Interpretation would occur both on the site and in a proposed environmental education center. Any structures added to the site, including the environmental education center, should be consistent with what we would expect to find in these types of coastal areas. That means utilizing colors, textures, materials, and forms that are found in the local architectural vernacular. Any major structure on the site will have to be raised a minimum of 18' to stay out of the flood zone.

For the environmental education center, the basic concept was to design a facility that evolves and changes over time and can be constructed in phases based upon specific needs at a given point in time. The center serves as the focal point for the site during all phases of the project.

Site activities should include a mixture of self-discovery as well as programmed activities. Although we want to encourage visitors to the site to explore freely, it is important to minimize the potential impacts of these visitors. Some parking will be provided onsite, but visitors may have to park elsewhere and be shuttled in for major events and for busy weekends.

Figure 4.0: East End Lagoon Park & Preserve

4.2 Sustainability Concepts

One of the over-riding concepts for the East End Lagoon Park & Preserve is to emphasize sustainability in terms of both how site features are designed and constructed as well as the interpretive stories that are told. Sustainability reflects both a monumental concept of life on a global scale and a simple notion of balance applicable to everyone. The most commonly used "official" definition comes from the 1987 United Nations' landmark report Our Common Future, where it was defined as "meeting the needs of present generations, while not compromising the ability of future generations to meet their own needs."

A truly holistic approach to a sustainable plan must recognize the impacts of every design choice on natural and cultural resources. Aside from being attractive and enjoyable for humans, sustainable projects promote biological diversity, contribute to the quality of the air and water and reduce the impacts of construction and human use to help preserve the planet for future generations. The East End Lagoon Park & Preserve does just that.

One major goal is to implement a design approach that emphasizes the use of green, sustainable materials, practices, and processes. This means incorporating the following strategies:

- Includes significant green infrastructure
- Quantification of the carbon footprint of the proposed project
- Includes integration of renewable energy technologies
- Significant preservation/enhancement of ecology/habitat
- Incorporation of bicycle and pedestrian infrastructure
- Incorporation of cutting edge water management and recycling techniques
- Landscape design requiring no potable water for irrigation
- Involvement of the community in the development of the plan/design
- Significant use of local materials (more than 50%)
- Significant use of recycled materials.
- Adoption of management plan/strategy to guide sustainable practice on-site during construction.
- One-hundred percent use of native (or climate equivalent) plants

Other sustainable practices include the following:

Sustainable Ecology / Soils / Vegetation / Habitat Practices

- Limit development to the smallest possible footprint to accomplish design objectives.
- Protect significant habitat on site.
- Preserve topsoil and limit compaction during construction. Preserve and protect healthy soils, retaining topsoil, minimizing grading, compaction and soil disturbance and avoiding vegetation removal and disturbance.
- Avoid disturbing and removing vegetation to prevent damage to soil structure and increase erosion and sedimentation and to reduce release of significant amounts of organic carbon previously sequestered in the soil.
- Restore 20% or more of the site with native habitat and remove invasive species.
- Maximize biodiversity and habitat benefits, plan for connected habitats and native plant communities.
- Provide exterior lighting only for safety and comfort, using efficient lighting and appropriate controls.

Sustainable Sociocultural / Finance / Human Wellbeing Practices

- Understand the site history and potential cultural and historic resources that should be preserved.
- Promote sustainability principles through incorporating education, demonstration areas, and programming on site.
- Investigate and set up financing mechanisms where necessary to implement sustainability objectives.

Sustainable Water Practices

- Implement a stormwater management plan that protects receiving waters from excessive erosion and uncontrolled runoff.
- Implement a stormwater management plan that reduces impervious cover (more permeable paving/planting, promotes infiltration, and captures and treats stormwater runoff from 90% of average annual rainfall using Best Management Practices such as biotention, swales, rain garden, constructed wetlands.
- Specify water reuse strategies (rain water / grey water) within buildings.

- Reduce or eliminate potable water use for landscaping through use of captured rainwater (cisterns etc), recycled stormwater, or treated water insufficient for drinking. Give preference to untreated, site-collected or reused water sources wherever possible.
- Implement water-conserving landscape practices, including soil improvement, use of mulch, limited turn areas, planting in relation to microclimate, waste scheduling and selection of plants with water needs that match local conditions.
- Ensure that water availability on site is balanced with potable water needs and landscape features. Ensure water on site suffices and can meet other hydrologic and environmental needs that the site may have.

Sustainable Energy Practices

- Orientate building appropriately to minimize / maximize solar gain at appropriate times of day according to latitude/longitude, take advantage of cooling by prevailing winds.
- Incorporate energy conservation techniques in building design.
- Maximize access to daylighting, views and outdoor areas.
- Apply passive solar design and natural ventilation principles and respond to local (and future) climatic conditions by planning for anticipated temperatures, wind, humidity and rainfall.
- Specify highly energy efficient services and systems, including controls and commissioning strategies.
- Consider opportunities for linking energy services with existing, adjacent developments.
- Implement renewable energy into project design, considering suitability for solar thermal, solar electric, wind, geothermal, ground sourced, low-impact hydro, biomass and bio-gas strategies. Aim for a minimum percentage above any current local standards.
- Obtain third party environmental certification of buildings and/ or site.

Sustainable Materials & Waste Reduction Practices

- Ensure that the development reflects simplicity in form and function. Where technologies are employed, they significantly conserve water and energy, can be easily maintained and reduce waste.
- Develop a construction waste management plan. Recycle and or salvage minimum 50% of non-hazardous construction and demolition debris and develop construction waste management plan.
- Consider the full life-cycle implications of materials prior to their specification.
- Source local or regional materials - locally produced products and indigenous materials have been specified wherever possible. Use salvaged, refurbished or reused materials and from rapidly renewable resources.

Sustainable Resilience Practices

- Evaluate alternative sustainable design strategies for functional and performance deficiencies and for potential impacts on natural and cultural resources. Consider long term flexibility of uses of buildings for changing needs of population.
- Reduce ecological footprint: reduce consumption and ensure availability of sufficient renewable resources.

4.3 Environmental Education Center

Early on in the planning process, the Steering Committee emphasized the importance of an environmental education center within the East End Lagoon Park & Preserve. The collective opinion was that such a center would be required to provide year-round educational opportunities and to help elevate the Park & Preserve as a “world class” destination site.

The consensus was that the environmental education center needed to be up to 20,000 square feet in size, raised a minimum of 18’ about the ground to prevent flood damage, and be located on the East End Lagoon Park & Preserve site. The question, then, was where on the site would be the best location for the center.

Potential Locations for Environmental education center

After analyzing the site, six (6) areas were identified as potential locations for the environmental education center. Each site was evaluated in terms of the following:

- Access
- Visibility
- Adequate space for parking and development
- Viewing opportunities
- Access to site amenities
- Potential environmental impacts
- Entry experience
- Potential impacts from other uses

Alternative A - Off of Apffel Park Drive

1. Positive Aspects
    - This location would separate activity from those that occur along Boddeker Road.
    - The center could be oriented toward site so it takes advantages of views of the site and toward the lagoon and shipping channel (minimizing the views of the developed portions of the East End).
    - This site is drier and could be easier to develop.
    - By having the center on the south side of the preserve, it would discourage additional activities on Boddeker Road, where safety is a greater concern.
    - Location is in the center of the preserve, allowing for relatively easy access to both the lagoon and the uplands.

2. Negative Aspects
    - The entry experience into the environmental education center would be impacted by the built area along the southern side of Apffel Road Drive.
    - The site is close to BeachTown, and this potentially has a negative impact on both the environmental education center and BeachTown.
    - It is far from the lagoon.
    - It would increase traffic on Apffel Park Drive.
    - This location could not take advantage of other parking opportunities along Boddeker Road.
    - Does not have the best views of the shipping channel.
    - There is not sufficient room on-site to handle all of the parking needs.

Figure 4.1: Environmental education center Alternative "A"

Figure 4.2: Environmental education center Alternative "B"

Alternative B – End of Seawall

1. Positive Aspects
    - Good views of the shipping channel.
    - Great visibility and would serve as a visual landmark at the end of Seawall Blvd.
    - Great physical and visual access with good location for a larger parking facility.
    - The site is already impacted, so no new environmental damages would be expected.

2. Negative Aspects
    - This site is separated from the majority of the park
    - May be better as a viewing opportunity, not as the location for the environmental education center.
    - Visitors would have to cross Boddeker Road to get to the lagoon and the rest of the Park & Preserve.
    - Does not feel like it is part of the Park & Preserve because it is separated and disconnected from the main body of the site. Does not immerse the visitor in the environment.
    - Potential Ike Dike could extend from here, and that might cause problems in terms of visual and physical impact or destruction of the center.
    - There is not sufficient room on-site to handle all of the parking needs.

Figure 4.3: Environmental education center Alternative "C"

Alternative C – Off Boddeker Road near the Lagoon

1. Positive Aspects
    - The site is already impacted, so environmental damages would be minimized.
    - Easy access to the site from Seawall Drive.
    - Good views of the shipping channel with access off Boddeker
    - Good physical and visual access to the lagoon.
    - Close to wet ponds, and these could be used for birding.
    - Good entry experience since it can be seen from Seawall Drive and visitors will be able to see where they need to go.
    - This location is near the different environmental features on site.
    - The environmental education center could utilize additional parking along Boddeker Road.
    - Could provide good kayak access to the lagoon.
    - It is far enough away from the beach so that it does not feel like a part of that activity.

2. Negative Aspects
    - Boddeker Road is already a busy road and this would add more activity to this area along with insufficient room to handle parking.
    - There may be conflicts between the different user groups wanting to use the area.
    - Parking conflicts may be a problem, especially on weekends and when there are scheduled activities.

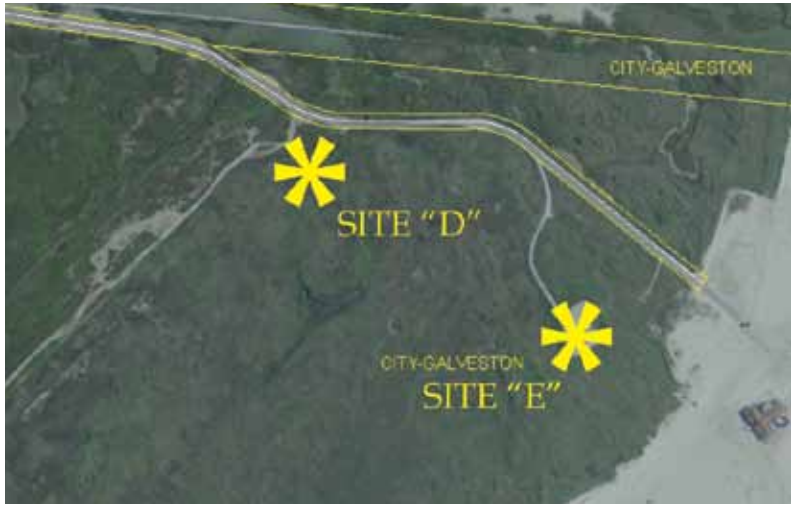


Figure 4.4: Environmental education center Alternative "D & E"

Alternative D – Off Boddeker Road near Easement

1. Positive Aspects
    - Good access off of Boddeker Road.
    - Best access to Big Reef area.
    - Many of the same positives as Alternative C, but not as visible from Seawall Blvd. and not as good access to the lagoon.
    - Good access to the different environmental features on the site.
    - Close enough to walk to the beach, yet would not be considered part of the beach area.
    - Good views of the shipping channel.

2. Negative Aspects
    - Boddeker Road is already a busy road and this would add more activity to this area along with insufficient room to handle parking.
    - Not as visible from Seawall Blvd. as some other alternatives.
    - Further away from the lagoon than some other alternatives.
    - There may be conflicts between the different user groups wanting to use the area.
    - Parking conflicts may be a problem, especially on weekends and when there are scheduled activities.

Alternative E – Loran Site

1. Positive Aspects
    - There would be a nice view from environmental education center back to the main part of the Park & Preserve.
    - This site is adjacent to beach parking, which could potentially be used for overflow parking.
    - Utilities already exist on this site, so that will minimize disturbance and reduce infrastructure cost.
    - The site is already disturbed, so additional environmental impacts will be minimized.
    - The site is big enough to accommodate the size of an environmental education center we are discussing.
    - This location is on a barrier dune, and this could be part of the interpretive story.

2. Negative Aspects
    - The site is very far away from the lagoon and the wet ponds.
    - It is too far to walk to the lagoon and many other parts of the site.
    - This location would not have a "nature center" experience because of all the beach activities.
    - There is not a very good arrival sequence because the site is so far away from Seawall Blvd. and can't be easily seen from the road
    - Connected more to the beach than it is the preserve, and is more of a beach experience than other alternatives
    - There may be conflicts with parking, with beach visitors wanting to utilize parking for the environmental education center

Alternative F – NOAA Shrimp Hatchery Site

1. Positive Aspects
    - This site has great visibility and access because of its proximity to Seawall Blvd.
    - The site is already disturbed so additional environmental impacts would be reduced
    - There are great views of, and access to the lagoon

2. Negative Aspects
    - Poor access to the rest of the site
    - Limited parking here because much of it is marsh

- Noise from Seawall Blvd. may be a problem
- This site is within the NOAA property, so additional discussions would have to occur to work out the details on developing an environmental education center here
- Access to the rest of the Park & Preserve would be difficult
- A bridge or boardwalk going across the lagoon would greatly improve access, but it is unlikely such a structure would be permitted. Bridge would also significantly increase cost of project.
- This site may be better served as a scenic overlook and/or interpretive site
- The site itself is not very big, and there is limited room for expansion

Based on an in-depth analysis of each alternative site, the decision was made to continue to explore Sites A, C, and D as a possible location for the environmental education center.

Review of Loran Site

Based upon input at a public meeting the design team revisited alternative "E", the former Loran Station site. An initial conceptual design was developed for this site.

Figure 4.6: East End Lagoon Alternative "F

The conceptual design raises a couple of concerns with using the LORAN site as the location for the environmental education center The Interpretive Pier is greatly compromised to accommodate the parking, coming off at an angle from Boddeker. The other approach was to let the building run parallel to the road so the pier could do the same, but this would expose the long side of the building to the hot southwest sun.

In this location, the building is more of a beach building than it is a nature preserve building, and the presence of the building on the dunes is a bit daunting. Views north toward the ship channel are not as good, but it does have a great and full view of the gulf.

The other potential use for the LORAN site was tent camping. The economic analysis for the project indicated that tent camping would be a major revenue generator, and that it would be difficult to make the budget balance without these types of uses. The LORAN site is one of the few areas in the Park & Preserve that has already been impacted, is away from Boddeker Road, and is of sufficient size to accommodate clusters of tent platforms.

Ultimately, the decision was made that the LORAN site would work best for tent camping,

Final Decision on Site Location

After evaluating all of the potential sites, the decision was made to locate the environmental education center on the site closest to the lagoon. This site provides the greatest opportunity for creating an exciting visitor experience. The environmental education center on this site will serve as a visual landmark that will be visible from Boddeker. The proximity to the lagoon, to the ship channel, and to Boddeker all are reasons this site will be successful. Care will have to be taken to ensure that construction of the environmental education center does not have a negative impact on the lagoon.

4.4 Interpretive Planning

The Galveston East End Lagoon Park & Preserve presents a remarkable interpretive opportunity. Not only will the new preserve safeguard and make publicly accessible a vital natural area – arguably the most ecologically significant parcel of undeveloped land remaining on Galveston Island

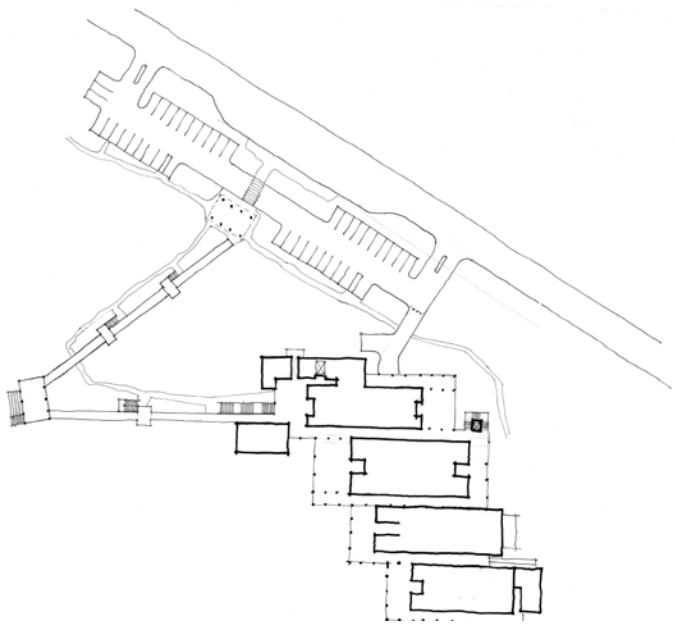


Figure 4.7: East End Lagoon Site “E” Alternative

today – it has the potential to transform popular perceptions of the island among residents and visitors alike, enhancing its stature as a nature tourism destination and adding an entirely new layer of experiences to Galveston’s well-deserved reputation as “the playground of the Gulf Coast.

The project site boasts a striking diversity of habitats, from the fast-moving waters of the Houston Ship Channel to the breaking waves on the jetty, with tidal lagoons and wetlands, coastal prairie grasslands, inter-tidal wetlands, sand flats and dunes, and sea grass beds all represented. The beach at this location is the only naturally accreting sand beach in Galveston, and the dunes, though ravaged by Hurricane Ike and recreational activities, are the last natural barrier dune system on the island. The estuary and shallows provide critical shelter, feeding, and nursery grounds for countless species of fish and shellfish, and the site teems with bird life, especially during the fall and spring migration seasons when it is heavily populated by migratory waterfowl passing through along the Mississippi Flyway.

What is more, the Park & Preserve is literally surrounded by powerful evidence of the role of humans in the natural world. The views north and east from the site are often dominated by big tankers and freighters moving through the ship channel or queuing in the Bolivar Roads as they await their opportunity to berth. To the west, the cargo cranes of the Port of Galveston are visible, while to the south stand the tall condominium

Figure 4.8: East End Lagoon Site “E” Alternative Perspective

towers of the Palisades Palms development and the iconic low-rise coastal cottages of BeachTown, both of them testaments to people's desire to live as close as possible to the coastline. At the Galveston East End Lagoon Park & Preserve we are challenged to fully interpret the complex interactions between people and nature, industry and ecology, and cultural heritage and natural history.

This will be a new kind of "nature preserve," with a new kind of environmental education center at its heart. It will combine wildlife viewing and nature observation with active recreation, and it will welcome sport and subsistence fishers and shell-fishers armed with poles, traps and nets as well as birders equipped with cameras and binoculars. Scientists and researchers, possibly including undergraduate and graduate students at TAMUG, Texas A&M's marine resources-focused Galveston campus, may conduct on-going projects at the preserve, working with high-school students and other community members who might get involved in "citizen scientist" type activities.

The goal is to make the Park & Preserve and its environmental education center into a kind of "living laboratory," active rather than passive, constantly evolving and changing. Local school children who have grown up beside these wetlands but never ventured into them will discover exciting new worlds to explore and may even catch glimpses of possible future careers. Beachgoers down for the day from greater Houston will encounter a rich palette of environmental experiences to complement the island's famous surf and sand. And destination nature tourists drawn to the Gulf Coast's world-class birding will have a new starting point from which to launch their adventures.

The East End Lagoon Park & Preserve and its environmental education center will evolve over time. Beginning with a targeted focus on the ecology and natural history of the preserve and its habitats, interpretive offerings (both exhibits and educational programming) will expand to include a diverse network of trails and exterior interpretation as well as long-term and changing interior exhibits addressing not just the immediate environs of the East End Lagoon Park & Preserve, but a broad range of related regional, national, and global topics. The phased implementation of the East End Lagoon Park & Preserve initiative is deliberate and strategic, enabling the new institution to learn and adapt as it grows.

Figure 4.9: East End Lagoon with Ship Channel in background

The media and methodologies recommended for the East End Lagoon Park & Preserve are a mix of the familiar (interior and exterior graphics, signage, and exhibit components; live animal displays; touchable sculptural elements; mechanical and audiovisual or multimedia interactives; and environmental education programs) and the unexpected (adventure play experiences; aquatic trails; interpretive fitness courses; on-site overnight programs.) Our intention is to create a linked palette of experiences that engage our visitors' bodies and senses as well as their minds, surprising and challenging them while providing essential and sometimes surprising information. Audiences will emerge from their visit to the preserve not only informed but newly curious and energized. We want them to leave with a clearer understanding of the importance of barrier islands and estuarine environments, and even more important, of their own place in the natural world.

This report documents the conclusions of our planning and design effort and presents a conceptual blueprint for interpretation at the East End Lagoon Park & Preserve and its environmental education center. We have established a clear progression of experiences and components, identified

locations for each, and developed preliminary phasing recommendations which, if followed, will yield an incremental unfolding and expansion of the overall visitor experience over the course of five to ten years.

It is important to note that the completion of this interpretive planning process actually marks the commencement of a much more ambitious and significant enterprise: implementation of the project itself. Additional content development and design work will be required to advance the proposed project components from their present conceptual level to production-ready designs, but we believe that we have articulated a strong and flexible framework to guide those efforts moving forward. In addition, the project will be implemented in phases and many aspects will almost certainly evolve over time, changing in response to revised educational or experience goals, to the availability of resources, or simply to conditions on the ground. This is to be expected, and often results in a stronger overall project.

Interpretive Themes and Subthemes

The over-arching interpretive theme of the East End Lagoon Park & Preserve is intended to define a core conceptual focus for interpretation at and its environmental education center. It should serve as the primary benchmark against which any and all proposed interpretive content or experiences can be evaluated.

Over arching Interpretive Theme

"Exploring the Intersection of People and Nature – Past, Present and Future – in a Dynamic and Constantly Changing Environment."

The Interpretive Themes and Subthemes support the over arching theme and establish the basic content framework for the project. These are the essential ideas that interpretation at the preserve and environmental education center will explore, using a range of different methodologies. (In addition, of course, we will provide practical information for guests on topics such as visit planning and regional nature tourism opportunities.)

Interpretive Themes

"Land, Wind and Water: The Evolution of Barrier Islands"

- What are barrier islands? What makes them unique? What natural forces form and shape them? How do they change over time? What ecological benefits do they provide?

"Fertile, Fragile and Threatened: Estuarine Environments of the Texas Gulf Coast"

- What are the Gulf Coast estuaries, and where are they located? What role do they play in the Gulf Coast environment? Why are they so valuable? Why are they threatened?

"People, Place and Time: The Cultural Ecology of Galveston Island"

- How have humans interacted with nature on Galveston Island over time?
- How has that relationship shaped both the place and the people? What aspects of the relationship are especially important or unique?

"Pieces, Patterns and Processes: A Field Guide to the East End Lagoon"

- What are the key habitats and plant and animal species of the East End Lagoon Preserve? How do the different habitats relate to one another? How have they been formed, and what are their critical features? What are the relationships between individual species, and between them and the habitats that support them? What do visitors need to know to recognize, understand, and appreciate these resources as they explore the preserve?

Figure 4.10: Big Reef area

Interpretive Subthemes

"Work in Progress: Habitat Restoration in the East End Lagoon Park & Preserve"

- What is the East End Lagoon Park & Preserve doing to restore and manage native habitats and wildlife populations? What is the goal of this effort? What are the greatest challenges? Where can visitors see restoration in progress? How can they get involved?

"Sustainability in Action: Green Initiatives at the East End Lagoon Park & Preserve"

- What is the East End Lagoon Park & Preserve doing to reduce its environmental footprint, in design, construction, and operations? Where can visitors see evidence of these commitments?

"Taking Care: Environmental Conservation and Stewardship"

- How can visitors contribute to and participate in the East End Lagoon Park & Preserve's efforts to preserve the ecological diversity and biological productivity of the East End Lagoon? What steps can visitors take in their homes and communities to become active stewards of the environment?

Interpretive Methodologies

The Interpretive Media section lays out a preliminary typology of interpretive components that we believe would be most appropriate and effective for the East End Lagoon Park & Preserve project. These are the tools we'll use to tell our stories.

The Self-Directed Activities section describes the kinds of activities that we think casual visitors (as distinct from schedules groups or classes) might engage in at the Park & Preserve. To the extent that these will need infrastructural support (site or architecture) it may be useful to begin considering that during project master planning.

Finally, Mediated Activities looks at a variety of experiences that might occur at the Park & Preserve under the direction of staff or volunteers: programs, classes, etc. Again, the reason to begin thinking about these elements during the master planning process is to try to identify any critical infrastructure or operational issues.

Interpretive Media Exterior Exhibits and Graphics

This category includes elements such as kiosks; interpretive graphic panels, waysides and rails; trailhead and trailside interpretation; flora and fauna species identification graphics; informational, instructional, and regulatory graphics (such as park maps and orientation information, rules and regulations, safety information; fees and hours of operation, etc.); wildlife and habitat viewing aids such as siting tubes or view framing devices; and simple sculptural elements or hands-on interactive devices.

These elements may take a wide range of different sizes, styles and forms, depending upon their purpose, content, and installation location. Most will be permanent, but some may be ephemeral, for example, to provide interpretation for a temporary trail or natural occurrence (such as a plant in bloom or a migratory species at the preserve.) Most will be located within the boundaries of the Park & Preserve, but some may be installed off-site as a means of extending the reach and impact of the preserve's presence. For example, satellite interpretive elements might be installed at East Beach parking lots and areas of ecological significance, and/or on the grounds of BeachTown and Palisade Palms.

To facilitate and formalize opportunities for exterior interpretation (as well as site identity and way-finding and educational programs and activities, see below) a consistent "typology" of locations and structures should be developed where these elements would occur. These might include:

- Simple open platforms (with safety railings, if necessary, when they are located on or adjacent to the lagoon) that could serve as program platforms for scheduled groups, and possibly as tent sites for scheduled overnight programs;
- Viewing blinds sited so as to enhance opportunities for bird watching or other forms of wildlife observation;
- Roofed interpretive shelters which provide shade and a measure of protection from wind and rain. These would be open on at least three sides but would house permanent interpretive graphics and other elements; and
- Interpretive "gateways" at major site entry points and trailheads. These could be either roofed or open and would house permanent interpretive and/or informational and way-finding elements.

Figure 4.11: Interpretive shelters

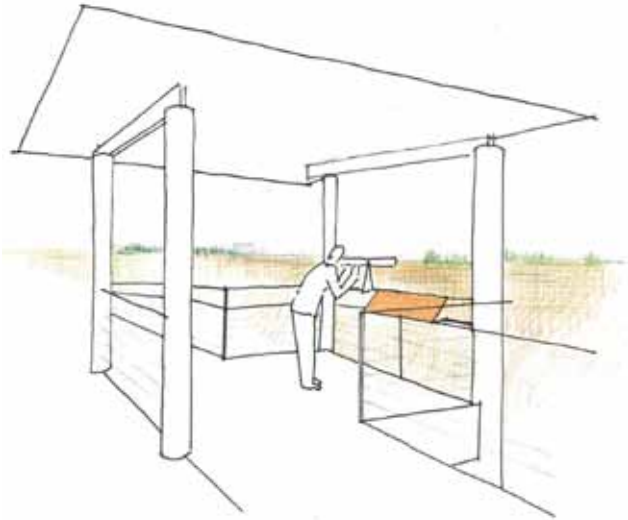


Figure 4.12: Simple open Platform

Figure 4.13: Interpretive Gateway

Interior exhibits and graphics

Interior exhibits and graphics will be installed within the environmental education center, primarily in a dedicated interpretive gallery (or galleries) and in public reception areas and circulation spaces. Given Galveston's weather and climate, the inclusion in the project (starting in Phase 2) of a significant fully climate controlled exhibits gallery and/or environmental education program space will significantly expand the possible range of interpretive media that might be utilized.

Among the components and methodologies we would recommend for consideration during the planning and design of the environmental education center exhibits are traditional interpretive graphics and displays; objects and artifacts; audiovisual programs; interactive multimedia; hands-on and mechanical interactives; and dioramas or replicated environments. The exhibit components in the interpretive gallery will be "permanent," in the sense that the fixtures and furnishings will be designed and constructed for long-term installation and operation. However, they will also be designed to incorporate a variety of changeable elements, to facilitate regular renewal and refreshment of the exhibits and their content.

Figure 4.14: Red Butte Children's Garden

It would be worthwhile to explore the limited use of live animal exhibits (primarily fishes and marine invertebrates, reptiles and amphibians, insects, and possibly small birds and mammals); and animal contact opportunities (touch tanks, hands-on demonstrations) at the environmental education center. These kinds of exhibits can significantly enhance the quality and impact of the guest experience, but they obviously require a substantial operational commitment and should not even be considered unless such a commitment can be guaranteed. If permanent live animal exhibits are not possible within the environmental education center's exhibits gallery, a live animal presence might also be achieved through the use of occasional program animal demonstrations or displays. Another possibility would be to incorporate a publicly accessible live animal "study tank" containing lagoon or estuarine species within or adjacent to the lagoon-level environmental education classroom or wet lab spaces.

The environmental education center's interpretive exhibits should be designed to incorporate dedicated systems and spaces to support programmatic activities within the gallery. These might include storage cabinets for program materials, props and supplies; pull-out or fold-down work surfaces; audiovisual and multimedia equipment and/or hook-ups; seating; and appropriately sized floor areas to gather small groups.

The environmental education center's public reception areas and circulation spaces, exterior as well as interior, will house informational graphics and other media as well as simple flat art-style changing exhibits. In the open-air but roofed and shaded entrance pavilion at the base of the experience pier we will provide welcome and orientation information, visit planning support, and announcements of programs and events. These will be primarily graphical, but interactive multimedia systems may also be employed. The main level lobby and/or adjacent circulation spaces might be designed to incorporate clear surfaces and flexible display systems for simple changing displays of mission-related artworks, photographs, etc. Donor recognition displays may also be installed in the lobby, or possibly at some other prominent location within or directly outside the environmental education center.

Planning directions for the environmental education center's gift shop should consider the possibility of integrating interpretive messaging into both the design and the merchandising of the facility. Quality retail can be an effective extension of the environmental education center's interpretive mission, providing guests and customers with access to tools and information that will enhance their experience of natural resources.

Figure 4.15: Craig Thomas Discovery Center

Portable Interpretive Media

Portable interpretive media are an important tool for informing and engaging visitors to the East End Lagoon Park & Preserve. Portable media are capable of providing in-depth interpretation of the features and natural resources of the preserve without cluttering the site with fixed graphic elements. They are also unusually flexible, giving guests access to only as much information as they want and offering opportunities to provide messages or activities targeted to specific user groups: non-English speakers, families, experts or amateurs, etc.

These media can vary widely in type and complexity, ranging from simple "dive card" style laminated graphics for species or habitat identification, or for "treasure hunt" activities, to field guides or notebooks, to "discovery kits" containing a variety of tools and information. At the other end of the technological spectrum are smart-phones, PDA's, and MP3 players. These offer exceptional adaptability, content capability, and opportunities for engagement and interactivity. An iPhone or iPad device, for example, affords almost unlimited content depth, including sound and moving images, with an accessible and "intuitive" interface that can be layered to allow users to go as deep as they like without being overwhelmed by "too much information" at first glance. Many of these devices also are GPS enabled and therefore "locationally aware," and have the ability to serve as tools for the development of guest-created interactive content (taking photographs, making movies, recording data, etc.) This creates unusual opportunities for ongoing interaction between the Preserve and its regular users in the form of "citizen scientist" style activities.

Interpretive Play

Many key themes and messages of the exhibits for the Park & Preserve and the environmental education center can and should be introduced to younger audiences in the form of interpretive or "adventure" play opportunities. For example, the topic of Barrier Island dynamics might be addressed within the environmental education center using graphics, technical models, and interactive multimedia, while outside it might be explored in the form of a stylized "wet play" environment which engages guests in hands-on, whole-body activities. Interpretive play spaces should be developed as part of the environmental education center site design, including both large-scale elements like the wet play zone mentioned above and simpler, smaller things such as paving changes, embedded objects, and touchable sculptures. The Park & Preserve should also include a dedicated "discovery trail" designed specifically for children.

Figure 4.16: Morton's Arboretum Children's Garden

Figure 4.17: Morton's Arboretum Children's Garden

Identity and Way-finding Signage

The East End Lagoon Park & Preserve will be accessible from multiple locations and will not have any formal perimeter controls. While the environmental education center, with its adjacent parking, will be the primary point of entry for first-time visitors and many regular users, access

may also occur at either of the East Beach parking areas as well as along Apffel Park Drive, Boddeker Road, and Seawall Boulevard. The site's permeable nature should be regarded as an asset, in that it can allow or even encourage casual use of the trails and other resources.

To respond to this condition and capitalize upon the opportunities it provides, a clear and consistent system of site identity and way-finding signage should be developed for the Park & Preserve, including a distinctive and highly recognizable logo or "brand." System components could range from relatively large-scale signage at designated site entry points, to simple directional markers along trails, but all should utilize a common design vocabulary.

At selected "gateway" locations such as along Apffel Park Drive across from Beachtown; the south end of the site at the intersection of Apffel Park Drive and Seawall Boulevard; and the Boddeker Road entrance to East Beach, the East End Lagoon Park & Preserve identity graphics would be combined with interpretive elements and visit planning information to facilitate informed access to the Preserve for those users who do not pass through the environmental education center. The Preserve's trail network would also be directly accessible from these gateways.

Figure 4.18: Way-finding signage example

Self-Directed Activities

The range of self-directed visitor activities anticipated at the Park & Preserve includes walking and hiking, birding and wildlife viewing, recreational and subsistence fishing and shell fishing, exercise and active recreation, swimming, and canoeing or kayaking. Several of these activities offer particular interpretive opportunities, or require special support:

- Fishing and shell fishing opportunities in the Park & Preserve might be enhanced through the provision of bait and tackle and other supplies, either at the environmental education center's shop or at a dedicated satellite facility. Designated access points or fishing locations might help to contain and control these activities, and would need to be signed appropriately. Specialized staff or volunteer-led educational programs, such as occasional "fishing days," might be developed.
- Canoeing and kayaking will require designated put-in and take-out locations, appropriately developed and signed, along with clearly posted guidelines for safe and appropriate behavior. In addition, if the Park & Preserve elects to make personal watercraft available on a rental basis, a boat livery of some sort will need to be constructed within the covered lagoon-level space beneath the environmental education center. Clear information about "safe paddling" practices should be prominently displayed both at the boat livery and at the put-in location, with an emphasis on informing boaters about the dangers of leaving the lagoon. Finally, the interpretive potential of an "aquatic trail" through the lagoon is exciting, with paddle-in viewing blinds and other information and activities developed specifically for paddlers.
- Building upon the community's desire to incorporate opportunities for exercise and active recreation into the design of the Park & Preserve, we would explore the creation of an interpretive "par course," a dedicated running or race-walking trail fitted out with stations which combine environmental education messages with cardiovascular exercise.

Staff or Volunteer-Led Activities

A number of potential "mediated" activities in the Park & Preserve will require infrastructure support would benefit from the development of dedicated informational or interpretive elements:

Figure 4.19: Norfolk Children's Garden

Figure 4.20: Betty Ford Alpine Garden

- Guided nature tours may occur at times when the environmental education center is closed and thus will need an exterior location at which to meet and marshal groups and begin the tour. The open but shaded and weather protected entrance pavilion at the base of the environmental education center's "experience pier" has been designed to serve this function and to accommodate relatively large groups. Interpretative elements in the pavilion will provide both practical information and an introduction to the natural history of the Preserve, and the pavilion will connect directly to the trail system. (Other site gateways will offer similar information but will not provide a sheltered gathering space.
- Programs and classes will need flexible classroom spaces, ideally both indoors and outdoors. Given the overall character of the East End Lagoon experience, these facilities should probably be designed to incorporate simple "wet biology" activities, with appropriate plumbing and finishes. Outdoor classrooms should be roofed and screened, and should have at least one opaque wall. Both types of spaces should incorporate dedicated lockable storage.

To provide as much flexibility as possible, our master plan identifies several alternative enclosed locations for environmental education classes or programs, starting in Phase II of the project. These include an enclosed, shaded and insect-screened (but not climate controlled) program space at the lagoon-level beneath the environmental education center; a flexible interpretive program and activity space within the climate controlled exhibits gallery; and a multipurpose room that could be configured to accommodate either programs or events. Depending on how the exhibits gallery and the multipurpose room are ultimately designed, it seems likely the wet biology activities would be restricted to the lagoon-level space.

- Community meetings and special events held at the environmental education center will require adequate gathering and support areas. This would be accomplished through cross-utilization of the multipurpose room.
- Volunteer opportunities and apprenticeships will play an increasingly significant role in the Park & Preserve's operations. An active volunteer corps, drawn from across the spectrum of Galveston residents, will form the backbone of environmental education programming at the Preserve, and volunteers may

also perform other critical functions ranging from assisting with habitat restoration efforts to staffing the gift and book shop. Volunteers will need to be supported with informal meeting and “break room” spaces, as well as storage for their personal effects.

- Apprenticeships are another potentially valuable tool for extending the range and impact of the Park & Preserve’s programs. Students at Texas A&M Galveston or other local higher education institutions might invited to conduct field research activities in the Park & Preserve, and possibly to enlist younger students as support staff. Again, we will need to make appropriate provisions for support spaces for these kinds of activities.