

National Park Service
U.S. Department of the Interior
Everglades National Park
Florida



Gulf Coast Visitors Contact Station and Ranger Station Alternatives Analysis and Pre-Design PMIS 156680

August 2012



Indefinite Quantity Contract
No. 1443C2000091000
Task Order No. P11PD21311
Gulf Coast District Visitors Contact Station and Ranger Station
Everglades National Park, Florida
EVER-156680

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1.0 executive summary



Historic Chokoloskee post office

The National Park Service (NPS) is reconsidering how best to improve its aging Gulf Coast facilities at Everglades City in light of government-wide funding cutbacks and concerns about new construction in coastal sites, which are highly susceptible to major storms and flooding.

The Gulf Coast Visitor Center, Ranger Station and Commercial Services Facility are located in Everglades City, Florida. Everglades City is a central location for visiting Everglades National Park (ENP), Big Cypress National Preserve (BNP) and other nearby natural areas such as Ten Thousand Islands National Wildlife Refuge, Fakahatchee Strand State Park, and Rookery Bay National Estuarine Research Reserve. The park’s Gulf Coast site provides primary access to the Ten Thousand Islands and Wilderness Waterway backcountry.

The existing facilities and related infrastructure were constructed in 1966 and have undergone minimal changes and few improvements over the years. These facilities have become functionally obsolete, structurally unsound, and are at-risk in this low-lying coastal setting. This location is the primary operations center for all visitor and staff activities in the Gulf Coast District of ENP.

Among other important elements of the Everglades National Park Protection and Expansion Act of 1989, the law authorized and directed the Secretary of Interior to expedite construction of a new visitor center at Everglades City and to designate it the “Marjory Stoneman Douglas Center.” More than 20 years later this center has yet to be funded or built, and in light of the current and anticipated budget outlook, the NPS is looking for ways to fulfill this commitment in a cost-effective and sustainable way.

National Park Service leadership is committed to projects that are smartly planned, right-sized, modest, efficient, sustainable, durable, responsive to climate change predictions and innovative in providing meaningful visitor experiences. The project team, led by NPS Denver Service Center and ENP park leadership, responded to these agency directives by engaging in an integrated and interactive project process and presents a “Preferred Alternative” for the proposed development of the Marjorie Stoneman Douglas Center.

This proposed development reflects resulted from a series of workshops including site visit, programming workshop, public meeting, design charrette and value analysis which allowed the team to fully vet project opportunities and distill development solutions in keeping with project goals and directives. The resulting preferred alternative limits development to that which is essential. At approximately 3 acres and 4,000 built square feet, this development will efficiently serve the Gulf Coast’s approximate 150,000 annual visitors.

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Early gladesmen making their way through the swamps of the Everglades.

2.1 History, Purpose and Significance of Everglades National Park

Early in the twentieth century, the unique natural and biological features of the Everglades attracted the attention of conservationists, who saw the significant vast resources threatened by increasing development. Prior to the 1880s, seasonal rains and spillover from Lake Okeechobee created a large natural water system in the Everglades. A campaign to drain the Everglades was introduced by Napoleon Bonaparte Broward in his bid for governor in 1904. This accelerated construction of canals between 1905 and 1910 to drain the wetlands and create agricultural lands greatly depleted the wetlands and transformed the landscape of the Everglades.

Between 1915 and 1922, the Ingraham Highway was constructed to connect Homestead with Flamingo. As more people came to southern Florida and development increased, additional water was diverted to canals to supply both farms and urban development and was regulated to control flooding. The diversion of water, coupled with increased pollution, significantly altered the natural water regime that was already impacted by the earlier efforts to drain the wetlands.

As a result of the mass killings of birds in the Everglades by plume hunters, the Audubon Society hired the first game warden in the country in 1902 to protect the Everglades. The Florida Federation of Women’s Clubs lobbied for the establishment of Royal Palm State Park, which was established in 1917; by the 1920s, the National Park Service also supported increasing conservation efforts in the region.

In 1928, the United States Congress passed legislation to investigate the feasibility of creating an Everglades National Park. The Park was authorized by Congress on May 30, 1934, but was not dedicated until 1947, as the authorization coincided with the arrival of the Great Depression and funding for land purchases for the Park was scarce. When the Park was established, it was explicitly stated that it was to be permanently reserved as a wilderness. The park was established to be “...a wilderness where no development...or plan for the entertainment of visitors shall be undertaken which will interfere with the preservation of the unique flora and fauna of the essential primitive natural conditions now prevailing in the area.”

The Purpose of the Park is as “a public park for the benefit of the people. It is set aside as a permanent wilderness preserving essential primitive conditions including the natural abundance, diversity, behavior, and ecological integrity of its flora and fauna.”

“Here are no lofty peaks seeking the sky, no mighty glaciers or rushing streams wearing away the uplifted land. Here is a land, tranquil in its quiet beauty, serving not as the source of water, but as the last receiver of it. To its natural abundance we owe the spectacular plant and animal life that distinguishes this place from all others in our country.”

- President Harry S. Truman, December 6, 1947, at the dedication of Everglades National Park

In November of 1978, the Everglades Wilderness was formally designated; this designation provided legislative protection for approximately 93 percent of the Park.¹ The designation included all of the keys in Florida Bay. The legislation also created a class of wilderness called “submerged marine wilderness” (meaning the bottomlands, but not the water column, are managed as wilderness). This took into account more than 500,000 acres of the navigable waters of the Park, including Florida and Whitewater Bays, the backcountry waters, and the Ten Thousand Islands area along the Gulf Coast. Excluded from the Wilderness designation were lands at the north park boundary that were reserved for Native American use, a corridor along the road to Flamingo, and the existing developed areas, including Flamingo. The name of the wilderness area was changed from Everglades Wilderness to Marjory Stoneman Douglas Wilderness in 1997.

In 1989, Congress passed the Everglades National Park Protection and Expansion Act. The law added 109,600 acres to the northeast corner of the Park to increase the level of protection of the Park’s outstanding natural values, and among other things, authorized the Modified Water Deliveries Project, and directed the NPS to expedite construction of the Marjory Stoneman Douglas Visitor Center in Everglades City.

Today Everglades National Park is a sanctuary for wild animals, plants, birds, and people - including the more than 6 million people who live within a 50-mile driving distance of the Park - in an increasingly urbanized regional landscape.

2.2 History, Purpose and Significance of the Gulf Coast Visitor Station

The Gulf Coast site is a 20-acre administrative site at the edge of the Chokoloskee Bay in Everglade City. It was purchased by the NPS in 1959 for the development of Park administrative and visitor use facilities. The existing 4,200 square foot wood-frame visitor center facility was constructed in 1966. In 1989, Congress directed the park to build the Marjory Stoneman Douglas Visitor Center at the Gulf Coast site. Planning studies and environmental assessments were completed in 1991, but have not been implemented to date. A structural evaluation in 2001 identified the potential for a structural failure of the wood pile system due to deterioration below the soil line. Remedial work extended the life of the facility to 2011. The building was not designed to withstand hurricane force winds; most of the damage to the facilities to date has been wind induced. In addition, there has been minor flooding at the site from hurricanes or tropical depressions coupled with high tides and westerly winds.

The Gulf Coast Visitor Center, Ranger Station, and commercial services facility is the primary operations center for all visitor activities in this district. The Gulf Coast facility is a gateway site providing primary access to the popular Wilderness Waterway backcountry canoe trail. The facility also provides visitor orientation, excursion services, canoe/kayak rentals, food vending, retail sales, visitor education and interpretation, staging and permitting for backcountry camping, and visitor safety and resource protection operations. The building has public restrooms, an elevator, plazas, outdoor seating, shade structure, information kiosks and interior/ exterior storage space to support all activities.

Visitors come to the Park for an experience that cannot be found anywhere else in the world. A wide variety of activities await and include fishing, boating, kayaking, canoeing, birding, hiking, camping, biking, and wildlife viewing. The Park’s diversity attracts visitors of all types from all over the world, with interests as varied as they are.

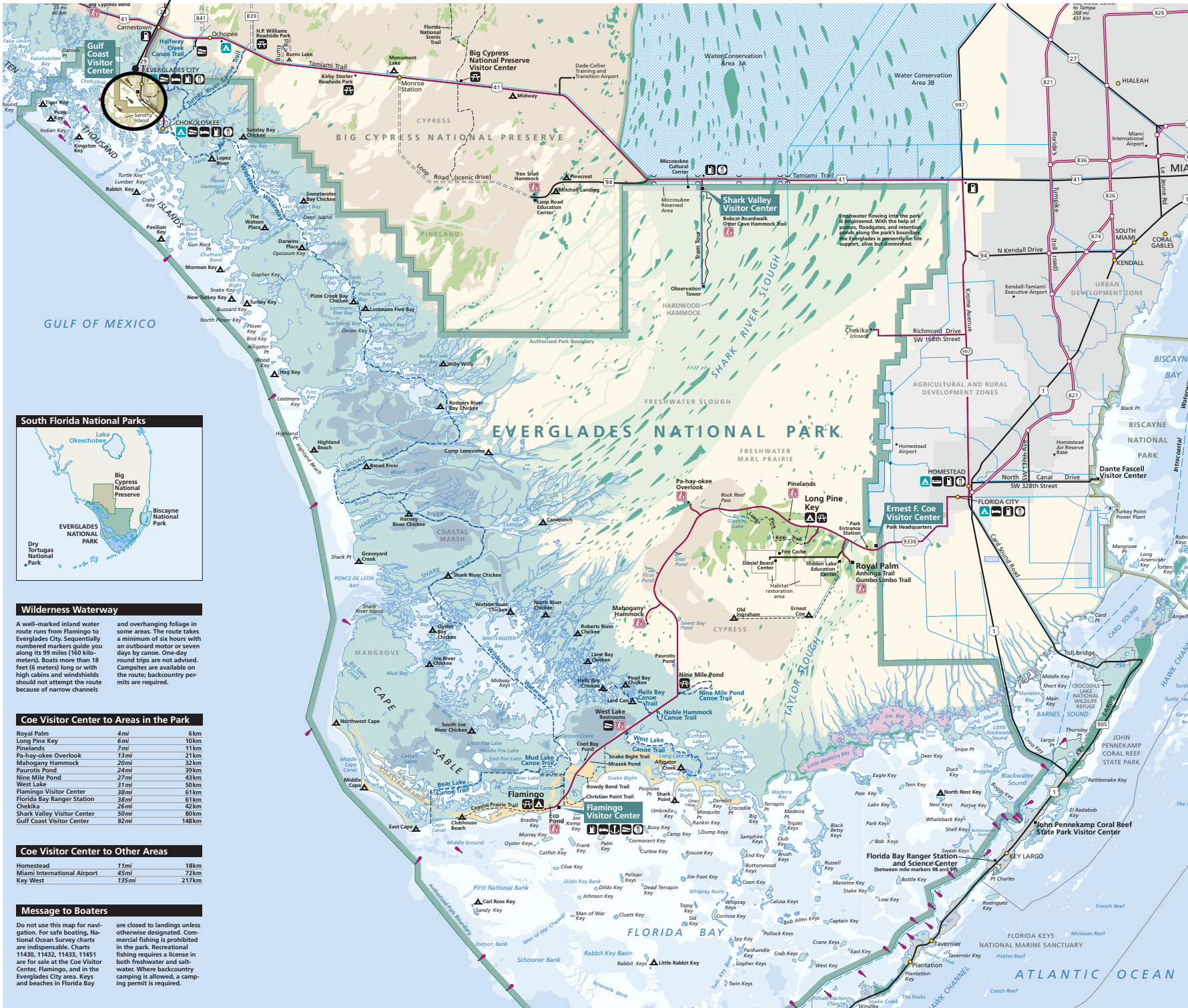


Aerial images of the Gulf Coast Visitor Contact Station and Ranger Station.

¹ Today, 86 percent of the Park is dedicated wilderness. The percentage has decreased as additional lands were acquired for the Park.

3.0 existing conditions

Gulf Coast Visitors Contact Station and Ranger Station



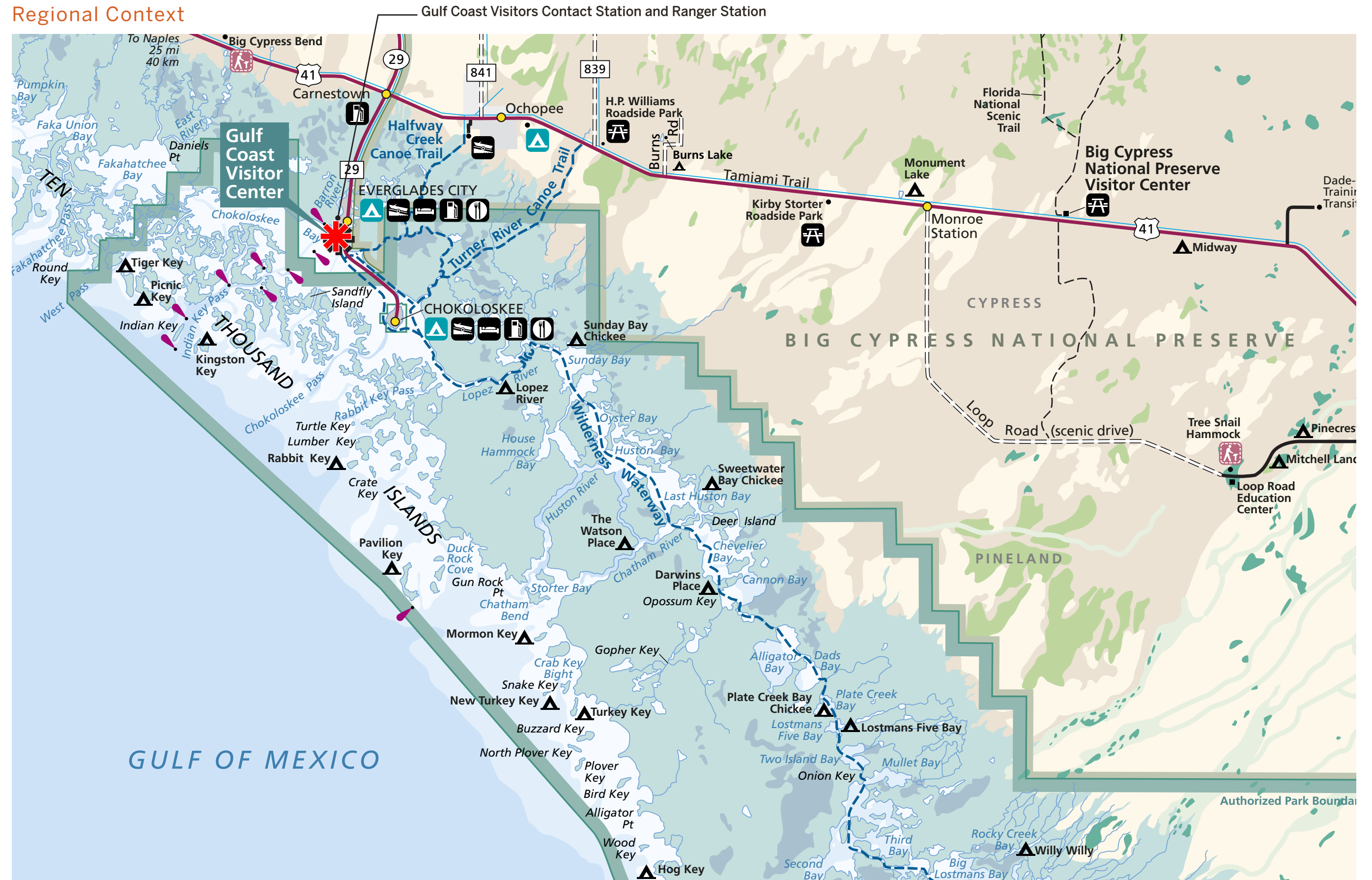
The Gulf Coast site is a 20-acre administrative site at the edge of the Chokoloskee Bay in southern Florida. The site is within the Everglades City boundary and is outside the Everglades National Park boundary. The 1979 Everglades Master Plan states that the Gulf Coast site will be one of five areas of concentrated development on the edge of the Park. The other 4 development areas are headquarters, Flamingo, Shark Valley, and Key Largo. Development is limited to the periphery of the Park to preserve the Park's wilderness and wildlife.

Everglades City proclaims itself as the Gateway to the Ten Thousand Islands and is good base location to visit Big Cypress National Preserve, Everglades National Park, and Fakahatchee Strand State Preserve. The primary activity at the Gulf Coast site is taking a boat tour to the Ten Thousand Islands and mangrove wilderness sections of the Park. The well-marked inland Wilderness Waterway canoe trail extends from the Gulf Coast site to Flamingo at the southern tip of the state.

The site is accessed via County Road 29, which extends south along the coast. The site is only five feet above sea level and contains parking areas, a two-story visitor center/ranger station, boat ramp, and boat basin. A concessioner uses the boat basin as a launching point for the boat tours to the Ten Thousand Islands mangrove wilderness. The NPS also uses the Gulf Coast boat basin as a central docking facility for ranger patrol activities along the coast and for maintenance crews and base of operation for resource staff. The remainder of the site consists of mowed lawn and scattered trees.

Everglades National Park, Source: NPS

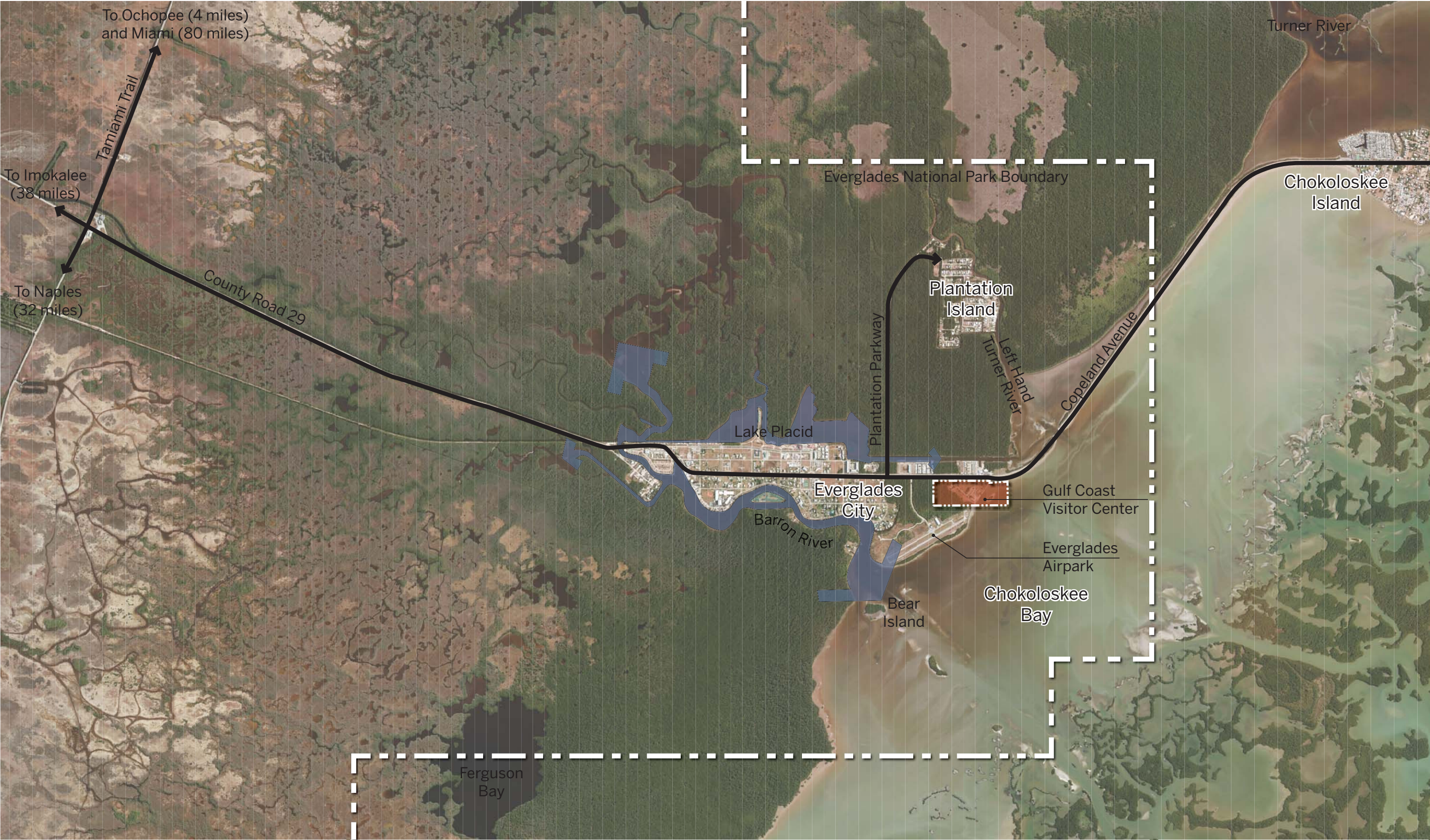
Regional Context



Gulf Coast Visitors Center Area Enlarged Map, Source: NPS

Gulf Coast Visitors Contact Station and Ranger Station - Everglades National Park
Alternatives Analysis and Pre-Design - PMIS 156680

Regional Context



Existing Site Plan and Context



3.1 Site Analysis and Context

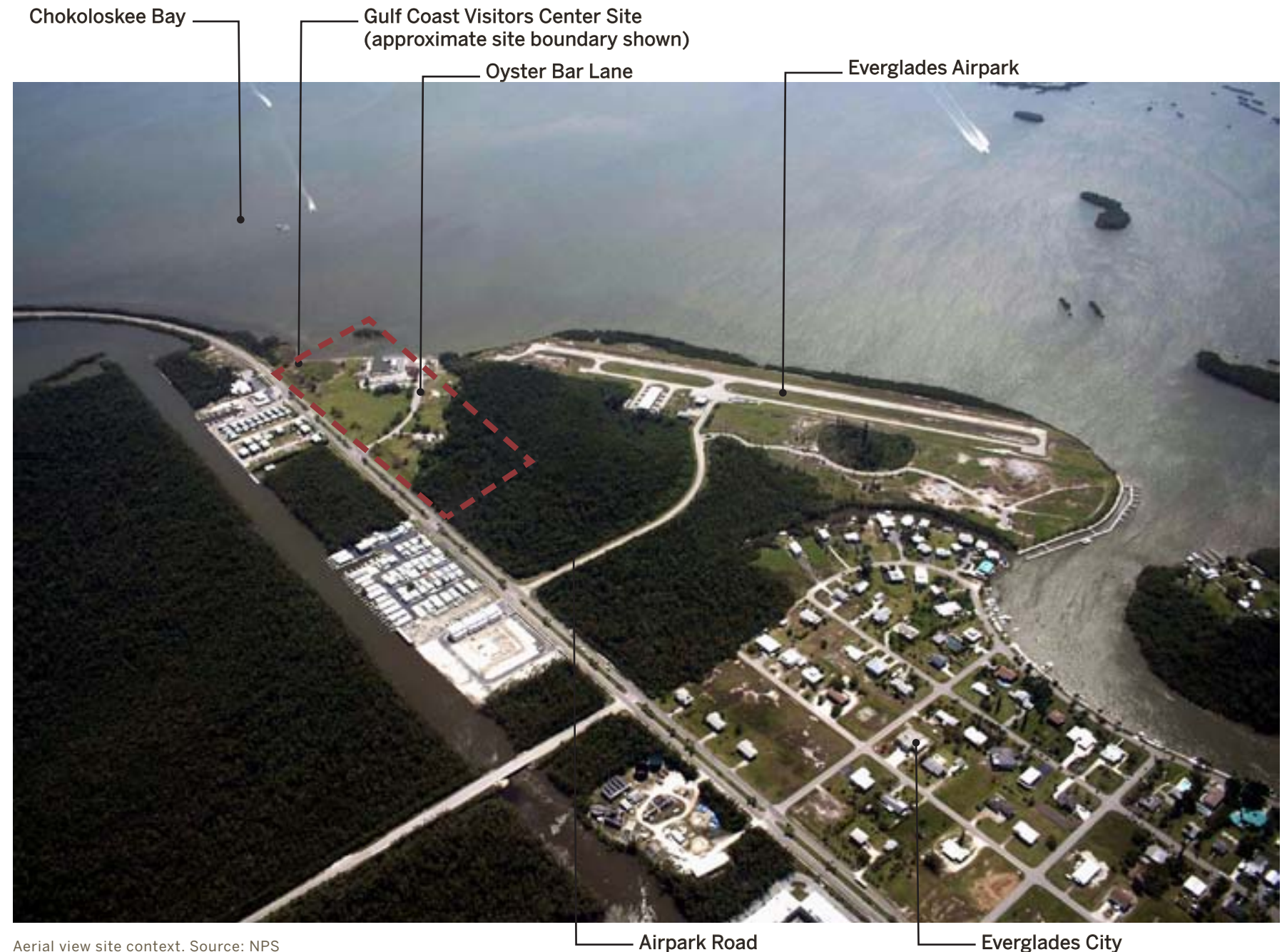
The proposed site is located in Everglades City, Florida which is in close proximity to both Everglades National Park and Big Cypress National Preserve. The Gulf Coast site is an existing visitor contact location and includes marina, visitor center and maintenance facilities. The Gulf Coast site is uniquely large, 20 acres, adjacent to this more densely developed community and is removed visually and physically by distance and by vegetated areas.

The primary contextual influences and resources for the redevelopment of the site are the features of Everglades City and Chokoloskee Island. The influence of character found throughout south Florida is to be considered but is secondary to the immediate surroundings. In addition, National Park Service requirements for coastal developments, including regional and developing technologies for these areas, will provide direction for the design.

As is consistent in this south Florida area, the terrain is generally flat and the focus is on waterfront activities. Streets are narrow and lined with palm trees.

The development of Everglades City community appears to be a natural evolution of its history as a fishing village beginning in the late 1800's. Development within the City is primarily residential with small scale structures supported by small commercial developments along the main entry road. Development in this town of 800 is fairly dense as a result of the adjacency and challenges of developing between gulf access waterfronts on the Barron River and inland marshes and swamps. Civic developments circle the town center and are a slightly grander scale and reflect early to mid century planning and design.

Within Everglades City, there is little consistency in the character of the newer developments save the proliferation of pitched roofs and raised foundations as a pragmatic approach to the climatic influences of extreme heat and stormy seasons. However, there is some consistency, charm and historical precedence in the more historic architecture in the area. The Florida “cracker” house aesthetic of simple, practical forms made of indigenous materials, free of adornment provide insights into vernacular climatic response. The proposed redevelopment of the Gulf Coast site is to take from this vernacular charm to reflect the utilitarian nature of the facility and the practicality of the NPS.



Aerial view site context. Source: NPS

3.2 Project Description

This primary purpose of this project is to replace the functionally and structurally obsolete existing visitor center with a redeveloped site and a new visitor contact building, which also house critical district operations for interpretation and maintenance. A variety of site program opportunities are under study for the development.

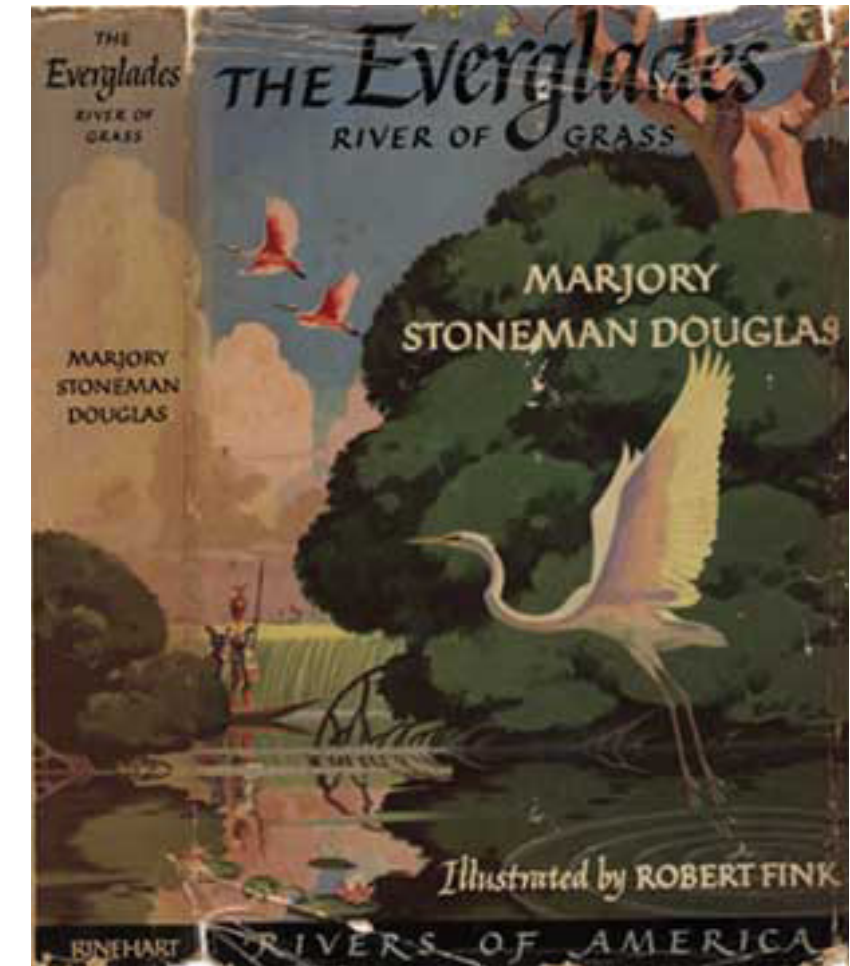
The Gulf Coast campus (comprised of a Visitor Center, Ranger Station, and commercial services facility) is the primary operations center for all visitor activities in this district. The facility provides visitor orientation, excursion services, canoe/kayak rentals, food vending, retail sales, visitor education and interpretation, staging and permitting for backcountry camping, and visitor safety and resources protection operations. The building has public restrooms, an elevator, plazas, outdoor seating, shade structure, information kiosks and interior/exterior storage space to support all activities.

This project will eliminate a functionally and structurally obsolete facility and associated deferred maintenance. It will allow for continued operational support without the possibility of a long term disruption to services due to the impact of a hurricane. Primary to the success of the design are the programming requirements associated with the small marina basin. Overcrowding in this area, shallow water levels and challenges with boat and canoe launching are central to the site design.

The project will result in the separation of public and administrative support functions and allow the park to provide educational programs on site. It will eliminate congestion, accessibility, and safety issues related to boating operations and will allow excursion services to increase by an estimated 40%, providing a viable, long term business opportunity. The interpretive exhibits and media will adequately address the areas significant themes.

The new environmentally responsible facility will be a fitting tribute to Marjory Stoneman Douglas, the writer and environmentalist who for decades championed the defense of the Everglades. The built facilities will house multiple functions in an efficient manner and will capitalize on combined interior and exterior protected space. It is envisioned to achieve net-zero energy use from a combination of reduced loads (such as innovative use of unconditioned space) and renewable energy technologies. A photovoltaic system is envisioned, but the final balance of multiple technologies will be determined during the integrated design process.

The construction of a new visitor facility adjacent to existing Gulf Coast facilities will provide a safe and enjoyable opportunity for visitors to experience, appreciate, and understand the significance of park resources, and aid in the preservation of park resources and wilderness character by confining development to a single area on the periphery of the park.



Marjorie Stoneman Douglas' famous book, which redefined the popular perception of the Everglades as a treasured river instead of a worthless swamp



Concessioner boat giving a tour of the Everglades to visitors

3.3 Existing Conditions and Resources

A site visit was conducted with the design team and client group over two days in September 2011 and was followed with a design charrette at Everglades National Park in October 2011. A general review and analysis of the site and architecture was conducted at that time. The following pages reflect these findings.



Onsite meeting with NPS Denver Service Center staff, NPS Everglades staff and the consultant team



Meeting with NPS Denver Service Center Staff, NPS Everglades staff and the consultant team at Big Cypress Welcome Center

Topography

The site is located on filled land that is approximately 4 to 5 feet above mean sea level (msl). It is completely within the coastal high hazard area, which is an area where high winds, high waves, and tidal flooding can be expected. The site's combined storm surge and wave elevation is 13 feet above msl.

Vegetation

The Park is a Ramsar Wetland of International Significance and an International Biosphere Reserve. The Gulf Coast represents an amazing complex of estuarine habitats and mangrove forests that support a diverse number of species. Plants derived from the West Indian tropics predominate in the southern part of the Park and near the coasts. Mangrove forests in the Park consist mainly of red, white, and black mangroves along with buttonwood species. The estuarine habitat is the area along the coast where freshwater and saltwater mixing occurs and salinity fluctuates in response to daily tidal flushing and the influences of seasonal tides and rainfall.

Adjacent to the developed area, on the northwest portion of the site, is a young stand of white mangroves bordered by a narrow strip of disturbed land heavily infested with Schinus trees. The remainder of the area is mowed lawn with scattered trees.



Existing site vegetation

Hydrology

Water is the dominant resource at the Park, which is the hydrological connection between central Florida's freshwater ecosystem and the marine systems of Florida Bay and the Gulf of Mexico. The Park preserves the remnants of a nationally significant hydrologic resource that sustains South Florida's human population. Annual rainfall is about 50 inches in the Park.

The resources in the Gulf Coast are unique because the coastal creek systems that feed the coast are diverse, well-developed, and expansive. Other districts in the Park have fewer mangrove creeks and tidally-influenced coastal wetlands. Any runoff from the site flows into Chokoloskee Bay. At the site, the clay soils are dense and moist with very little groundwater percolation above 8 feet.

Soils

The site is primarily filled land built up in the past 30+ years by dredging sand into a swampy area previously used as a city dump. In general, the soil profile at the site consists of 0' to 4' of clean fill and 4' to 10' of undisturbed greenish gray marine clay mottled with sea shells and natural peat. An old trash landfill was discovered at the visitor center site in 1990 during an environmental audit of the site. The old landfill consists of approximately 6,000 to 10,000 tons of trash material, consisting mostly of burnt wood and glass.

Archeology

An earthen mound some 175 feet northeast of the present visitor center has been investigated and determined to have no archeological value. An archeological evaluation completed in 1985 covered areas then planned for a new concession building and new residences; no evidence of archeological resources was found.

No National Register sites or properties are in the Gulf Coast site developed area (as of 1991). Any further development of the site will require the following related to archaeology: 1) A SEAC/SHPO site file/manuscript survey; 2) A systematic survey of the uninventoried areas of the developed area; 3) Mapping, and sufficient testing of the dump site to determine site boundaries, depositional integrity, and significance; 4) A report including completed FL site forms, survey log including evaluations of eligibility; 5) A GIS map including site polygons as well as surveyed areas; and 6) Update ASMIS records including site condition and manuscript reference.

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Circulation

A short southerly entrance road provides vehicular access to the site from Copeland Road (County Road 29). Pedestrian and bicycle facilities include a bike/pedestrian trail along County Road 29, a short interpretive trail running east along the water's edge from the visitor center, and a social trail from the visitor center north to the adjacent retail development across Copeland Road (County Road 29).

Two spur roads branching northwest from the entrance road, just south of the site entrance off County Road 29, provide access to employee residences. Paved bus and visitor car parking (62 spaces) for visitor center and concessioner use are provided north of the visitor center building. Unpaved (grass) parking for canoe launching is provided west of the visitor center.

Land Use

The site is located within Everglades City, a small town located 30 minutes from Naples. The Everglades City airstrip is located just northwest of the site, as is an old airport dump site (about 1,000 feet west of the site). Just to the east of the site, across Copeland Road (County Road 29), is a small retail and residential development. NPS also owns a small detached residential site about a quarter mile north of the Gulf Coast administrative site. Mangrove forest land abuts the site to the north/northwest and northeast.

Density

There is low density development at the site presently; the adjacent area is mostly forested with pockets of low density residential, retail, and commercial (airstrip) development.

Views/Vistas

Views from the site include Chokoloskee Bay to the south and west; lawn and scattered trees to the east with a backdrop of existing commercial development and along the entrance road; and forest to the north and northwest.

Climate

The climate in the Everglades is characterized by two main seasons – a dry season from November through April and a hot, humid, rainy season from May through October. The area is subject to tropical hurricanes and depressions. Mean monthly temperatures range in the low to mid 60s during winter and the mid 80s to low 90s during summer.



View of visitors center looking west



View through mangroves



Visitors at play

Site Analysis and Context - Topography/Hydrology



Site Analysis and Context - Circulation/Views/Site Elements



Site Spatial Analysis



Existing Site Photographs Key Map



Existing Site Photographs



1. Site entry; view looking south



2. Existing offsite pedestrian path; Copeland Road looking south



3. Site entry; view looking north



4. Copeland Road; looking north towards site entry



5. View into site looking west from Copeland Road



6. View into site looking west



7. Site entry road; view looking west



8. Employee housing; view looking north



9. Existing RV pads; view looking west



10. Entry road looking west towards bus parking



11. Site entry looking west towards maintenance



12. Parking area/entry; view looking southeast

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Existing Site Photographs



13. Existing info kiosk; view looking south



14. Existing parking; view looking east



15. Existing parking; view looking northwest



16. Existing traffic counter



17. Existing kiosks; view looking west



18. Along marina basin; view looking south



19. Existing picnic shelter; view looking west



20. Existing site conditions; view looking southeast



21. Existing bulkhead; view looking southeast



22. Existing bulkhead; view looking north



23. Existing fueling station; view looking east



24. Existing boat hoist

Existing Site Photographs



25. Existing rip rap shoreline; view looking north



26. Maintenance yard & visitors center looking north



27. Maintenance building & secured parking/storage area; view looking northwest



28. Concessioner canoe storage/launch; view looking north



29. Canoe launch area; view looking northeast



30. Maintenance & canoe launch; view looking west



31. Overflow/canoe parking; view looking east



32. Marina



33. Marina



34. Maintenance Building



35. Visitor Center

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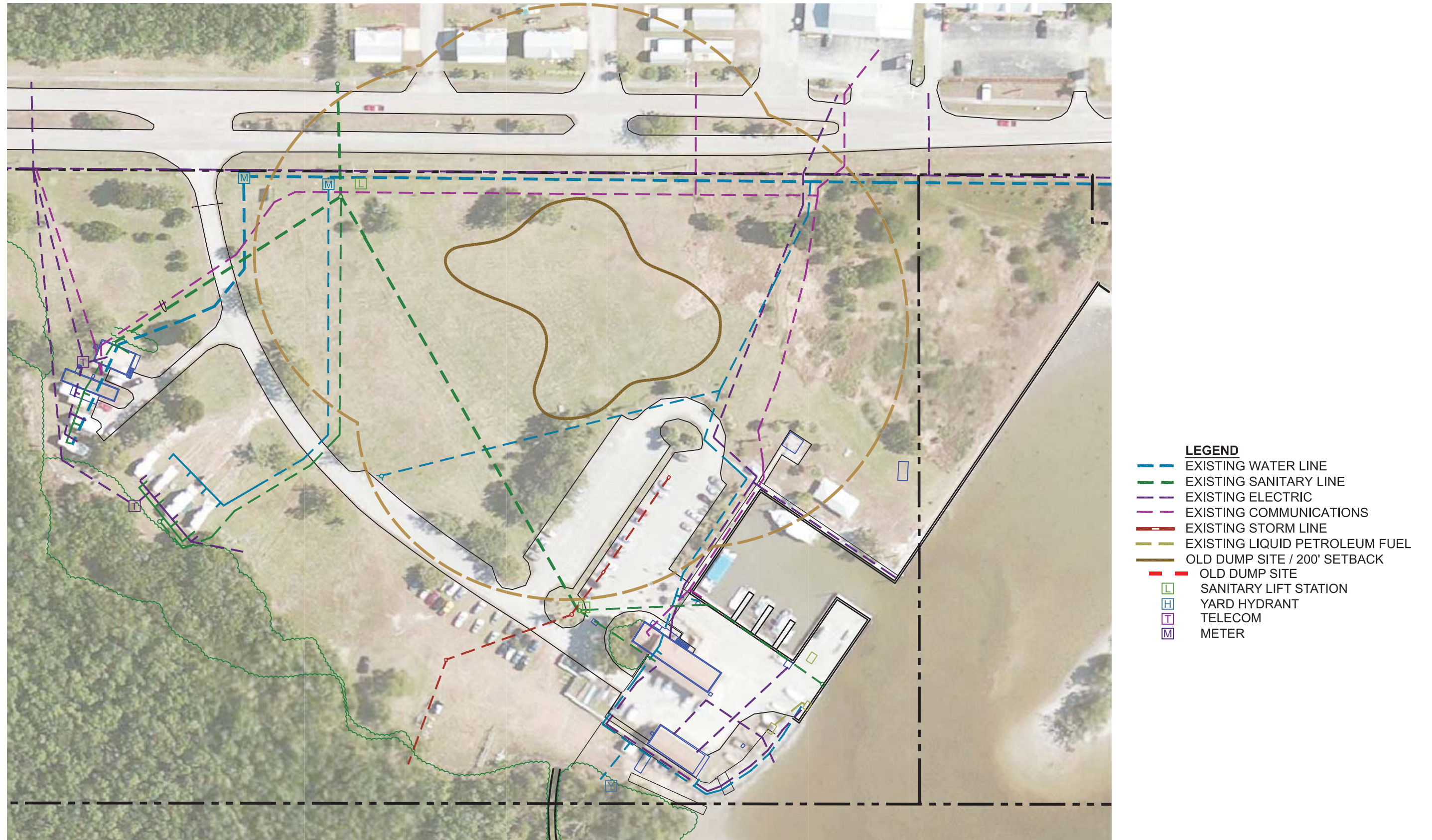
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Existing Site Utility Plan



3.4 Existing Utility Infrastructure Assessment

The following is a brief list of findings based on an initial assessment of the existing utility infrastructure conditions. This assessment is intended to facilitate discussions and understanding of need. The existing utilities, in general, are expected to be ultimately replaced and all proposed activities shall occur outside of the 200’ setback from the old waste disposal site if possible, but not required. All on-site utilities are maintained by the NPS.

Potable Water

- Service to RV camp sites (no backflow was located)
- Hose bibs located near boat launch area for visitor use
- Existing water mains and service line size is unknown (assumed to be too small to meet future demands)
- Supplied by Everglades City [three points of service (meters)]
- Non-loop system with long dead end lines with potential for low pressure, volume, and water quality issues
- Water line runs through old landfill (dump site) potential contamination?
- No apparent back flow preventers or anti-siphon devices on hose bibs
- There were historical concerns regarding City’s raw water supply experiencing salt water intrusion

Sanitary Sewer

- Hookups at RV camp sites
- Gravity system requires pump stations to connect to municipal system
- On-site City-owned grinder lift station near Copeland Avenue (Country Road 29)

Liquid Petroleum Fuel

- (2) existing 1,000 gal. storage tanks located near marina basin for boat fueling.

Electric Power

- Service to RV camp sites
- Two points of service (transformers) from overhead supply lines along Copeland Avenue (Country Road 29)
- All on-site electric lines are underground.

Communications

- Radio antennas (2) at visitor center and maintenance building
- Weather Station
- Coast Guard Radio Antenna
- Underground phone lines run to housing and visitor buildings
- Underground cable TV to housing area

Stormwater

- High groundwater with frequently standing water
- The majority of site is approximately at elevation 3.5’ to 4.5’ (within flood prone elevation and zone)
- Runoff drains to bay with little to no treatment.

Solid Waste

- Waste Management collection service with recycling.

Old Dump Site

- Hazardous Waste Survey and Testing performed in July of 1990.
- There are numerous state regulations for the monitoring of the disposal site. Have these actions been carried out and permits prepared?
- The old landfill is located at heart of site with 200’ setback buffer encompassing the majority of the site’s interior. Only the perimeter (including the visitor center, marina, maintenance facility and housing areas) are located outside of this zone.
- Depending on findings of monitoring wells and soil, water and air quality studies of the remaining landfill solid waste, further action may be required to mitigate any issues.
- Construction activities on, around or near the disposal site shall be limited and caution used when excavating to prevent disturbing the cap and unearthing the waste. In addition, any construction activities require permitting through the FDEP.
- No utilities shall cross or impact the landfill cap.
- The encouragement or introduction of access to and on the disposal site shall be restricted or prohibited where possible.
- Soil and water test results of borings around the disposal area show excessive levels of volatile compounds, heavy metals and various other toxins and contaminants, which indicates that the water quality is severely impacted from this historic action.
- Heavy and potentially toxic debris was found in test borings across the site at depths as shallow as 2-3 feet.



Residential Context: Newer Development



Commercial Context: Bed and Breakfast



Civic Context: Historic "Bank of Everglades Building"

3.5 Existing Building Character

Scale

The Everglades City community is primarily one and two story structures, typically on raised foundations with pitched roofs. Building heights typically do not exceed about 25'. The predominant structures are residential, smaller in footprint and scale typical of a historic fishing village. Historic commercial structures, such as shorefront lodges, maintain the residential scale and raised foundation. More modern commercial structures are single story built on grade. Flat roof civic structures with taller ceiling heights (and therefore overall taller building heights) and broader footprints are typically limited to two stories.

The existing Gulf Coast buildings are consistent with the residential smaller scale structures. These buildings are two stories in height and are on raised piles with simple rectangular footprints and pitched roofs.

Form/Shape

The buildings express the evolution of Florida building including classically symmetrical and simple forms of cracker, shotgun, dog trot and foursquare vernacular building with pitched roofs and extensive porches. Additionally, building forms are seen in the community and include ultra simple mid century angular forms as well as contemporary adaptations of historical forms. Typical footprints incorporate narrow and long proportions to facilitate cross ventilation.

The predominant vertical form of local residential buildings comes from pitches roofed structures with extensive covered porches sitting atop raised foundations. These forms evolved from passive design strategies to augment shade and air flow. Cupolas and clerestory windows are seen. With the introduction of air conditioning, fully enclosed indoor spaces have become more prevalent. Under building space, once screened and inhabited, has become primary space for storage and protection of boats, automobiles and personal goods.

Civic building forms express more of early century and mid century simple forms with minimal adornment and flat roofs. Protected exterior porches are not incorporated. Existing Gulf Coast building forms are consistent with Everglades City residential forms, narrow/long footprints with pitched roofs. However, these buildings do not incorporate shading strategies at windows, porches or protected exterior space.

Circulation/Entry

Entry to buildings depends on the height of the raised foundations. Those nearer the ground plane express entries at the front of the building typically in conjunction with large front porches. Higher buildings incorporate the stair and entry more central to the structure. Entry at the Gulf Coast buildings is via attached stairs and elevator and do not incorporate usable or functional porch areas. Entry stairs and elevators are limited to functional uses and actually serve to block views and breezes to the site.

Openings

Window areas are generous to provide access to views and particularly to breezes. Typical windows are operable in punched openings. Larger windows are typically smaller units ganged together. Intentional placement of windows is crucial in this climate. Strategic shading strategies are required in this climate and include deeper overhangs as well as shutters. Protection from hurricane winds and rain and have evolved window units into more robust construction with details that incorporate protection screens and shutters in a new way. Gulf Coast buildings seem to have fewer windows and less access to daylight and breezes than typical residential windows.

Materials/Finishes

Traditional building materials include wood siding, asphalt shingles, metal seamed roofing, wood construction with either wood pile or load bearing masonry pier raised foundations. Judicious use of local limerock is present. Civic buildings and newer construction incorporate a more frequent use of stucco as a wall finish material. Gulf Cost buildings incorporate a board and batten version of wood siding as well as asphalt shingles. Wood pile foundations have been enclosed by wood siding construction.

4.0 development program



View from Marco Island

Programming for the Gulf Coast Visitor Services site was conducted in two separate sessions with NPS representatives, park leadership and staff and design team. Project kick off and initial programming took place in September 2011. During this session, past programs and current program options were reviewed and evaluated. Representatives from WASO, SERO, DSC and ENP considered various overall strategies for development of the site and to determine functional program areas that must be accommodated on site.

Development in ENP is restricted to five locations, including this location, which requires efficient co-location of Visitor Services, Administration, Operations and Concessions throughout the park. At Gulf Coast, the existing program areas include Visitor Services, District Operations for Maintenance, Law Enforcement and Interpretation and Concessions Operations.

To ensure redevelopment of this site is efficient and responsible, each function was addressed for onsite requirements. It was determined that the district maintenance operations should be relocated to the existing Big Cypress National Preserve maintenance facility where site area is available within 6 miles. Consideration was given to locating concessioner operations and administration offsite in nearby Everglades City, but this was rejected to preserve quality visitor experience.

In March 2012, the project team regrouped to confirm development direction and to assemble detailed design data. The following development program assembles this data into a site and building program. The building program is the result of consolidating models from the WASO Facility Model (Admin, Visitor Center and Comfort Station) into a single building program. The building program as shown is approved by WASO and SERO.

4.1 Site Program

Program Area		Functional Requirements/Description	New	Existing	Quantity of Structures	Total Area Square Feet (SF)	Functional Relationship	Limitations	Interpretive Programming
Overall Site and Utilities									
1	Roadways and Vehicular Circulation	Maintain existing roadway patterns. Utilize existing roadways and provide roadway improvements to accommodate new development and improve circulation. Accommodate vehicles, boat trailers, pedestrians and busses/passenger vans.	o	o	NA	69,000	Provides site entry and connects all site use areas	Desire to utilize existing roads and parking areas	Not Applicable (NA)
2	Pathways and Pedestrian Circulation	Provide safe and enjoyable pedestrian connections throughout the GCVC site to accommodate new development and to improve circulation. Provide accessible connections to existing and planned services and amenities. Provide pedestrian crossings at main circulation routes.	o	o	NA	4,000	Connects all site use areas and connection to off-site	Develop for universal accessibility	Yes
3	Pedestrian Trails	Improve and complete circulation paths and trails as appropriate for recreation and nature/interpretive hikes.	o	o	NA	1,500	Connects natural areas to the site pedestrian circulation	Develop for ABA Accessibility compliance	Yes
4	Site Wayfinding Signage	Provide new wayfinding signage throughout the site per NPS standards.	o		15	NA	Locate at appropriate locations throughout site	NA	NA
5	Site Lighting	Provide minimal lighting throughout the site for safety at roadways and pedestrian pathways. All fixtures must be dark sky compliant.	o		20	NA	Locate at appropriate locations throughout site for security and wayfinding	Dark sky compliant fixtures	NA
6	Interpretive Signage	Interpretive program to be determined. Areas on the preferred alternative are called out for potential interpretative areas.	o		TBD	NA	Locate at appropriate locations throughout site based on interpretive program	NA	Yes
7	Stormwater Management	Implement best management practices (BMP) where practical. Remove and replace existing stormwater conveyance with bio-swales and detention ponds for improved water quality prior to discharge. Implement runoff water quality measures (BMPs) at all basins and shorelines to intercept runoff for treatment.	o	o	NA	60,000 +/- Refer to Utility Section	Locate at appropriate locations throughout site	NA	NA
8	Potable Water	Extend existing service to new facilities. Loop water system to improve water quality, pressure, and flow to meet future demands. Supplement existing system by utilizing greywater and rainwater harvesting systems where practical for non-potable uses such as irrigation and vehicle / boat washing water. Remove or abandon lines crossing old dump site, per masterplan.	o	o	NA	NA	Locate to serve buildings	NA	NA
9	Sanitary Sewer	Extend existing service to new facilities. Relocate existing lines at proposed developments. Upgrade existing collection system, as needed to meet future demands, including new grinder lift station. Remove or abandon lines crossing old dump site, per masterplan.	o	o	NA	NA	Locate to serve buildings	NA	NA
10	Electric Power	Extend existing service to new facilities. Relocate existing lines at proposed developments. Supplement existing system by utilizing solar power generation where practical. Upgrade existing system, as needed to meet future demands including new primary services, transformers and secondary service lines. Remove or abandon lines crossing old dump site, per masterplan.	o	o	NA	NA	Locate to serve buildings and site needs	NA	NA
11	Telecom/Cable TV/Wi-Fi	Extend existing service to new facilities. Upgrades recommended including Wi-Fi. Identify Coast Guard and other services present on site that must remain (towers, etc.)	o	o	NA	NA	Locate to serve buildings and site needs	NA	NA
12	Fire Suppression	All new and renovated buildings to be fire sprinkled. Confirm hydrant locations for proposed new construction.	o	o	NA	NA	Locate to serve buildings and site needs	NA	NA
13	Liquid Petroleum Fuel	The existing containment and distribution systems will remain on site, however, the locations may be modified to accommodate the masterplan. Additional spill prevention and containment systems are recommended to protect the sensitive ecosystem and Outstanding Florida Waters.			NA	NA	Locate to serve buildings and site needs	NA	NA
Site Subtotals					35	74,500			
Marina Area									

Program Area		Functional Requirements/Description	New	Existing	Quantity of Structures	Total Area Square Feet (SF)	Functional Relationship	Limitations	Interpretive Programming
1	Entry Monument Signage	Provide entry signage to demarcate the NPS Marina and Visitors Center Area.	o	o	1	NA	Locate adjacent to Marina Area	NA	NA
2	Roadways, Vehicular Circulation, and Parking	Maintain existing historic roadway patterns. Modify site paving if necessary to accommodate turning radii for trailers and trucks. (4) government vehicle parking stalls.	o	o	4 - Cars 4 - Trailers	21,500	Locate adjacent to marina for NPS use on existing roads and parking if possible.	NA	NA
3	Site Landscape	Provide dense landscape buffer along east edge of marina parking lot to screen view of fuel service operations from historic area. Maintain and/or recreate historic landscape patterns.	o	o	NA	400	Locate at appropriate locations throughout as required for aesthetics, interpretation, erosion control and visitor comfort	Plants shall be native or vernacular to Everglades National Park	Yes
4	Site Furnishings	Provide benches (4+/-), trash receptacles (2+/-), recycle bins (1) and ash urns (2) throughout area.	o			NA	Locate at appropriate locations throughout the site as required visitor comfort	NA	NA
5	Pedestrian Circulation	Provide pedestrian pathways throughout site. Provide accessible connections to the site Marina, Visitor Center, Canoe Launch as well as to planned pedestrian circulation throughout the site.	o	o	NA	NA no public access	Connects all site use areas and connection to off-site	Develop for universal accessibility	Yes
Marina Area Subtotals					4 - Cars 4 - Trailers	21,900			
Visitor Center Area									
1	Roadways and Vehicular Circulation	Adjust roadways for improved wayfinding; accommodate improved pedestrian access.	o	o	NA	In Overall Site Quantity	Locate adjacent to Visitor Center	NA	NA
2	Visitor Center Parking Lot	Lot to accommodate parking for visitor center, and marina. Provide vehicle parking only (no trailers) with several spaces for government vehicles and a drop off area for busses and/or passenger vans.	o	o	117 - Cars 2 - Trailers	43,000	Locate adjacent to Visitor Center and Kayak/Canoe launch		
3	Public Common Area and Plazas	Area outside of the visitors center and along the bulkhead on the northeast and east side. New shade structure/tour boat staging area on the northeast side of the bulkhead. Improve and provide pedestrian circulation throughout visitor center area. Provide designated pedestrian access between parking and site amenities. Provide connections to planned pedestrian circulation throughout the site.	o		1	800	Locate adjacent to Visitor Center and Kayak/Canoe launch	NA	Yes
4	New Visitor Center	Improve and provide pedestrian circulation throughout visitor center area. Provide designated pedestrian access between parking and site amenities. Provide connections to planned pedestrian circulation throughout the site.	o	o	1	4,800	Adjacent to marina area, close to shoreline and adjacent to parking	NA	Yes
5	Site Furnishings	Provide picnic tables, benches, trash receptacles, recycle bins and ash urn throughout area.	o		TBD	NA	Locate at appropriate locations throughout the site as required visitor comfort	NA	NA
6	Site Landscape	Preserve and restore historic landscape patterns. Add additional native palm tree planting.	o	o	NA	TBD	Locate at appropriate locations throughout as required for aesthetics, interpretation, erosion control and visitor comfort	Plants shall be native or vernacular to Everglades National Park	Yes
7	Site Signage	Provide new wayfinding signage throughout the site. Provide wayfinding signage to each visitor service and amenity.	o		10	NA	Locate at appropriate locations throughout site	NA	NA
8	Building Signage	Provide wayfinding signage at building. Emphasize visitor entry to interpretive center and public restrooms.	o	o					
9	Interpretive Exhibits and Kiosks	Interpretive program to be determined. Areas on the preferred alternative are called out for potential interpretative areas.	o		TBD	NA	Locate at appropriate locations throughout site based on interpretive program	NA	Yes
Visitor Center Area Subtotals					117 - Cars 2 - Trailers	48,600			

Program Area		Functional Requirements/Description	New	Existing	Quantity of Structures	Total Area Square Feet (SF)	Functional Relationship	Limitations	Interpretive Programming
Marina Maintenance Area									
1	Roadways and Vehicular Circulation	Configure area with roadways and service areas to accommodate additional proposed development.	o	o	NA	21,500	Locate adjacent to Marina for NPS staff use only	NA	NA
2	Parking Lots	Configure area for NPS vehicles. Maintain ample room for NPS and Concessioner vehicles and trailers for loading and unloading on boat davit crane.		o	3 - Cars	See above	Locate adjacent to Marina for NPS staff use only	NA	NA
3	NPS Maintenance Building	Building to be removed from this area and redeveloped by the GCVC Entry.		o	1	Refer to Architecture Section	Locate adjacent to Marina for NPS staff use only	NA	NA
4	NPS/Concessioner Storage	New on grade water operations storage building to be shared with NPS and Concessioner.	o		1	Refer to Architecture Section	Locate adjacent to Marina for NPS staff use only	NA	NA
5	Boat Fueling	Existing boat fuel storage tank to remain.		o	1	500	Locate adjacent to Marina with fuel truck access and boat access	NA	NA
6	Pedestrian Circulation	Provide appropriate pathways through proposed development. Improve pathway across plug for employee and visitor access.	o	o	NA	NA	Connects all site use areas and connection to off-site	Develop for universal accessibility	Yes
7	Site Landscape	Maintain existing; provide additional shading throughout parking areas. Implement best management practices and water quality improvements near water's edge.	o	o	NA	NA	Locate at appropriate locations throughout as required for aesthetics, interpretation, erosion control and visitor comfort	Plants shall be native or vernacular to Everglades National Park	Yes
8	Site Signage	Provide new wayfinding signage throughout the site.	o		446,500	NA	Locate at appropriate locations throughout site	NA	NA
9	Boat Hoist & Transfer Service	Existing to remain. Additional docks to be determined with concessioner contract.		o	1	500	Remain in existing location adjacent to Marina	NA	NA
10	Marina and Docks	Existing to remain. Additional docks to be determined with concessioner contract.		o	1		Basin and docks to remain as is	NA	NA
Marina Maintenance Area Subtotals					3 - Cars	22,500			
Canoe Launch Area									
1	Entry Signage	Provide entry signage to demarcate canoe launch entrance.	o		1	NA	Locate adjacent to Ramp and Day use area	NA	NA
2	Roadways, Vehicular Circulation, and Parking	Develop new parking for canoe/kayak users. Surface to be reinforced turf grass with wheel stops to delineate parking stalls. Develop site to accommodate turning radii for trailers and trucks.	o	o	44 - Cars 15 - Trailers	46,500	Locate adjacent to Ramp and Day use area	NA	NA
3	Day Use Area	Provide 3 new shade structures (625 sf each) for public use. Reinforce existing edge with rip rap.	o		3	1,875	Locate adjacent to ramp and near canoe/kayak parking area	NA	Yes
4	Support Facility	Provide 3 new shade structures (625 sf each) for public use. Reinforce existing edge with rip rap.	o		1	600	Locate adjacent to ramp and near canoe/kayak parking area	NA	Yes
5	Site Landscape	Provide native palm tree plantings.	o	o	NA	NA	Locate at appropriate locations throughout as required for aesthetics, interpretation, erosion control and visitor comfort	Plants shall be native or vernacular to Everglades National Park	Yes
6	Site Furnishings	Provide benches (6), trash receptacles (4), recycle bins (1) and ash urns (1) throughout area.	o			NA	Locate at appropriate locations throughout the site as required visitor comfort	NA	NA
7	Pedestrian Circulation	Provide pedestrian pathways throughout this area. Provide accessible connections to Visitor Center as well as to planned pedestrian circulation throughout the site.	o	o	NA	Refer to Overall Site Program Area	Connects to adjacent site areas. Locate plaza adjacent to launch area and parking	Develop for universal accessibility	Yes
8	Canoe/Kayak Launch Ramp	Develop a reconfigured paved ramp. Improve and harden subgrade below waterline for canoe and kayak users.	o	o	1	11,000	Locate adjacent to canoe/kayak parking and roads	Locate at existing site due to water conditions	Yes
Canoe Launch Area Subtotals					6	59,975			

Program Area		Functional Requirements/Description	New	Existing	Quantity of Structures	Total Area Square Feet (SF)	Functional Relationship	Limitations	Interpretive Programming
NPS and Volunteer Housing Area									
1	Roadways and Vehicular Circulation	Utilize existing roadways to access parking areas and trailer spurs.	o	o	NA	Existing to Remain	Locate adjacent to Housing and RV Camp area for NPS staff use only	Utilize existing parking and roads	NA
2	NPS Housing Units	(1) Existing quad-plex buildings to remain.	o	o	1	Existing	Remains in existing location	NA	NA
3	NPS Trailer Spurs	(7) Existing spurs to remain.	o	o	NA	NA	Remains in existing location	NA	NA
4	Parking Lots	Provide pathways through proposed development.	o		10 - cars 7 - trailers		Remains in existing location	NA	NA
5	Pedestrian Circulation	Provide pathways through proposed development.	o		NA	NA	Connects to adjacent site areas.	Develop for universal accessibility	Yes
6	Site Furnishings	Provide picnic tables, fire pits, trash and recycling receptacles throughout new development.	o		NA	NA	Locate at appropriate locations throughout the site as required visitor comfort	NA	NA
7	Site Landscape	Maintain existing.		o	NA	NA	Locate at appropriate locations throughout as required for aesthetics, interpretation, erosion control and visitor comfort	Plants shall be native or vernacular to Everglades National Park	Yes
Housing Area Subtotals					1	0			
NPS Maintenance Area									
1	Roadways and Vehicular Circulation	Develop new asphalt loop road and parking area.	o	o	NA	12,000	Locate adjacent maintenance for NPS staff use only	NA	NA
2	Fencing	Provide a secure area for NPS vehicle, boats, and trailers through fencing and gates.	o	o	NA	350 LF	Security fence with road gates at perimeter	NA	NA
3	Parking Lots	(3) Vehicle parking, and (3) large Vehicle parking.	o	o	3 - cars 3 - trailers	NA	Locate adjacent maintenance for NPS staff use only	NA	NA
4	NPS Storage Building	Provide a small storage building for land based maintenance activities.	o			400	Locate adjacent maintenance parking	NA	NA
5	Site Landscape	Maintain existing. Add new native trees in parking area for screening and shade.	o	o	NA	4,600	Locate at appropriate locations throughout as required for aesthetics, interpretation, erosion control and visitor comfort	Plants shall be native or vernacular to Everglades National Park	Yes
NPS Maintenance Area Subtotals					0	17,000			
TOTALS						244,475			

4.2 Visitor Center Program

	Space Name	Existing Building		VCS Model			Admin Model			Comfort Sta. Model			Merged Program	
				Base	Custom	Total	Base	Custom	Total	Base	Custom	Total		
1. Visitor Center	Information Desk		150	60		60			0			0		60
	Lobby/Orientation		0	250		250	120	-120	0			0		250
	Vestibules		0	50		50			0			0		50
	Exhibit Areas		600	41		41			0			0		41
	Exhibit Exterior Covered Equivalent			232		232			0			0		0
	Interpretive Sales		100	200		200			0			0		200
	Vending Area			12		12			0			0		12
	Back Country Permitting		100		40	40			0			0		40
	Elevator		75		60	60			0			0		60
2. Staff	Offices		370	98	-18	80	600	-520	80			0		160
	Interpretive Work Area			240		240			0			0		240
	Conference/Break Room					0	180	-90	90			0		90
	Workstations		700			0	160	190	350			0		380
	General Storage		275	50		50	120		120			0		170
	Secured Storage					0	80	-80	0			0		80
	File/Mail/Copy Room					0	100		100			0		100
	Recycling Area					0	40	-40	0			0		0
	First Aid Station					0	100		100			0		100
	Counting/Remit Room					0	0	80	80			0		80
	Evidence Room					0	50	30	80			0		80
	Armory					0	24	-24	0			0		0
	Staff Lockers		inc	7		7	7	11	18			0		25
	Staff Restrooms					0	75	-25	50			0		50
	Staff Shower					0	35		35			0		35
3. Concession	Concessions Retail		750		200	200			0			0		400
	Concessions Admin/Office		275		95	95			0			0		95
	Concessions Storage		275		75	75			0			0		75
4. Comfort Station	Maintenance Shed		460					225	225			0		225
	Male/Female Restrooms			170	-170	0			0			0		0
	Comfort Station - Ladies'		225			0			0	260		260		260
	Comfort Station - Men's		225			0			0	164		164		164
	Comfort Station - Family					0			0	100		100		100
	Drinking Fountains					0			0	40		40		40
	Net Square Footage		4580			1700			1328			560		3632
	Tare	0%	0		20%	500		35%	672		25%	190	25%	1268
	Gross Square Footage		4580			2200			2000			750		4900
	Park Suggested GSF					2150			1900			750		4800

Note: Not all bathrooms elements are included in preferred alternative as directed by client
* Rounded to nearest hundred. † Rounded up to next hundred. ‡ Rounded to nearest ten. § Typical size ffl10% (4320sf – 5280 sf)

Building Program

The Visitor Center will provide a safe, secure, and environmentally controlled facility to offer services to park visitors. Space requirements were defined through round table and program charrette meetings with project stakeholders. Each space was discussed at length and is documented in the pages that follow. The spaces within the building fall into four functional groups:

1. VISITOR CENTER

This area has an Entry Lobby which provides orientation to visitors about the surrounding site. Also included are spaces for back country permitting, interpretive sales and exhibits. A full time staff member is intended to be stationed at a reception desk to help with sales, questions, and permitting.

2. STAFF

The staff area houses full time staff and researchers that serve the Visitor Center as well as local Law Enforcement. Each group has an office as well as workstations. The Law Enforcement also includes secure armory and evidence rooms. Common spaces include lockers, storage (general and secure), counting/ remitting room, break area, Janitor's closet, and a combined unisex handicapped accessible bathroom.

3. CONCESSIONS

An independent concessioner will occupy this space to sell items to visitors such as food, clothing, souvenirs, etc. An office and storage area are included. It is anticipated that they will require the ability to transport carts of supplies from the elevator to the Concessions space.

4. COMFORT STATION

This area includes Women's, Men's, and Family bathrooms and water fountains for the general public as well as first aid, storage, and a janitor closet for the staff.

5. INTERPRETIVE PLAZA

An outdoor interpretive plaza is located at ground level. Its design should incorporate educational elements about the park as well as highlight how the Visitor Center is sustainable. It will provide pleasant shaded open air space protected from the sun, much like the porches which are common to local architecture. This space is intended to be a flexible area to allow for multiple public uses. Some anticipated activities include exhibitions, waiting area for people waiting for boat tours, and places for people to site and relax.

Space Distributions

1. VISITOR CENTER

Information Desk

Program Area:	60 sf
Description:	Reception Desk staffed by volunteers and interpretive staff to serve visitors, answer questions, provide information, provide back country permitting
Critical Adjacencies:	By secure door to Interpretive Staff area
Dimensional Requirements:	Adequately size to allow (2) staff members to sit at desk (during high season). Provide minimum separation from wall for staff passage.
Unique Design Parameters:	Provide secure storage for money from sales. Provide sufficient counter space for two staff each with map layout space.

Lobby/ Orientation

Program Area:	250 sf
Description:	Small welcome area to orient visitors
Critical Adjacencies:	At entry to Visitor Center space
Dimensional Requirements:	Allow space for user circulation as well as display of visitor information
Unique Design Parameters:	Provide maps, guidebooks, and other information to help orient visitors

Vestibule

Program Area:	50 sf
Description:	Screened/shaded area or enclosed airlock at building entries
Critical Adjacencies:	At public building entrances
Dimensional Requirements:	Adequately sized for anticipated circulation flow of visitors
Unique Design Parameters:	Protect indoor conditioned areas from extreme heat and mosquitos

Exhibit Areas

Program Area:	41 sf
Description:	Area for exhibits to help educate visitors about the park
Critical Adjacencies:	Near Visitor Center entry
Dimensional Requirements:	Accessible design parameters
Unique Design Parameters:	Orient towards exterior

Exhibit Exterior Covered Equivalent

Program Area:	464 sf min.
Description:	Exterior interpretive areas
Critical Adjacencies:	Near Visitor Contact Station. Near visitor activities.
Dimensional Requirements:	Accessible design parameters
Unique Design Parameters:	Interpretive program to be determined

Interpretive Sales

Program Area:	200 sf
Description:	Area for sale of items that help educate the general public
Critical Adjacencies:	Within Visitor Center, visible by reception desk
Dimensional Requirements:	Accessible design parameters
Unique Design Parameters:	Locate with walls for shelving and displays

Vending Area

Program Area:	12 sf
Description:	Public area for vending machines with drinks and snacks
Critical Adjacencies:	none
Dimensional Requirements:	Adequately size for vending machines
Unique Design Parameters:	Public access. No lighting in vending machines.

Back Country Permitting

Program Area:	40 sf
Description:	Kiosk area for visitor to receive permits
Critical Adjacencies:	Within Visitor Contact Area
Dimensional Requirements:	Adequately size for a few visitors to stand and for staff to process permit registration
Unique Design Parameters:	None specified

Elevator

Program Area:	60 sf
Description:	Handicapped accessible elevator with equipment located above the floodplain level
Critical Adjacencies:	Shared access to public and staff areas
Dimensional Requirements:	Minimum code requirements
Unique Design Parameters:	Locate machinery above Flood level - suggest using variable voltage frequency sustainable elevator with no machine room with cab programmed to rise to second level during storms

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29

2. CONCESSIONS

Concessions Retail

Program Area:	400 sf
Description:	Space for a Concessioner to sell boat tickets, snacks and drinks and novelties to visitors
Critical Adjacencies:	Publicly accessible; Convenient from boat docking areas.
Dimensional Requirements:	None
Unique Design Parameters:	Shell space only for build out by concessioner

Concessions Admin/ Office

Program Area:	95 sf
Description:	Secure office for Concessioner
Critical Adjacencies:	Within Concessions Retail
Dimensional Requirements:	tbd by Concessioner
Unique Design Parameters:	Shell space only for build out by concessioner

Concessions Storage

Program Area:	75 sf
Description:	Secure office for Concessioner
Critical Adjacencies:	Within Concessions Retail
Dimensional Requirements:	tbd by Concessioner
Unique Design Parameters:	Shell space only for build out by concessioner

3. STAFF

Offices

Program Area:	160 sf
Description:	2 Offices (the Admin model called for 6 offices). 1 office should be for Law Enforcement and the other should be for Interpretive Staff of the Visitor Center
Critical Adjacencies:	Each office should be near the workstations of the group it serves
Dimensional Requirements:	Adequately size for desk, storage, circulation and accessibility
Unique Design Parameters:	Suggest locating along exterior wall to receive natural light

Interpretive Work Area

Program Area:	240 sf
Description:	General multi-use work area for Interpretive staff. Incorporate Conference Room functions. Also include staff lockers, general storage, mail, copier and hoteling space.
Critical Adjacencies:	Adjacent to Staff Conference/Break Area.
Dimensional Requirements:	None
Unique Design Parameters:	None

Break Area

Program Area:	90 sf
Description:	Break area for all park staff
Critical Adjacencies:	Combined with Interpretive Work Area
Dimensional Requirements:	Sized for Kitchenette only
Unique Design Parameters:	None

Workstations

Program Area:	380 sf
Description:	7 Workstations. 2 Interpretive staff and 5 Law Enforcement.
Critical Adjacencies:	Each work station should be near the office of that group
Dimensional Requirements:	6 of the workstations should be 50 square feet each and 1 of the Interpretive work stations should be 80 square feet (for a researcher)
Unique Design Parameters:	Suggest locating along exterior wall to receive natural light

General Storage

Program Area:	170 sf
Description:	General storage for all staff
Critical Adjacencies:	Incorporate into Common areas as possible
Dimensional Requirements:	None
Unique Design Parameters:	None

Secured Storage

Program Area:	80 sf
Description:	Secure Multi-use storage
Critical Adjacencies:	Accessible by all staff
Dimensional Requirements:	Adequately sized for secure items as indicated by Park
Unique Design Parameters:	Multi-use with Counting/ Remit Room

File/ Mail/ Lockers/ Copy Room

Program Area: 100 sf
Description: Common Use space for general use by Interpretive and Law Enforcement
Critical Adjacencies: Within Administrative Office area
Dimensional Requirements: None
Unique Design Parameters: None

Recycling Area

Program Area: 0 sf (eliminated from Visitor Center program)
Description: Office recycling to be collected in Multi-Use common area; Exterior recycling to be consistent with park standards
Critical Adjacencies: N/A
Dimensional Requirements: N/A
Unique Design Parameters: N/A

First Aid Station

Program Area: 100 sf
Description: Storage for general first aid supplies and resting space for visitors while being treated
Critical Adjacencies: None specified. Suggest locating on ground level (floodable)
Dimensional Requirements:
Unique Design Parameters: None specified

Counting/ Remitting Room

Program Area: 80 sf
Description: Space for counting and storing money
Critical Adjacencies: Co-located with Secured Storage
Dimensional Requirements: Adequately sized for secure money box or safe
Unique Design Parameters: None specified

Evidence Room

Program Area: 65 sf
Description: Secure room to hold evidence for the Law Enforcement Personnel
Critical Adjacencies: Near Law Enforcement Staff
Dimensional Requirements:
Unique Design Parameters: Include evidence freezer. Secured

Armory

Program Area: 24 sf
Description: Secure storage space for weapons and ammunition
Critical Adjacencies: Near Law Enforcement Staff
Dimensional Requirements: Adequately sized for weapons storage as directed by Park
Unique Design Parameters: Secured

Staff Lockers

Program Area: 25 sf
Description: Lockers in common area for staff and volunteers
Critical Adjacencies: Within Common Staff area
Dimensional Requirements: None
Unique Design Parameters: None

Staff Restroom

Program Area: 50 sf
Description: 1 unisex bathroom (The Admin model called for two)
Critical Adjacencies: Incorporate Staff Shower; Adjacent to Common Staff Area
Dimensional Requirements: Adequately sized for handicapped accessible bathroom
Unique Design Parameters: Make handicapped accessible

Staff Shower

Program Area: 35 sf
Description: 1 unisex shower
Critical Adjacencies: Incorporate Staff Restroom
Dimensional Requirements: Adequately sized for handicapped accessible bathroom
Unique Design Parameters: Make handicapped accessible; Sustainable requirements at Staff's request

Maintenance Shed

Program Area: 210 sf
Description: Maintenance shed on site to store operations equipment and supplies
Critical Adjacencies: Marina
Dimensional Requirements: None
Unique Design Parameters: None



4. COMFORT STATION

Comfort Station - Ladies'

Program Area: 260 sf
Description: 10 toilets, 4 lavs (separated into two site locations)
Critical Adjacencies: Adjacent to Men's Comfort Station, Family Comfort Station, Water Fountains, and Janitorial Closet
Dimensional Requirements: Adequately size for handicapped accessibility
Unique Design Parameters: None

Comfort Station - Men's

Program Area: 164 sf
Description: 3 toilets, 4 urinals, 3 lavs (separated into two site locations)
Critical Adjacencies: Adjacent to Women's Comfort Station, Family Comfort Station, Water Fountains, and Janitorial Closet
Dimensional Requirements: Adequately size for handicapped accessibility
Unique Design Parameters: None

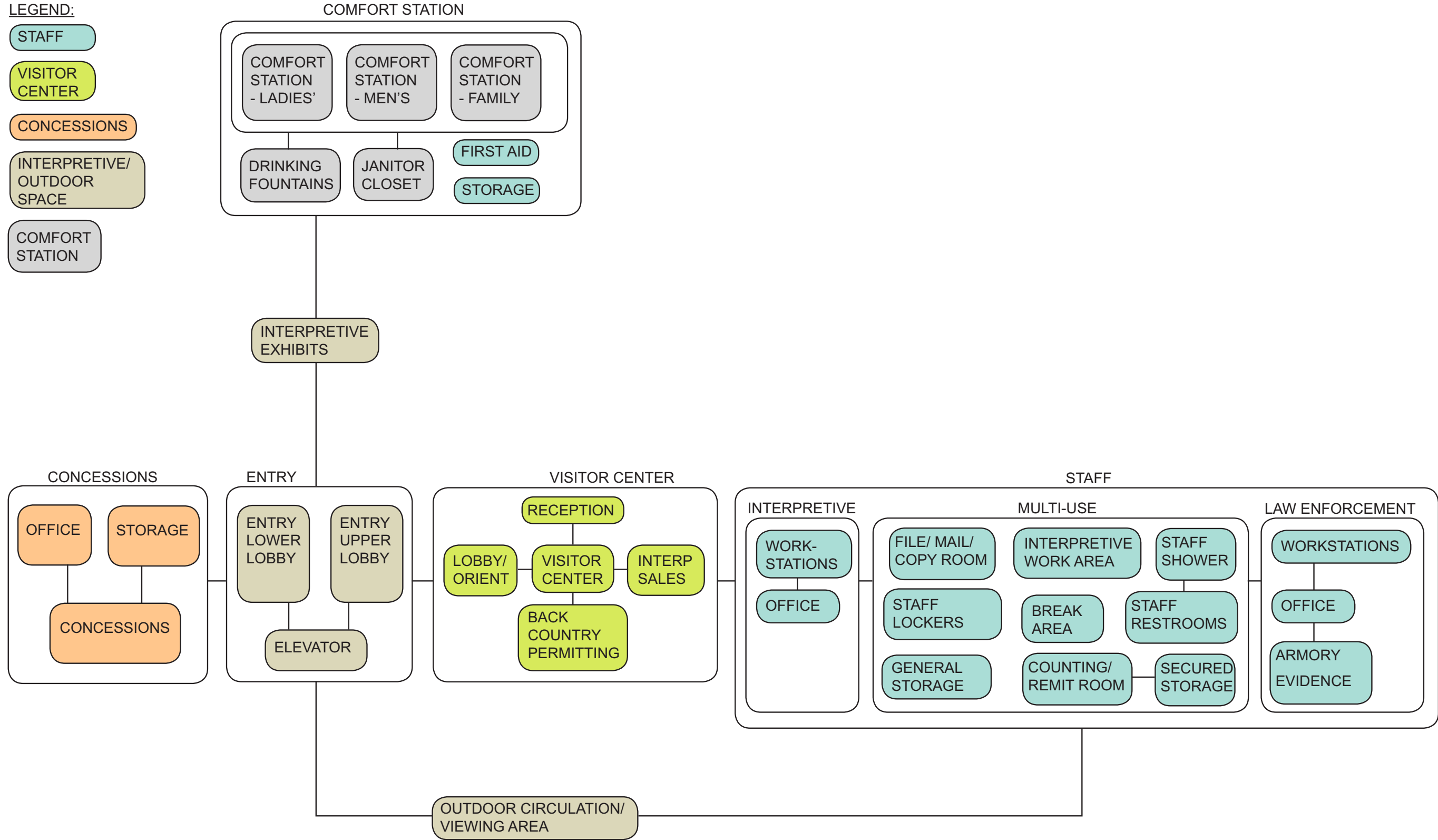
Comfort Station - Family

Program Area: 100 sf
Description: 1 toilet, 1 lav
Critical Adjacencies: Adjacent to Women's Comfort Station, Men's Comfort Station, Water Fountains, and Janitorial Closet
Dimensional Requirements: Adequately size for handicapped accessibility
Unique Design Parameters: None specified

Drinking Fountains

Program Area: 40 sf
Description: 2 drinking fountains
Critical Adjacencies: Accessible to public
Dimensional Requirements: Accessible clearances
Unique Design Parameters: Include water bottle filling station

Adjacency Diagram



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5.0 design character and guidelines



Wooden structure with pitched thatched roof and deep overhangs that provide shading over porches.
Source: University of South Florida.

There are a number of particular characteristics that define the architecture and landscape design of south Florida. Both buildings and plants have to be hearty and designed in a way to withstand both the summer heat as well as annual hurricanes. These conditions have led to building requirements that are more stringent than those in other parts of the country. This results in a unique regional aesthetic.

5.1 Context Analysis

Local Historical Images

For many years, homes in southern Florida near the coast have been elevated above ground for protection from flooding during hurricanes. Porches with overhanging roofs were common as they helped with shading during summer. Most of the early buildings were made of local wood and thatch.



Elevated home with central opening facilitating natural cross ventilation



Wooden farm house elevated above ground on logs



Substantial porches and roof overhangs provided a way to be outdoors while being protected from the sun



In addition to elevating buildings, structure often incorporated sturdy bracing at the corners. As well, openings often had wood shutters to keep out driving rain and wind.



Community of elevated dwelling units

Local Context Buildings

Current local building share many similarities to their historical predecessors. Porches, roof overhangs, and wood are still very common. However, as building technologies have developed, many buildings have added more sturdy systems such as steel, concrete columns, and metal roofs.



The Ivey House Bed and Breakfast, Everglades City



Local house, Everglades City



Waterfront homes, Everglades City



City Hall, Everglades City



Community church, Everglades City



Glades Haven fish camp houses



Glades Haven fish camp houses



Local home, Everglades City



Local real estate office, Everglades City



Bank of Everglades Building, Everglades City



Local home, Everglades City

5.2 Site Precedents

Local Plazas and Exhibitory

Plazas are important public gathering spaces that promote community by facilitating a variety of group activities and meetings. Often they are located at important natural and historic landmarks and offer spaces for viewing as well as background exhibitory to explain the surroundings. Many plazas in southern Florida focus on the beautiful landscape.



The sloping roof of this covered plaza helps orient views. The stone retaining wall and wooden structure appear to be local materials as they seem to fit in well with the site.



The plaza and exhibitory at this natural vista enhances the experience of the viewer by offering a strategically located destination point with a rich variety of images and information about the surrounding site.

Interpretive Plazas

Plazas generally are located at some of the most important destinations in cities around the world. Often they create a space to eat, talk with friends, or sit and read a book.



As the entrance to an interpretive center, this plaza establishes a quiet place to sit and contemplate or chat with friends.



This plaza uses a variety of types of interpretive signage to showcase wildlife and habitats. Shelter and seating are provided to create a relaxed atmosphere.

Canopies

Much like the overhanging roofs that are typically on houses in southern Florida, outdoor canopies allow people to enjoy being outside while offering protection from the sun. Often they can be mobile, facilitating a variety of outdoor events and activities. They also offer the opportunity for color to augment the colors of the surrounding landscape and structures.



These canopies help provide shading for an outdoor farmers' market near the water. Their bright colors seem to fit in with the colors of the fruits and vegetables.



This canopy is a more formal structure, used to create an amphitheater in the center of a public park.

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Paving Patterns and Textures

Establishing a variety of paving textures and patterns can add a great deal of character to a site. Often design and materials emphasize local culture and are a form of art suggesting a narrative for pedestrians to interpret as they circulate.



The paving patterns above create a structured entrance that complements the surrounding natural area.



Paving patterns can playfully suggest site themes, such as this wavelike pattern.

Kiosks

Kiosks offer convenience and amenities that can make visitors more comfortable. They often offer helpful information as well as sell refreshments, reading material, and tickets. Kiosks can also be mobile, allowing for a great deal of flexibility.



This kiosk offers a glass box with a number of brochures and maps that visitors can take to help navigate the nearby park.



The overhanging roof of this kiosk offers shade for visitors to stop and read about the surrounding park. Its materials and colors integrate with the landscape. The sculpted design helps highlight it as a milestone/ landmark from a distance.

Site Lighting

Site lighting serves to help with site security. It can also orient people to circulation paths and destinations as well as highlight special building and site elements.

Sustainability

Sustainability will be an important consideration for all site elements, and could include:

- Expressing sustainable technologies for interpretation and education:
 - Exposed solar collection systems incorporating advanced photo-voltaic technologies.
- Exposed water catchment tanks and conveying systems to illustrate the conservation and reuse of rainwater.

Signs, Site Furnishings, and Materials

SIGNS

Sign design for Gulf Coast District Visitors Contact Station and Ranger Station should follow the National Park Service UniGuide Standards: Volume I, Park and Facility Identity Signs, and Volume II, Roadway Signs; Visitor Information Sign System, VIS and Wayside Hardware Specification Manual; and the Director's Order #52C: Park Signs. NPS sign program management should result in signs that:

- Offer clear, concise, and consistent communications to park visitors while not detracting from natural and historic settings.
- Maximize the public's convenience and safety and reduce the National Park Service's liability exposure by ensuring compliance with pertinent federal regulations and principles of sound engineering and communication.
- Build upon, but not be bound by, NPS design traditions.
- Strengthen the public identity and perception of the NPS as one organization by reflecting current NPS graphic design standards.
- Allow changes as park communication needs and other circumstances change.
- Are easy to acquire, maintain, and replace, and are reasonably priced.
- Comply with NPS's commitment to rely more on standardized design.

- Signage for the site's developed area should follow the guidance listed below:
 - Sign base and column materials should use native limestone to match the pattern, texture and overall appearance of the limestone used on site historically, such as on the service station, to fit with the Mission 66 character.
 - Other sign materials are to follow the UniGuide specifications.
 - Wayfinding signage design is to follow the UniGuide specifications.
 - Monument signage, which is located at entry, will follow UniGuide Standards. It is suggested to use native limestone for the sign base and vertical elements.
 - Area identification signs are to follow UniGuide Standards. It is suggested to use native limestone for the sign base and vertical elements.
 - Roadway signs are to follow the UniGuide Standards.

It is estimated that approximately 75 percent of all Park signs will fall into the Visitor Information (VIS) category. VIS signs are designed to present information in a consistent, attractive, convenient, and flexible format. Such information may involve pedestrian or bicycle and (low-speed) motorist guidance, regulations, resource protection, instructions and general information, fee information, safety warnings, maps, and interpretation. VIS signs may also be used to identify Park areas, features, or facilities when more monumental identification signs are not required.¹



¹ "Visitor Information Sign System." VIS and Wayside Hardware Specification Manual. NPS 2008.

SITE FURNISHINGS AND MATERIALS

- Site furnishings are to be durable to heavy use.
- Site furnishing materials are concrete or aluminum to withstand salt exposure.
- Site furnishings will be of a standard design to make replacement or additional pieces more easily facilitated.
- Furnishings should not detract from the historic Mission 66 character.
- Paving and walls are to be constructed of durable and native materials.
- The design of walls should fit in with Mission 66 character and have a contemporary feel.



Existing bench



Recycling bins



Recycled pavers



Existing bench



Typical trash container



Oolitic cut boulders



Solar utility light



Rock wall



Concrete wall



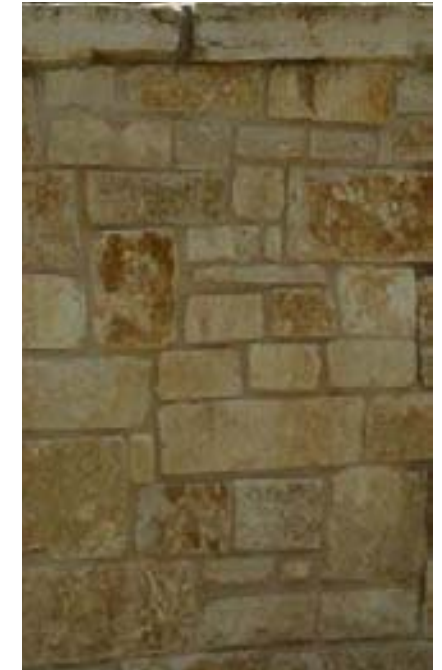
Saddleback bike rack



Proposed picnic table



Rock wall



Rock wall

Native and Tropical Plantings

TREES AND PALMS

- Primarily native trees and palms will be planted.
- Trees and palms will be utilized to provide shade, privacy and to highlight important features.



Seagrape



Lancewood



Black ironwood



Everglades Velvetseed



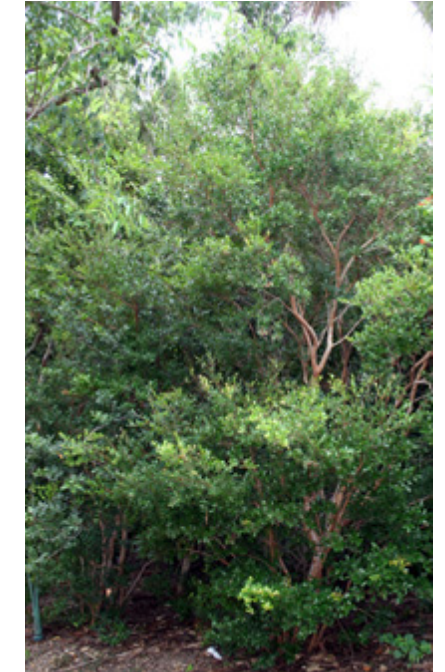
Paradise Tree



Paurotis palm



Wingleaf Soapberry



Spanish Stopper



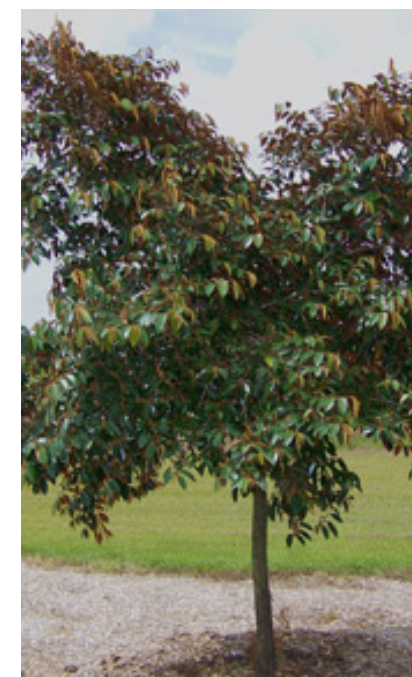
Green buttonwood



Thatch palm



Sabal palm



Satin leaf



White Stopper

TREES AND PALMS, CONTINUED



Pigeon Plum



Gumbo Limbo



Inkwood



Cinnamon Bark



Jamaica Dogwood



Seagrape



Sabal Palm



Mahogany



Coffee Colubrina



Mastic



Marlberry

SHRUBS AND GROUNDCOVERS

- Shrubs and groundcovers shall be primarily native species.
- Shrub and groundcover plantings shall be used for screening and to accent key locations.



Spider lily



Ebony Blackbead



Saw palmetto



Cocoplum



Limber Caper



Wild Coffee



Jamaica caper



Fakahatchee grass



Dwarf Fakahatchee grass



Spartina



Railroad vine

1.0

2.0

3.0

4.0

5.0

6.0

7.0

8.0

45

5.3 Utility Infrastructure Analysis

Potable Water System (combined domestic and fire)

EXISTING CONDITIONS

The domestic water service is provided from Everglades City municipal system via two service connections and meters located along Copeland Avenue (CR 29). These service taps are relatively small diameter and supply the combined domestic and fire suppression system. The system currently serves the Visitor Center, Employee Housing, RV Camp Sites, maintenance building and a few yard hydrants (hose bibs), in addition to a limited flow fire hydrant. This system is not expected to be adequate to meet the future flow requirements including fire flow for the development program and will require upgrades.

The municipal system is supplied via local well fields, which is believed to have experienced some salt water intrusion, increasing the level of treatment and associated costs. This is not expected to pose a concern for the potable water onsite, as the City will continue to address any water quality, volume and pressure concerns to ensure adequate supply to this site.

The onsite domestic water system contains long dead end runs in small diameter pipe, which is a concern from a water quality perspective and for flow/pressure restrictions. In addition, the lines that cross the large open field very near the location of the old dump site pose a concern regarding potentially hazardous gases from escaping the cap and following the buried lines to structures posing health concerns. Additional contamination may also occur from hose bibs and other water fixtures that do not contain proper back flow or anti-siphon devices.

SYSTEM RECOMMENDATIONS

As a result of the known concerns regarding the domestic water supply as described above, some improvements are recommended to ensure a continual safe potable water supply is available to meet all needs. These improvements may include the following:

- New, larger diameter potable water tap;
- Loop water system across the site connecting to existing two water services lines to improve water quality, reduce system flushing and improve flow characteristics to accommodate future flow and demands;



Potable water hose bib



Fire hydrant along Copeland Avenue

- Abandon in place existing water line crossing old land fill site;
- No pipe removal, trenching or disturbance of any kind shall occur within the limits of the old dump site;
- Provide additional fire hydrants and fire service lines to buildings, as needed, to meet local fire code for proposed facilities;
- Install appropriate back flow and anti-siphon devices on all water services and hose bibs, as needed;
- If capacity of municipal system cannot meet the fire flow requirements, even with the additional tap and looping the system, some form of onsite storage and or booster pumping may be required;
- Install gas block collars on all pipelines that cross dump site 200' buffer and that serve buildings.
- Appropriate spacing (per Health Department) from water supply hose bibs and sanitary hookups at RV spaces.

Sanitary Sewer System

EXISTING CONDITIONS

The sanitary waste collection system consists of a shallow gravity pipe network and three (3) lift stations with grinder pumps to transport the waste stream into the municipal system at the point of connection along Copeland Avenue. With high ground water and a very flat site in a salt water coastal environment, this system requires close management and continued maintenance to ensure the lift stations perform their critical function. The collection system currently serves the visitor center, employee housing, RV camp sites and a dump station hookup at the seawall for discharge of waste from boats.

This system is not expected to be adequate to serve the proposed masterplan development in its current state and will require some modifications and upgrades to accommodate the higher flow volumes.

SYSTEM RECOMMENDATIONS

To ensure a high level of service for all onsite facilities, some improvements to the existing wastewater collection system will be required. These improvements may include the following:

- No pipe removal, trenching or disturbance of any kind shall occur within the limits of the old dump site;
- Extend gravity and force-main pipe as required to serve all new facilities per plan;
- Install additional higher capacity grinder lift stations and force mains, as required;
- Install pipeline collars on all pipelines that cross dump site buffer and serve buildings;
- Remove and replace or abandon and install new force mains around proposed ponds, buildings and other structures to accommodate the proposed masterplan.



Liquid petroleum fueling station



RV hookups

Liquid Petroleum Fuel EXISTING CONDITIONS

- Two (2) existing 1,000 gallon storage tanks near marina basin for boat fueling
- Hazardous/flammable materials storage cabinet

SYSTEM RECOMMENDATIONS

The fuel storage and fueling stations will remain as part of the service program for NPS and other agency use. However, the location of the storage units and fueling stations may shift to accommodate the new program and to best facilitate the proposed uses. In addition, a containment area should be built to provide a level of protection for the bay from potential spills.



Electric transformer and service panel with meter

Electric Power EXISTING CONDITIONS

Electric service is provided via overhead supply lines along Copeland Avenue with two points of connection to onsite facilities. Transformers and meters are set at points across the site to serve all demands. No known supply issues or service limitations exist. In addition to all permanent facilities, sight lighting, structures and pump stations, electric power is also supplied to the RV pads for visitor and staff use.

SYSTEM RECOMMENDATIONS

The existing primary services supplied to the transformers are expected to be adequate to supply the future demands of the proposed facilities, however, upgrades to the secondary lines and service panels is expected. New secondary services will be required to serve new facilities and new locations of pavilions, restrooms and other buildings as indicated in the masterplan.

In addition, 3-phase power may be recommended for some proposed equipment. Discussions with the electric company will be required to determine availability prior to selecting equipment.



Weather station at Visitor Center

Communications EXISTING CONDITIONS

- Radio Antennas (2) at visitor center and maintenance building (relocate)
- Weather Station (relocate)
- Coast Guard Radio Antenna (relocate)
- Underground phone lines run to housing and visitor buildings
- Underground cable TV to housing area

SYSTEM RECOMMENDATIONS

With the removal and replacement of existing facilities, shorelines and overall facility, the existing antennas, weather station and other cable and phone communication lines will require relocation. This should be coordinated with the appropriate utility provider, and agency to ensure proper location of all devices and services.

Stormwater

EXISTING CONDITIONS

The site is located in a salt coastal environment at or near groundwater with standing water frequently occurring on site resulting from a combination of high groundwater and frequent rainfall during the wet season. The site is very flat with the average elevation of only 3.5 to 4.5 feet, which is well below the flood prone elevation and FEMA flood zone according to FIRM maps.

Currently stormwater runoff drains directly into the bay and marina area with little to no treatment. This includes potential fuel spills and oil and grease from paved vehicular areas.

SYSTEM RECOMMENDATIONS

To limit the impact on proposed facilities, the finished floor elevation of proposed buildings will be at 15.0 feet. Critical equipment will also be elevated for protection. Understory of buildings and maintenance yard areas will be used for non-critical equipment storage and maintenance functions.

Some portions of the existing shoreline armoring area in need of repair to prevent potential future erosion and damage to existing and proposed facilities. This includes repair of the concrete seawall cap which is currently experiencing cracking and exposure of the steel reinforcing to the salt environment. In addition, additional rip rap should be installed to protect the proposed boat launch area to the west.

The proposed masterplan will provide for collection, treatment and discharge of all stormwater within the developed portion of the site to improve the runoff quality, temperature and rate to protect the sensitive salt environment and outstanding receiving water bodies. The existing site grade will be modified as needed to provide appropriate stormwater management of both quantity and quality per local South Florida Water Management District requirements.



No stormwater intercept; all runoff drains into the bay



Standing water onsite



Riprap armored shoreline



Sanitary lift station near Visitor Station

Solid Waste

EXISTING CONDITIONS

- Waste Management collection service including recycling pickup

SYSTEM RECOMMENDATIONS

No proposed changes to this service are expected, however, the location and size of the containment area may be adjusted per the masterplan. As the visitation and trash quantity increases, the frequency of collection may need to be adjusted. Where applicable, the recycling program should be encouraged and increased to limit the volume of solid waste entering the landfill. This will potentially reduce the overall environmental impact and carbon footprint of the facility.

Old Dump Site

The following is a summary of our understanding of the old dump site status and the state and local permitting requirements related to improvements adjacent to this site located on the NPS Everglades National Park, Visitor Center parcel.

PROVIDED DATA

- Nov. 9, 1990: Environmental Audit prepared by Hazardous Waste Surveys, Inc.; Includes landfill boundary map and 200' buffer
- 1990: Economic Feasibility Study for Development Concept Plan (DCP); Discusses Concession feasibility only, no mention of landfill
- Feb. 6, 2012: Archaeological Investigation; Included map only of approximately landfill boundary. This boundary will likely not be accepted by the FDEP since it did not include soil or water quality testing, and was based on observation only.

AGENCY CONTACT TIMELINE

Feb. 17, 2012: Contacted Bill Krumbholz (239) 344-5657 at Florida Dept. of Environmental Protection (FDEP) to discuss permitting requirements for improvements proposed adjacent to the old dump site. Discussion via phone and email with Bill included info that the old dump site has been inactive and not disturbed for over 30 years and poses no threat to the environment as long as it remains encapsulated and not disturbed. According to the 1990 Environmental Audit, the FDEP performed soil and water testing of the surrounding area which demonstrated no leaching of toxins from the site. For this reason, the FDEP is not requiring any plan submittals, reviews or permits for the proposed work, as long as the work does not affect the old dump site cap in any way. In addition, all work shall conform to Section 6.2 of the "Guidance for Disturbance and Use of Old Closed Landfills or Waste Disposal Areas in Florida" published by the FDEP.

Feb. 21, 2012: Contacted Daniel Waters (239) 338-2929 x-7763 at South Florida Water Management District (SFWMD) to discuss Environmental Resource permitting requirements for proposed improvements to the site. Discussion via phone and email with Daniel included that a Standard General Permit would be required to be submitted to the District for review and approval along with a Stormwater Management Plan and a Pollution Prevention Plan. Dry stormwater detention is expected for stormwater quality. Collier County development regulations include a similar requirement. Separate permitting would be required for Collier County.

A detailed stormwater runoff and water quality evaluation will be required as part of the ERP submittal including pond sizing per the requirements below.

The stormwater volume required should be based, in general, by the following:

- Project shall provide 150% of the water quality requirement listed below.
 - 1" over entire site or
 - 2.5" over impervious area

Brief Evaluation Summary

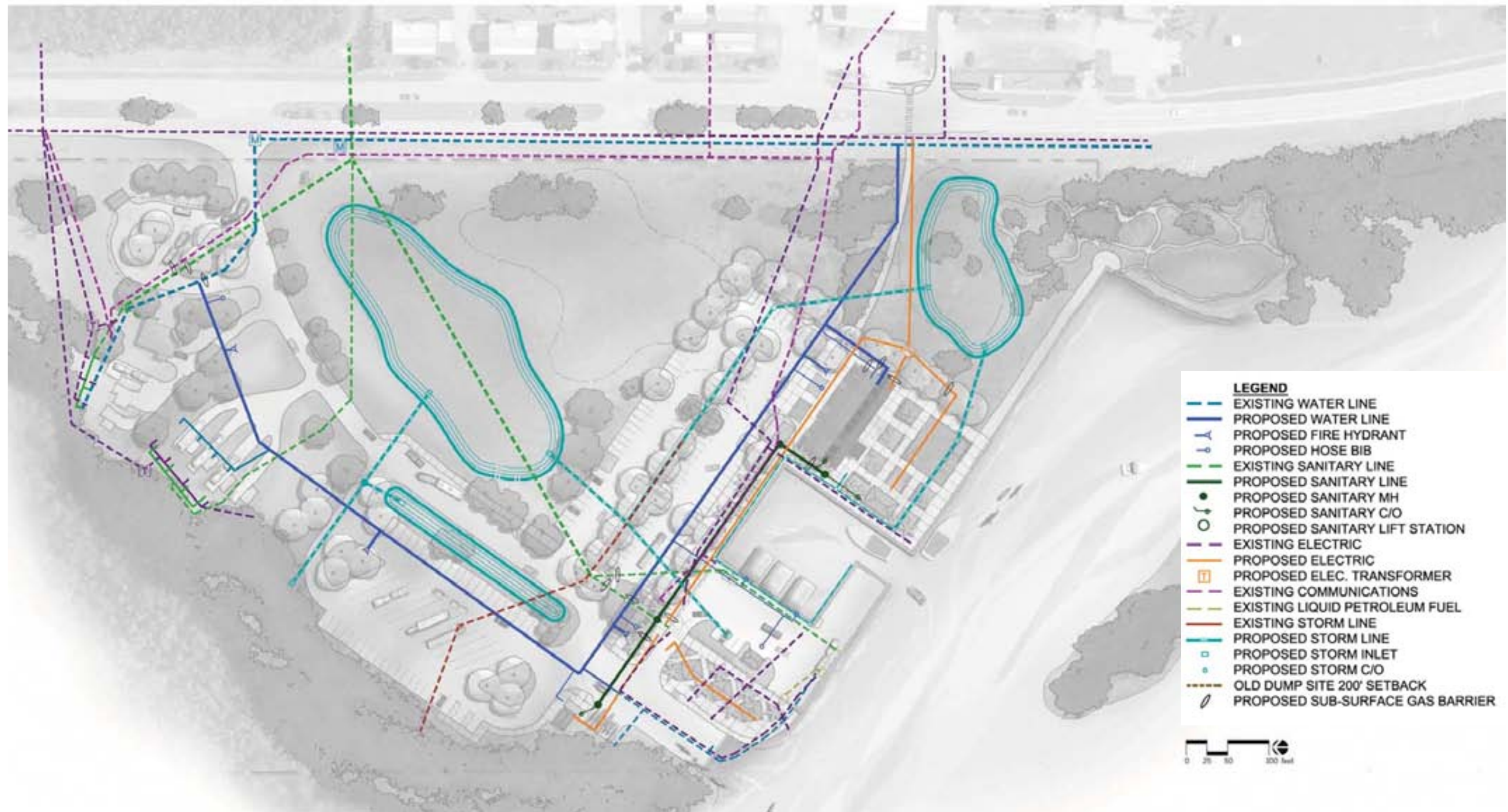
Prior to beginning our planning efforts, we reviewed the 1990 Environmental Audit and FDEP regulations pertaining to work on and adjacent to Closed Landfills. The following are some comments / concerns regarding the landfill.

In Feb. of this year, some Archaeological investigations occurred. During this investigation, the Archaeological team provided their estimate of the existing landfill boundary. This new "boundary" is larger than the boundary indicated in the 1990 Environmental survey which used soil and water sample chemical testing as the basis of their boundary. It is not clear what was used by the Archaeological team in determining their landfill "boundary."

- Boundary acceptable or should we continue using 1990 environmental survey boundary?
- There are a number of requirements for the Closure of old landfills
- It is not clear if any or all of these tasks has occurred, including:
 - Inspections
 - Survey monumentation
 - As-built survey
 - Public declaration
 - Official notification and closing of landfill
- All proposed construction activities shall be discussed with the Florida DEP

Site Utility Plan

Visitor Center separated from Concessions.



Existing Solid Waste Disposal Site

Hazardous Waste Survey and Testing performed in July of 1990.

- There are numerous State regulations for the monitoring of the disposal site. Have these actions been carried out and permits prepared?
- The old landfill is located at heart of site with 200' setback buffer encompassing the majority of the interior of the site with only the perimeter including the visitor center, marina, maintenance facility and housing areas being outside of this zone.
- Depending on findings of monitoring wells and soil, water and air quality studies of the remaining landfill solid waste, further action may be required to mitigate any issues.
- Construction activities on, around or near the disposal site shall be limited and caution used when excavating to prevent disturbing the cap and unearthing the waste. In addition, any construction activities require permitting through the FDEP.
- No utilities shall cross or impact the landfill cap.
- The encouragement or introduction of access to and on the disposal site shall be restricted or prohibited where possible.
- Soil and water test results of borings around the disposal area show excessive levels of volatile compounds, heavy metals and various other toxins and contaminants, which indicates that the water quality is severely impacted from this historic action.
- Heavy and potentially toxic debris was found in test borings across the site at depths as shallow as 2-3 feet.

Landfill

Regarding the old landfill at the Everglades NP Visitor Center near Everglades City, AECOM was notified that a recent archaeological investigation took place resulting in a diagram representing an estimate of the landfill boundary. AECOM has no record of the NPS contacting the Florida Department of Environmental Protection (FDEP) regarding the proposed improvements and potential impacts to the old landfill. Before any work can be performed on or adjacent to the old landfill, the FDEP is required to be contacted to discuss this. Main topics of discussion for the NPS and FDEP include:

1. A clarification of the process used by the Archaeological team in their determination of the landfill boundary, or if this "boundary" should even be considered when discussing potential improvements with the FDEP.
 - a. Since the FDEP maintains records of these activities, they likely have accepted the boundary from 1990 and the

introduction of a new "boundary" performed by an Archaeological dig may encourage them to act on requiring a new Environmental Audit and Boundary Assessment before we can propose any improvements on the site.

2. Was the old landfill ever "Closed" according to the Florida Administrative Code Rule 17-701.074?
 - a. If so, AECOM would like copies of the plans, surveys, etc. demonstrating the work completed in order to avoid disturbing it.
 - b. If not, this will likely be required by the FDEP prior to proceeding with any proposed improvements.
 - c. Also, any information regarding the cap, monitoring wells, venting, etc., in addition to what is included in the 1990 Environmental Audit, will be helpful to demonstrate to the FDEP the current conditions of the landfill.
3. All proposed activities which may affect the integrity of the environmental protection measures in place and which occur within or adjacent to the old landfill and the 200' buffer are regulated by the FDEP and require meetings with them to discuss the proposed improvements and their potential impacts to the landfill.
 - a. Per the Florida Administrative Code Rule, any improvements within 200 ft of the landfill should be avoided (especially buildings, ponds, concentrated weight loadings, and utilities).
 - b. If the improvements within 200 ft cannot be avoided, (we may need to prove this) then sub-surface methane gas barriers and ventilation systems may be required along and within any improvements constructed.
4. The above indicates that a meeting with the FDEP is required to take place. It is in the project and client's best interest that this meeting occurs ASAP, so as not to delay the project schedule. This meeting will dictate what improvements can occur within the buffer area of the old landfill and what actions will be required moving forward.

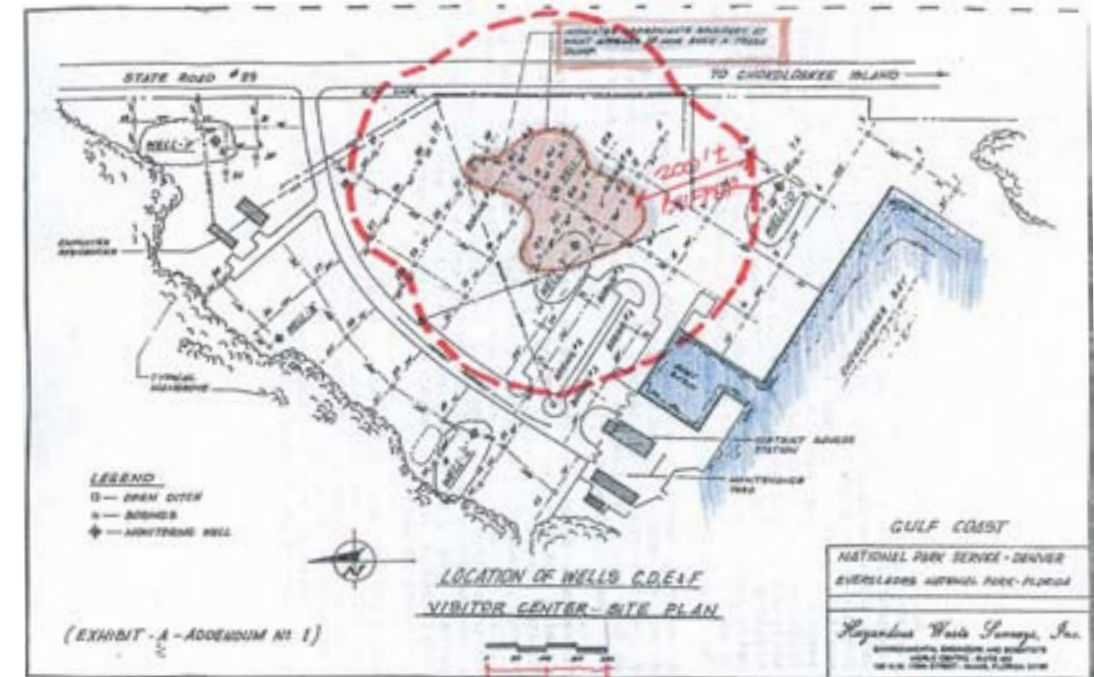


Image taken from the 1990 Environmental Audit and identifies the approximately old dump site boundary, a 200' buffer and the location of test pits and sampling wells, used for soil and water quality testing, located across the site.

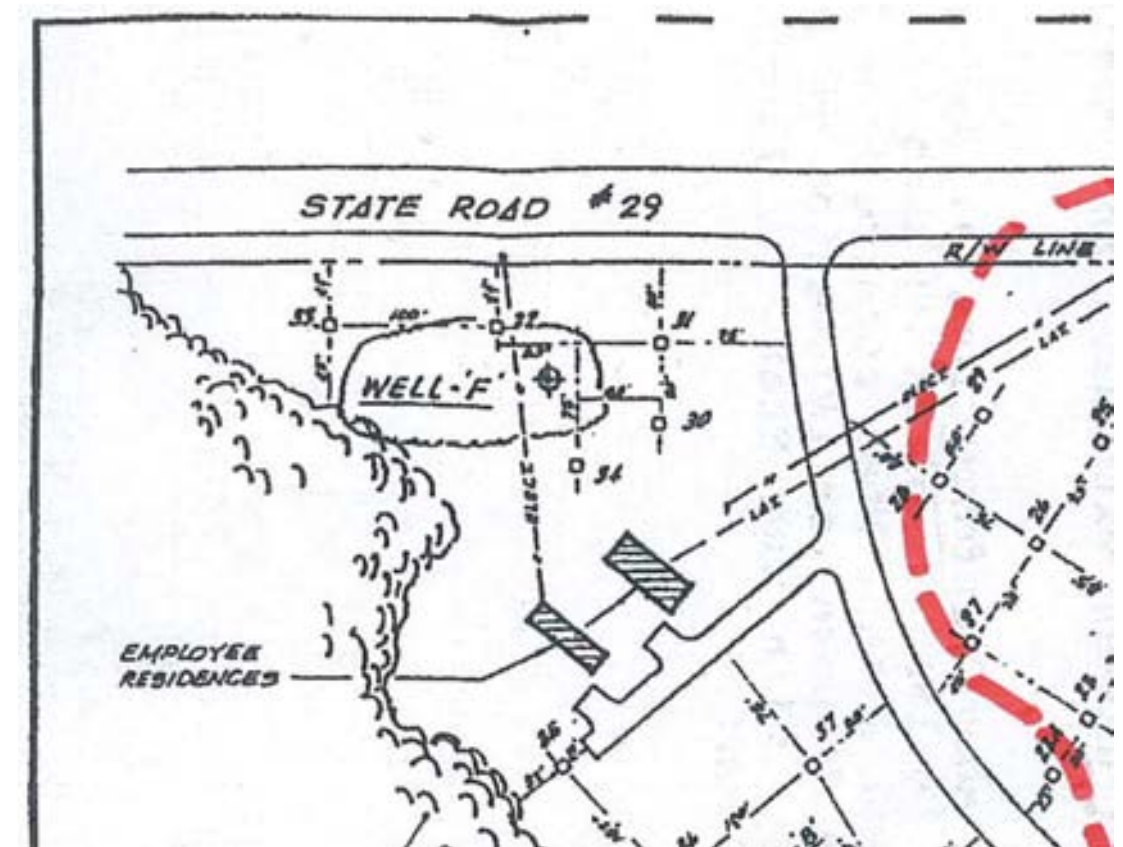


Image provided by the Archaeological study team as their interpretation of the old dump site boundary based on hand dug pits surrounding the site.

Water Demand Summary

Building / Use	Daily Water Demand
Visitor Center	1,492
Restroom Building	1,600
Storage Building	27
Housing	960
RV Camp Sites	600
Boat Prep / Wash areas	960
Sub-Total	5,639
Peak & Growth Factors	2.3
TOTAL	12,688

Water Demand (Breakdown)

Building	Size	Water Use	Units	Daily Water Demand
Visitor Center (SF)				
visitor services	752	0.1	gal/SF	75.2
administrative	1,776	0.1	gal/SF	177.6
concessions	578	0.3	gal/SF	173.4
restrooms	533	2.0	gal/SF	1066.0
elevator / stairs	460	0.0	gal/SF	0.0
Subtotal	4,099			
Restroom Building (SF)				
restroom	250	400.0	gal/ unit	800.0
outdoor shower	50	400.0	gal/ unit	800.0
Subtotal	300			
Storage Building (SF)				
storage	300	0.1	gal/SF	27.0
Subtotal	4,699			3,119.20
Housing (Units)				
Existing Staff House	1	240.0	gal/unit	240.0
Mobile Homes	3	240.0	gal/unit	720.0
RV Camp Sites (Units)				
RV Spurs	4	150.0	gal / spur	600.0
Boat Prep / Wash areas				
hose bibs / yard hydrants	4	240.0	gal / day	960.0
Subtotal				2,520.00
TOTAL with No Factors Added				5,639.20
TOTAL including factors for rough system sizing				12,688.20
Fire Flow	1,500 gallons per minute for 2 hours (to be verified by local fire department). This flow will be taken into account when sizing the system and booster pumps or storage if necessary, but is not included at this time.			
Landscape Irrigation	Hand Watering (with hoses) since no permanent irrigation is proposed, newly planted vegetation will require hand watering for first 2 years. This flow has not yet been determined, but should be included if irrigation is needed. Based on irrigated area.			

5.4 Architectural Precedents

Contemporary Interpretations

In recent years, there have been a number of modern architectural designs that can offer interpretation to the more traditional building aesthetic in the Everglades. Often aided by new technologies in construction and materials, these buildings incorporate the same elements of some of the older local Florida homes (such as porches, shutters, roof overhangs, elevated structures) but with lighter elements, cleaner lines, and more of a variety in materials.



This example incorporates a sliding shutter system at ground level. The majority of the main living spaces are elevated to the second level where there is an outdoor deck.



This dwelling unit is elevated above the ground and has variety of outdoor deck spaces, some of which are shaded. It incorporates modern modular construction with semi-permeable shutters. Structural regularity allows for design flexibility within each bay.



This facility is elevated above the local flood level. All facades incorporate a great deal of glass to highlight vistas and connection to nature. Cantilevered roofs extend out into the landscape. The building's "L" shape serves to help define a green courtyard below.



Large areas of facade glazing reflect the sky and surrounding landscape. The same wood structure extends from the outside to the interior, giving a sense that the roof is floating above a glass box. The dramatic cantilevered roof provides shading and emphasizes horizontal views of the surrounding site, suggesting continuity between inside and outside.

Inside - Out Designs

One of the most dramatic effects of architecture is to help connect people to nature. Some of the best examples of “inside - outside” buildings tend to minimize building envelopes in ways that suggest the outside coming inside and vice-versa.



In this example, sliding glass doors allow an entire wall to open up to the exterior. The transparent glazing and similar wood floor materials inside and outside help to emphasize continuity.



An opening in the middle of this building allows for daylight and natural breezes to pass through. It also marks the entry and frames views of the natural landscape. Durable exterior material cladding should allow this building to weather well for many years.



This permeable building allows views below through the carport, and above with floor to ceiling glass on all sides of the public spaces. From this vantage point, nature seems to almost flow through the building.



A cantilevered roof and balcony extend out into the landscape. Open structure at ground level and significant glazing above allow a number of views through the building. Colors and lighting seem to integrate well with the context.

Inside - Out Designs: Exterior Spaces

Exterior open air spaces that incorporate a number of interior elements often are some of the most exciting hybrids between the outside and inside. They are often elevated to emphasize vistas as well as to become a destination “reward” as one processes through the building.



This space incorporates a great deal of glazing at the roof and walls, allowing natural light to stream inside. Extensive use of wood on the interior emphasizes a connection to the surrounding nature.



An intimate outdoor space is created by a trellis-covered walkway between two structures. Natural light registers beautifully on the wall to the right as shadows are cast from the overhead structure. Landscape fills the view at the portal's end.



This space incorporates a great deal of glazing at the roof and walls, allowing natural light to stream inside. Extensive use of wood on the interior emphasizes a connection to the surrounding nature.



Trellises, screens, and sliding glass doors allow nature to permeate throughout this space. The monumental height emphasizes a connection to the sky. The interior/ exterior boundary is less defined, as greenery and rough stone paving extend in all directions.



This building has an open outdoor corridor that frames a view of the adjacent woods. It is oriented in an “L” shape, which helps to define an outdoor courtyard space adjacent to the scenic view in the distance.



The exterior corridor of this building facility frames a view of the fireplace at the nearby building. It also allows for air and light to pass through.

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Interior Spaces

Where feasible, interior spaces with high ceiling heights facilitate interior comfort, promoting better worker efficiency, health, and morale. A variety of lighting and material approaches might be taken to enrich the way the spaces are experienced.



This space utilizes natural wood for almost all surfaces. The artificial lights have similar qualities to the skylights, which gives a sense of order. The window at the end of the room is strategically located to frame a natural vista.



This space offers continuous windows allowing for panoramic gazing. Shading louvers offer the ability to block light when glare is an issue. The natural wood wall finish to the right recalls the surrounding trees outside.



High ceilings and skylights help to make this a dramatic entry lobby. The natural wood finishes on the floor and reception desk exude a sense of warmth. The space is large enough to allow for display and exhibitry.

5.5 Conceptual Technology and Standards

General Technology and Standards

1. Design in context and compatibility with the Gulf Coast region of South Florida including Everglades City and Chokoloskee Island.
2. Design to incorporate South Florida typologies rooted in climate sensitivity.
3. Design in accordance with the following codes, standards, criteria, and design requirements:
 - Florida Building Code 2007 Edition, adopted March 2009, Hurricane Zone VE, 150 mph wind loads. Existing Buildings may utilize the 2007 Florida Existing Building Code.
 - Applicable accessibility guidelines including Architectural Barriers Act (ABA) Standards for Accessibility Design, UFAS, and ABAAS 2004. Utilize ramping and transitional graded areas as vertical circulation to building pads where possible.
 - Requirements of the National Park Service Sustainability Checklist
 - Life Safety Code 2009 (NFPA 101)
 - National Fire Protection Association (NFPA)
 - Underwriters Laboratories (UL)
 - Energy Conservation Code (IEC)
 - Green Building Rating system for new construction & major renovations
 - American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) 90.1-2007; ASHRAE 90.1-2004; ASHRAE 62.1-2004; ASHRAE 55-2004.
 - Illuminating Engineering Society of North America (IESNA) Handbook
 - National Electrical Manufacturer's Association (NEMA)
 - National Fire Protection Association (NFPA)
 - National Electrical Code 2008 (NFPA 70)
 - Institute of Electrical and Electronics Engineers Inc. (IEEE)
4. Design in accordance with the Flood Insurance floor elevations of 15 feet Mean Sea Level (MSL).
5. Consider climatic change projections of 16"-21" mean sea level rise in 50 years and increased storm intensity levels. Incorporate NPS guidance for 18" projected mean sea level rise.
6. Elevate all building systems above flood level or protect with dry flood proofing enclosures below flood level. Incorporate non-water sensitive materials for areas below flood level that can be cleaned and decontaminated when impacted by flood waters.

7. Incorporate NPS considerations for building in coastal zones.
 - Utilize modular building components and systems which can be fabricated off site and transported to the site for ready installation on foundation systems and then, in the future, be disassembled for relocation.
 - Utilize mobile building options where practical.
8. Incorporate hurricane resistant materials and protection of glazed areas to minimize repair and replacement costs with consideration of the time requirements for putting protection in place in a storm event.
9. Minimize exposed MEP and fire protection elements where possible.



Mechanized folding louver panels can be opened automatically during normal weather and lowered during storms to protect openings and glass in buildings. When they are open, they create natural shading from the summer sun.



Storm shutters often are incorporated in coiling door housing above windows so that they can be lowered during hurricanes to protect the glass.



Where space allows, garage doors can be incorporated into building facades to protect interior spaces during storms.

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Construction Standards

RAISED BUILDING ELEVATIONS

1. Raise building floor elevations to protect people, systems and water sensitive construction from storm impacts. Elevate all building systems and typically occupied floor elevations above flood level or protect with dry flood-proofing enclosures below flood level (minimum 15 feet above sea level).
2. Elevate utilitarian structures, support facilities, maintenance buildings and other miscellaneous structures on filled pads above storm surge level (estimated 7 feet above sea level)
3. Incorporate non-water sensitive materials for areas below flood level.
4. NPS requires to allocate for 18 inches sea level rise over 50 years for sites and buildings.



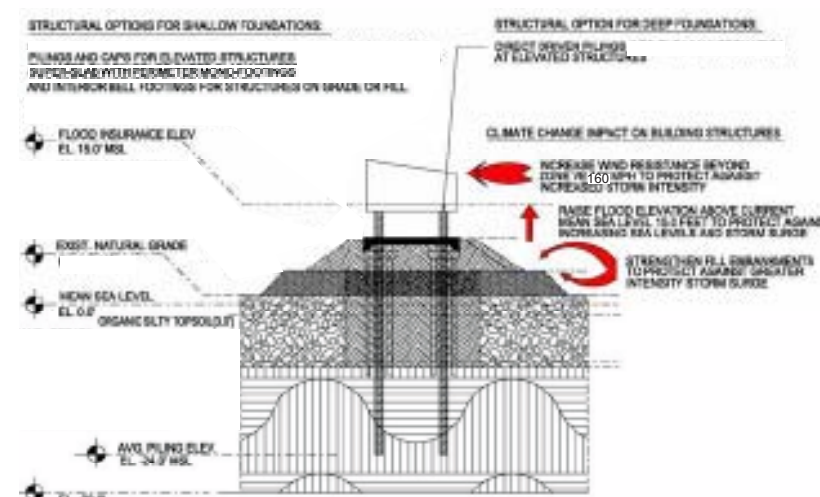
Local structure on raised concrete curb.



Local bathroom concrete block facility on raised grade. Skylights are incorporated to bring in natural light. High louvers are utilized for ventilation while maintaining privacy.

STRUCTURAL SYSTEMS

1. Utilize structural slab-on-raised-structural-fill or slab-on-piling foundations for maintenance structures.
2. Utilize pre-cast concrete pilings to elevate building structures above flood elevations. Pilings to extend approximately 25' feet below existing grades which is the approximate level of local bedrock.
3. Elevate Maintenance facilities on new structural fill an additional 2 feet above existing elevations, to an estimated elevation of 7 feet MSL.
4. Utilize surge protection buffers at slab type foundations and at on-grade facilities
5. At slab foundations, utilize concrete masonry unit wall structure with aluminum pre-manufactured truss framed roof systems
6. At raised slab buildings utilize either:
 - o Structural modular concrete and pre-cast building systems (royalconcreteconcepts.com or equivalent) to minimize on-site construction requirements.
 - o Prefabricated steel frame modular units (greensteelhomes.com or equivalent) with structural infill panel, foamed insulation and aluminum panel sheathing.
 - o Lightweight concrete and plastic reinforced tunnel extrusion modular units.
7. Utilize aluminum components for exposed structural framing and exterior railings and walkways to reduce corrosion.
8. Utilize structural steel only when fully encased and protected from corrosion.
9. Avoid wood framing.
10. Avoid exposed steel framing.



Geotechnical, Structural Conditions, and Climate Change Impact



Local vernacular style dwellings on raised concrete structures.

MODULAR CONCRETE CONSTRUCTION

Modular concrete construction is becoming more and more popular in southern Florida. This can allow for affordable high quality buildings constructed as large building sections to be prepared in controlled factory conditions and shipped by truck to a site. This type of construction also facilitates relocation inland which might be necessary if flood conditions become more extreme in the coming years for coastal projects. Concrete tends to weather better than most materials in the harsh Floridian coastal climate so it is resistant to high humidity, wind driven rain, fire, floods, and hurricanes. Some of the many additional benefits include resistance to fire, inedible by insects and vermin, corrosion resistant, advantageous thermal mass and nocturnal effects, noise resistance, security and impact resistance, minimized air infiltration, no significant adverse effect on indoor environmental quality, and it can be recycled as aggregate for new concrete construction.



Local example of facility made with modular concrete construction on a raised concrete structure. In this example, a screened porch is incorporated as part of the entry to allow users to be outside while being protected from sun and mosquitoes.



Residential modular unit being lowered into place as part of an efficient, economical construction process.



Concrete modular elements that work together to form shear walls to help establish a stable structural system.



Contemporary example of a compact, efficient modern dwelling made of prefabricated modular construction. The offsite controlled conditions used in making the main shell help to minimize wall thicknesses and maximize structural efficiency and finish quality.

MATERIALS AND FINISHES

1. Standard exterior materials include sealed or painted concrete and masonry finishes, 3-coat stucco system or pre-finished aluminum panels.
2. Exterior materials include prefinished aluminum panels or cementitious siding/panels (jameshardie.com or equivalent).
3. Utilize mill finish or prefinished aluminum at exterior exposed metal (structural and decorative)
4. Utilize aluminum framed windows with high performance glazing with aluminum screens at operable units.
5. Utilize tightly woven aluminum screening with hardware cloth reinforcing layer at exterior enclosures.
6. Incorporate hurricane shutters at all window and screened openings. Full height motorized track type systems at screened expanses of central core. Manual shutters at punched openings.
7. Utilize either concrete or perforated recycled boardwalk decking for occupied exterior spaces and walkways
8. Utilize light colored pre-finished aluminum metal roofing at sloped roofs, incorporate applied photovoltaic systems where practical.
9. Utilize light colored membrane roofing at flat roofs.

CONVEYANCE SYSTEMS

1. Provide accessible entry and egress at all buildings and structures. Where possible, utilize ramping and transitional graded areas to achieve vertical circulation (in lieu of lifts or elevators) to minimize maintenance.
2. Where necessary, utilize traction type elevators to ensure that equipment is above flood level.
3. Provide structural surge proof protection around elevator doors and shafts
4. Provide protection zone from sun, rain, and mosquitoes at Main Entry area.
5. Utilize ramps or grade transitions to ensure elevator entry is elevated a minimum of 7 feet above Mean Sea Level (approximately 2'-6" above current grade).

MECHANICAL SYSTEMS

1. Investment in an energy efficient system will translate into proportionally high operation cost savings. Similarly, investment in the building envelope will reduce loads required to be served by the equipment. An integrated design is necessary to be able to capitalize on these investments.
2. At raised foundation buildings, utilize high efficiency heating and cooling systems. Conservatively assume 10 tons of cooling capacity is required amongst the various interior building uses. Assume that dehumidification is required.
 - o Utilize geo-thermal wells and water source heat pump systems for heating and cooling for increased efficiency and elimination of all exterior equipment (waterfurnace.com or equivalent).
 - o High efficiency heat pumps, zoned by use. Exterior equipment to be located at raised foundation levels on platforms or on roof (where space is available and protected).
3. Incorporate energy recovery at all conditioned building areas.
4. At on grade public restroom modules, rely on passive ventilation methods supplemented by ventilation fans (no heating or cooling systems planned). Also, it may be possible to temper the air via upper level conditioned systems.
5. Primary MEP equipment to be hung from structure hidden from occupiable spaces above suspended ceilings with access panels
6. Vibration from any planned equipment should be controlled and mitigated.
7. The control system, in conjunction with the building design, must be sufficiently responsive to maintain spaces within the specified temperature and humidity ranges.
8. The schematic plans will be based on a small building control system by ASI controls, the preferred interface with the NSP central program to allow for remote monitoring and control of building systems.
9. LEED requirements will be incorporated into the design criteria including indoor air quality (fresh air and CO2 monitoring), energy savings and refrigerant requirements/limitations

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PLUMBING SYSTEMS

1. Reduce demand, reclaim and reuse potable water wherever possible. Ultra low flow fixtures throughout including waterless urinals.
2. All fixtures and faucets (except showers) to be touchless, self regenerating consistent with NPS recent installs.
3. Locate all pumps and equipment above flood level
4. Utilize electric water heaters (marathonheaters.com or equivalent). Solar water heat is not anticipated for very small loading requirements)
5. Rain leaders shall be on the outside of the building.
6. Fit plumbing fixtures and floor drains with trap guards.

ELECTRICAL SYSTEMS

1. Incorporate photovoltaic power array maximizing surface area on roof (up to capacity of building).
2. Engineer photovoltaic systems to return generated power to the overall grid
3. Locate all electrical equipment above flood level.
4. Interior and Exterior lighting to incorporate LED fixtures where available.
5. All exterior lighting to be full cut off dark sky compliant fixtures. Providing photocell, motion detection and timer control capabilities.
6. Interior lighting to incorporate motion sensors and timer controls. Individual controls to be provided throughout the administration area. Dimmers only in Visitor Services area.
7. Assume Building Management System to ensure efficiency and functionality of entire building.

SECURITY SYSTEMS

1. Provide building security system.

FIRE AND LIFE SAFETY

1. The facility shall be designed to minimize ignition sources and spread of fire throughout the building with appropriate fire walls and fire proof materials
2. All repository spaces shall have two hour rated walls.
3. The facility shall be fully sprinklered per NFPA 13, Standard for the Installation of Sprinkler Systems and local codes.
4. A wet-pipe sprinkler system shall be provided throughout the entire facility with the exception of areas subject to freezing. Areas subject to freezing shall be protected with a dry-pipe sprinkler system
5. A fire pump shall be provided if the flow test report indicates a pump is needed to meet the required pressure and flow demands of the system. It is presumed a fire pump will not be required.
6. Fire Alarm devices shall be provided per NFPA 72, National Fire Alarm and Signaling Code, 2010 Edition, to include manual pull stations, audible/visible alarm devices, flow switches, and a central fire alarm panel.
7. Either Mass Notification or building voice annunciation shall be provided at site direction.

INTERIOR FINISHES

1. Interior of all exterior walls to have wainscot GWB with plywood board.
2. Interior ceilings to be painted GWB.
3. Interior flooring to be ceramic tiles, stainless steel permeable entry mat (at entry), and Trex floor system (or equal).

Sustainability Standards and Climate Sensitivity

Incorporate sustainable design principles and elements in all new construction based primarily on the NPS Sustainability Checklist which consolidates multiple sources of federal mandates for energy conservation. Checklist is attached for reference.

1. Implement US Green Building Council standards for guiding sustainability initiatives with the goal of achieving LEED certification.
2. Consolidate development footprint
3. Protect and enhance native habitats.
4. Employ passive ventilation, lighting and insulation where regionally practical.
5. Incorporate renewable Energy resources wherever feasible.
6. Employ material components and systems that improve building envelope performance.
7. Utilize residential scale sustainable strategies to minimize costs and maintenance.
8. Showcase sustainable features as an educational tool as part of the park experience.
9. Introduce recycling and waste reduction methods in the construction and operation of the facility.
10. Reduce water consumption
11. Employ energy efficient systems throughout the development.
12. Utilize energy efficient ground source, geo-exchange heat pumps. Evaluate vertical column, open and closed systems.
13. Utilize energy recovery systems at public large load conditioned spaces.
14. Employ sustainable and conservation techniques in building maintenance and operations.
15. Utilize recycled products, low emitting and rapidly renewable materials in the construction.

THE NATIONAL PARK SERVICE AND SUSTAINABLE STANDARDS

The National Park Service embraces and requires the inclusion of sustainability in the designs for their parks and their buildings. The designs for the Everglades Gulf Coast redevelopment are put forth with this in mind. It is the park’s expressed goal that the proposed buildings exceed the current NPS and federal regulations for green building and incorporate the best practices for sustainability gleaned from federal building requirements, the United States Green Building Council LEED rating system, the Green Globes rating system and the Living Building Challenges rating system. These various systems provide a comprehensive set of opportunities from which the most applicable can and should be applied throughout the design process of these buildings.

LEED

The Leadership in Energy and Environmental Design (LEED) green building rating system is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. As a standard, it is predominantly performance-based, and as a design guide, it takes a whole-building approach that encourages a collaborative, integrated design and construction process. LEED is administered by the U.S. Green Building Council (USGBC, www.usgbc.org). Within the LEED rating system are requirements for site design, energy efficiency, human comfort and environmental stewardship. The Visitor Center, as presented and described in this document, achieves an energy savings of nearly 50% over code minimum requirements and readily achieves a level of Gold Certification (Certified, Silver, Gold and Platinum levels are possible benchmarks). A higher level of certification is certainly available to the project with more nuanced design work and moderately increased first cost. This achievement predicts annual operations and maintenance cost saving and increased visitor and staff comfort for the life of the building. If LEED certification is requested by the NPS, project costs will expand to include LEED administration and documentation as well as 3rd party commissioning of project systems.

GREEN GLOBES

Green Globes is an online, point-based green building rating system administered by the Green Building Initiative (www.thegbi.org). Many of the points are similar to those in LEED, though the point structure differs; Green Globes has 1000 total points compared with the 69 for LEED-NC. Certification for Green Globes is available at 35% achievement of the total applicable points compared with LEED at 38% (26 points). It is easier to obtain certification in Green Globes, however, because points that are not applicable to the building are subtracted from the total number of applicable points, a higher percentage is obtained for those criteria that are met. A cursory review of the planned development achieves high level certification. Project costs must include 3rd party assessments for certification.

THE LIVING BUILDING CHALLENGE

The Living Building Challenge is a philosophy, advocacy tool and certification program that addresses development at all scales. It is comprised of seven performance areas: Site, Water, Energy, Health, Materials, Equity and Beauty. The purpose of the Living Building Challenge is straightforward – it defines the most advanced measure of sustainability in the built environment possible today and acts to diminish the gap between current limits and ideal solutions. The Living Building Challenge requires analysis across the life cycle for multiple systems with a goal for buildings which are energy independent with self contained potable and storm water systems. It may be possible to meet these requirements at Gulf Coast with significant additional first cost investments in water storage tanks, photovoltaic arrays and well studied materials usage. Ongoing operations must also include tracking, monitoring and improving the development over time.



Solar panels on a roof that capture solar energy to be used for the operation of the building.

FEDERAL BUILDING REQUIREMENTS

Federal Building Requirements exist from various mandates, departments and reference areas including requirements within the National Park Service. These requirements have been synthesized and added to the requirements of the LEED rating system by the NPS into a sustainability checklist. This checklist provides direction and accountability for incorporation of both green building best practices and federal requirements. For the Gulf Coast Redevelopment, the project (at the current Pre-Design phase) complies with Federal Requirements and shows a score of 62 points for LEED Gold Certification.

MINIMIZING THE FOOTPRINT

Sustainable development relies on good fundamental decisions. The choice about what and how much to build is one of these fundamental concerns. The most environmentally responsible decision on each project is the choice to build only as much as is necessary to accomplish functional project goals. As with all choices, the “right” amount of space toggles between efficiency and comfort. Enclosed conditioned spaces are reserved for long term daily use and are supplemented by exterior spaces, optimizing the envelope.

BUILDING WITH DURABLE MATERIALS

Sustainable developments withstand the test of time. This precept is critical from both a programmatic and a physical perspective. Long range visions, built in flexibility and appropriate program elements allow developments to continue to serve even when the program, functions and/or surrounding environment shifts. Longevity of use is enhanced by durability in material selection to ensure that structures are physically present and available to accommodate planned uses.

OPTIMIZING THE BUILDING ENVELOPE

After planning for the smallest, stoutest development, attention turns inward to goals for energy efficiency. The choice to provide conditioned spaces carries with it the responsibility to shape these spaces to extend efficiency to energy usage. Reflectivity, insulation levels, sun protection, air sealing and good windows will provide an envelope that is worthy of smaller and more efficient systems.

DAYLIGHT OCCUPIED AREAS

The greatest producer of heat loading for air conditioning is artificial lighting. In environments where sunlight is a ready resource, it is natural and important to let the sun shine in. Controlled daylight contributes to a comfortable and healthy environment and significantly reduces the energy use in a building. Daylight harvesting sensors and controls allow occupants to enjoy a consistent light level including daylight.

EMPLOY HIGH EFFICIENCY SYSTEMS

Only after minimizing the footprint and optimizing the envelope should an investment be made in efficient systems. Often the impact of footprint and envelope choices more than cover the first costs for highly efficient systems leaving operations costs as an annual bonus.

CREATE POWER

In environments where solar resources dominate, generating solar power is a natural choice. Minimize the footprint, optimize then envelope, employ efficient systems, then add renewable energy production. This way the capacity of the system goes much further to creating a net-zero energy building.

CHOOSE MATERIALS WELL

Responsible and durable materials are critical to the success of sustainable developments. Preferentially choose materials which are non-toxic, incorporate recycled content, do no harm (to the environment) and enhance comfort.

NATURAL VENTILATION

Where possible, utilize natural ventilation to help reduce the need for mechanical air flow. Often this can be accomplished with comfortable semi indoor/ outdoor spaces that provide shading but are porous with elements like louvers, trellises, and screens which allow some natural light and air to pass through.



The green-covered trellis provides shading while framing views of the landscape and sky. An open structural system facilitates breezes and the use of natural materials establishes an additional connection to the surrounding nature.

6.0 alternatives and value analysis



View from project canoe launch looking south towards water and nearby island

On April 10-12, 2012, a Value Analysis (VA) session was conducted in Homestead, Florida. During the three day session, NPS staff, design team and facilitation professionals reviewed various opportunities for redeveloping the Everglades National Park, Everglades City visitor and administrative site. The Pre-Design Value Analysis evaluated broad approaches for implementing programmatic objectives and tested various design strategies to confirm program, establish a development budget and guide further design.

Site and building alternatives, derived from a weeklong design workshop in March 2012, included options that serve to test program requirements and explore alternative ways to provide visitor and staff services. Design studies were presented with options for minimizing building and site footprints as well as minimizing volume of conditioned space. Strategies included omission of programmed areas to test how necessary each area is, re-situating programmed areas from interior to exterior to confirm requirements, and use of mobile or removable buildings for various program components.

The following schemes allow for interchangeability between building and site concept designs. Site schemes illustrate varying orientation, adjacency and functional relationships. Building schemes illustrate various means to accommodate visitor and staff services. All schemes respond to the programmed intent for the site. Three site approaches and four building options were reviewed and discussed in addition to various development components. Additional options were developed throughout the session. The following pages contain the images of each of the schemes and the calculation of value resulting from the VA process.

In attendance at the VA:

Dan Kimball (NPS EVER Superintendant)
Keith Whisenant (NPS EVER Deputy Superintendant)
Michael Jester (NPS EVER Facilities)
Mike Savage (NPS EVER Operations)
Fred Herling (NPS EVER Planning)
Tom Iandamarino (NPS EVER Law Enforcement)

Alan Scott (NPS EVER Interpretation)
Bill Fay (NPS EVER Concessions)
Tim Bemisderfer (NPS SERO)
Phil Hendricks (Masterplanner, design team)
Robyn Zurfluh (PM, design team)
Steve Garrett (VA estimator)
Stephen Kirk (VA facilitator)

6.1 Site Alternatives

Site Option 1: Plan



Site Option 1: Utility Plan



Site Option 2: Plan



Site Option 2: Utility Plan



Site Option 3: Plan



Site Option 3: Utility Plan



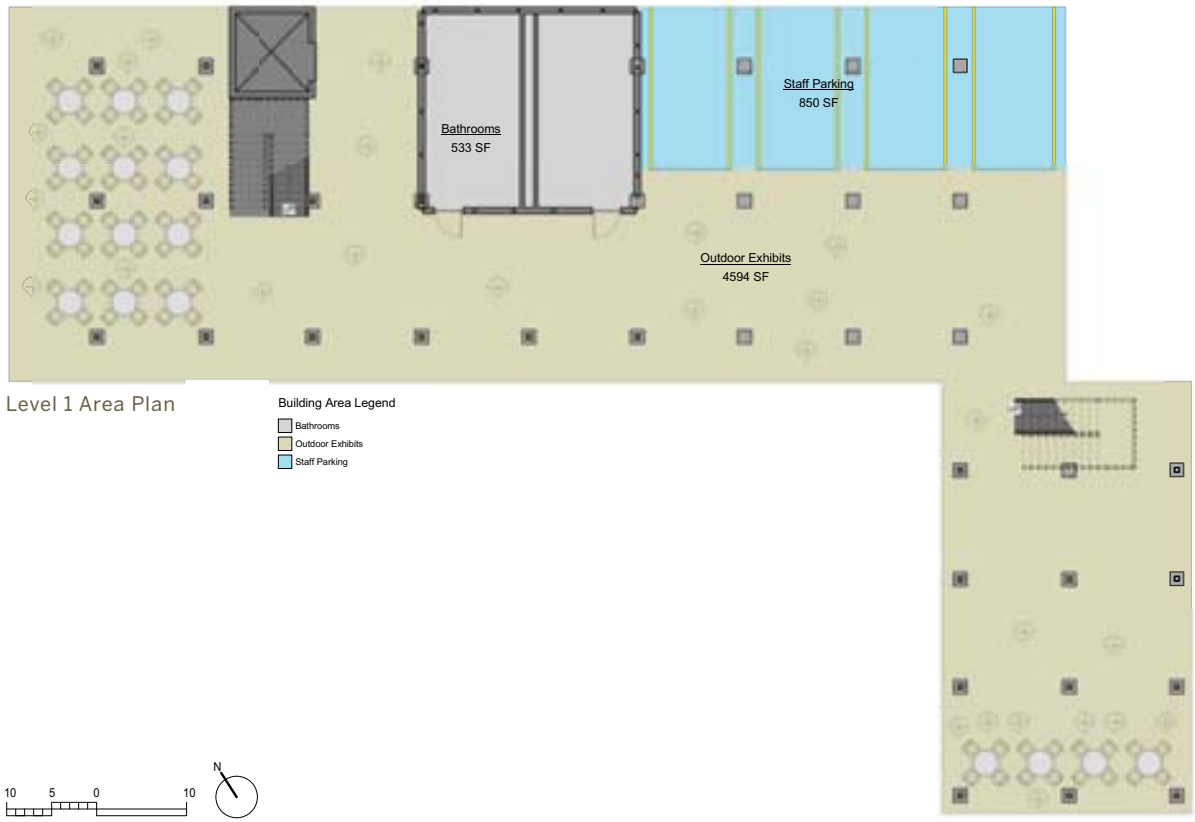
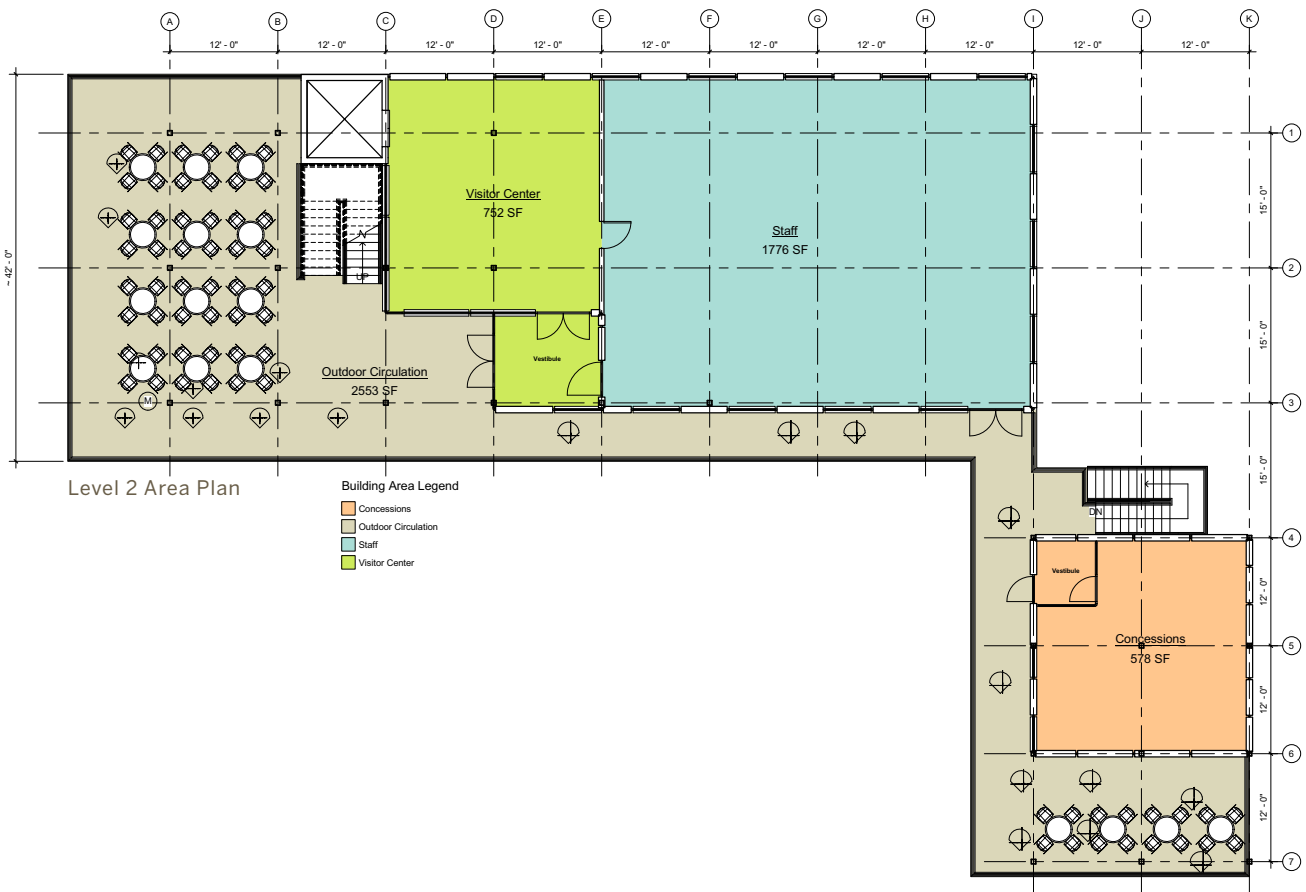
6.2 Building Alternatives

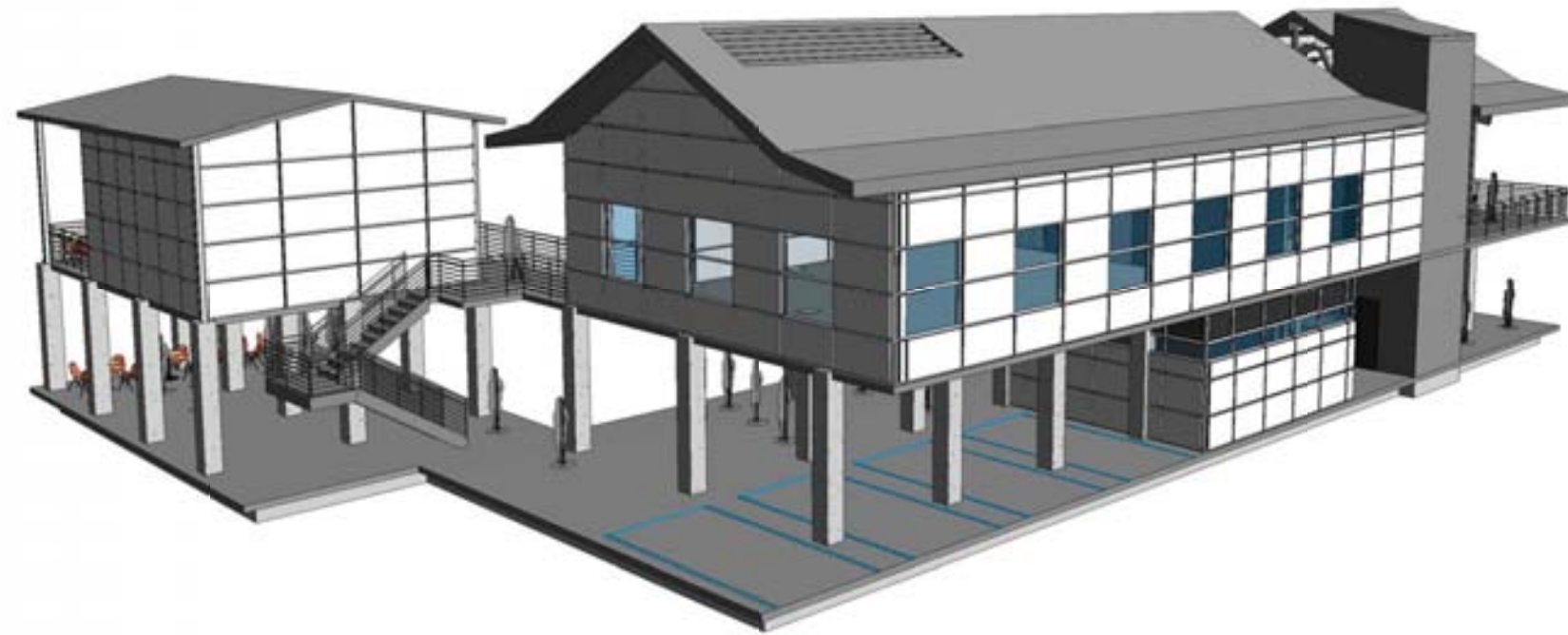
Option 1

Visitor Center separated from Concessions.

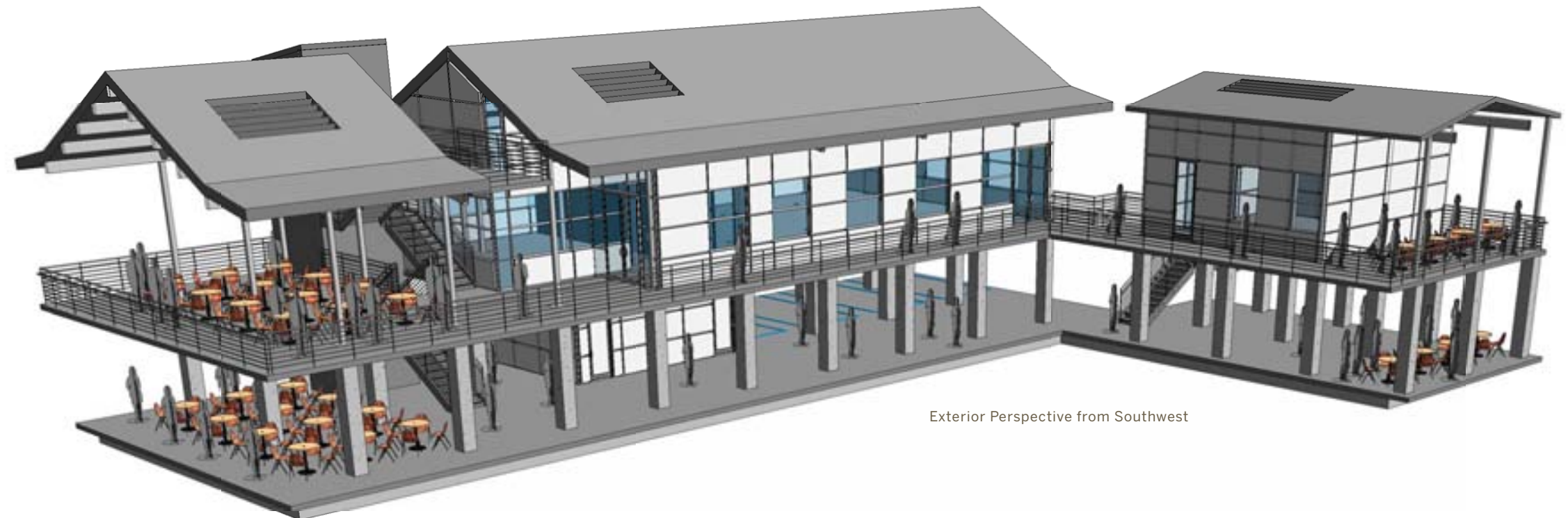
Option 1			Required Program	Open Space
Visitor Center Building				
	Upper Level			
		Visitor Services	752 s. f.	
		Adminstrative	1,776 s. f.	
		Concessions	578 s. f.	
		Observation/ Circulation		2,553 s. f.
	Lower Level			
		Restrooms	533 s. f.	
		Core (Elevator/ Stairs)	460 s. f.	
		Outdoor Exhibits		4,594 s. f.
		Staff Parking (4 spaces)		850 s. f.
Restroom Building				
	Unconditioned, at raised grade			
		Restrooms	250 s. f.	
		Outdoor Showers	50 s. f.	
Storage Building (Marina Basin)				
	Unconditioned, at raised grade			
		Storage	300 s. f.	
Totals			4,699 s. f.	7,997 s. f.

Option 1 Program Area Calculations





Exterior Perspective from Northeast



Exterior Perspective from Southwest

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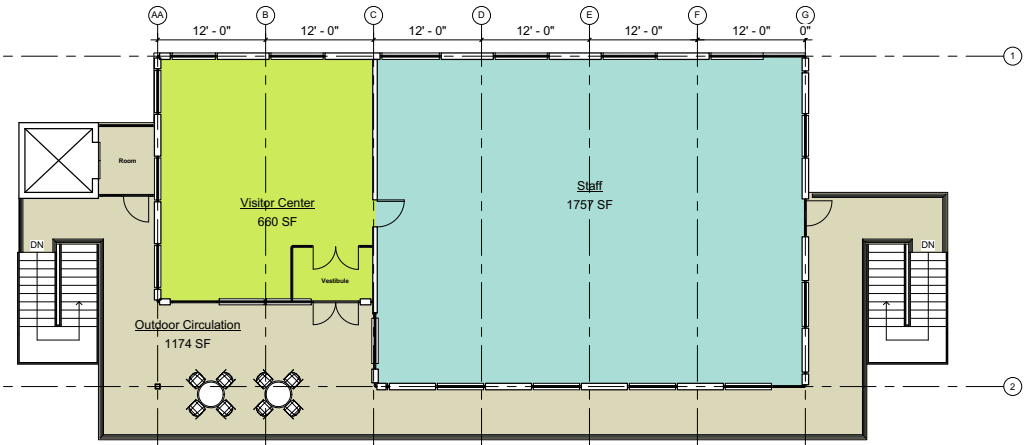
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Option 2

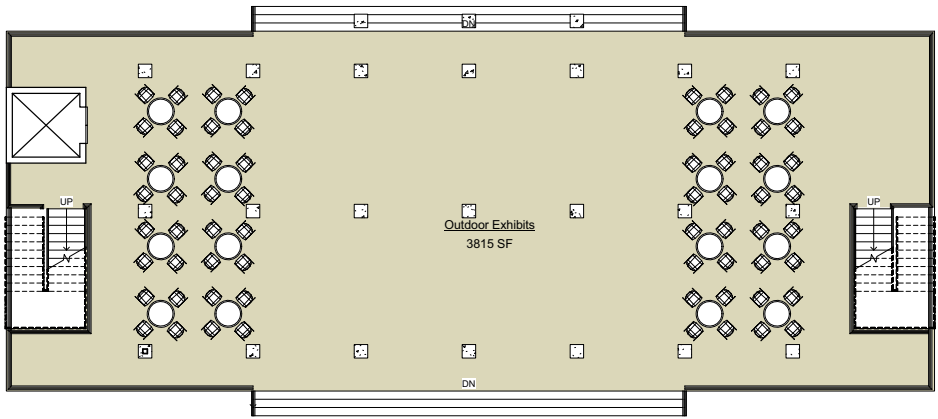
Visitor Center without Concessions

Option 2			Required Program	Open Space
Visitor Center Building				
	Upper Level			
		Visitor Services	660 s. f.	
		Administrative	1,757 s. f.	
		Concessions	0 s. f.	
		Observation/ Circulation		1,174 s. f.
	Lower Level			
		Restrooms	0 s. f.	
		Core (Elevator/ Stairs)	460 s. f.	
		Outdoor Exhibits		3,815 s. f.
		Staff Parking (4 spaces)		0 s. f.
Restroom Building				
	Unconditioned, at raised grade			
		Restrooms	250 s. f.	
		Outdoor Showers	50 s. f.	
Storage Building (Marina Basin)				
	Unconditioned, at raised grade			
		Storage	300 s. f.	
Totals			3,477 s. f.	4,989 s. f.

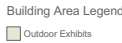
Option 2 Program Area Calculations



Level 2 Area Plan



Level 1 Area Plan





Exterior Perspective from Northeast



Exterior Perspective from Southwest

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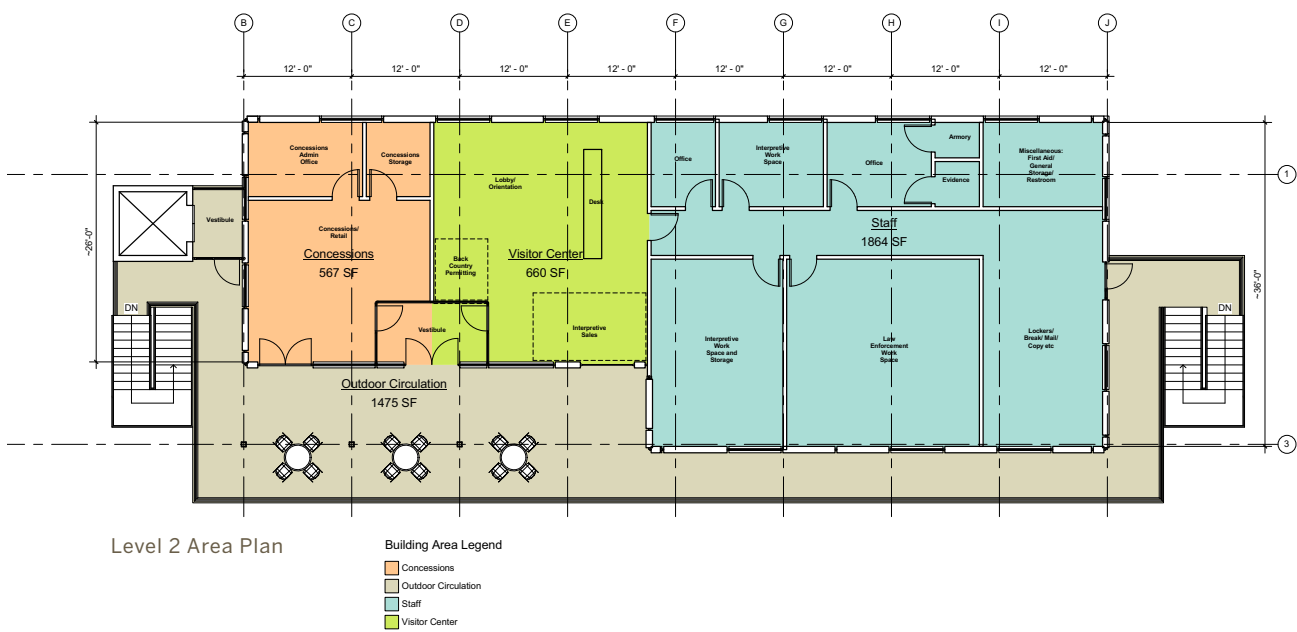
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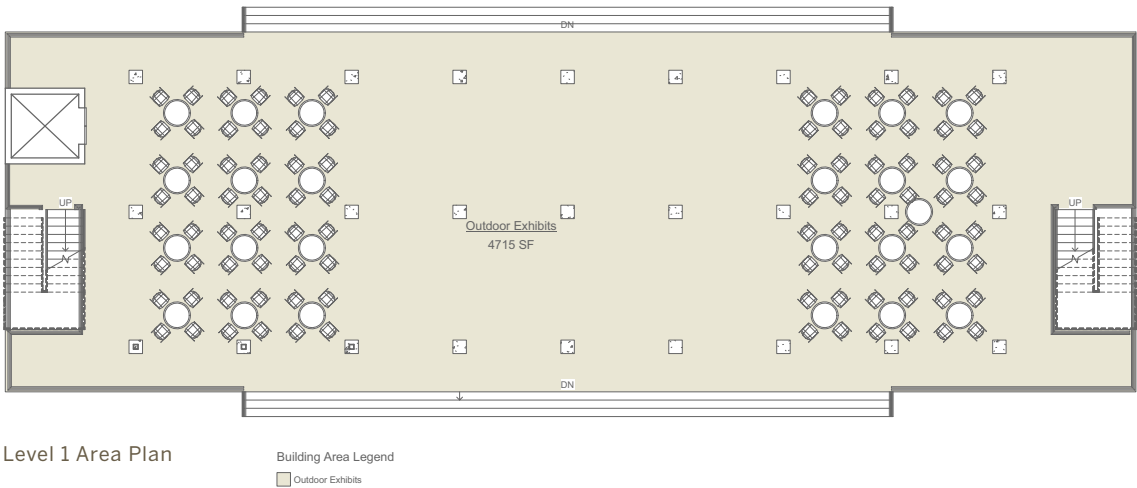
Option 3b

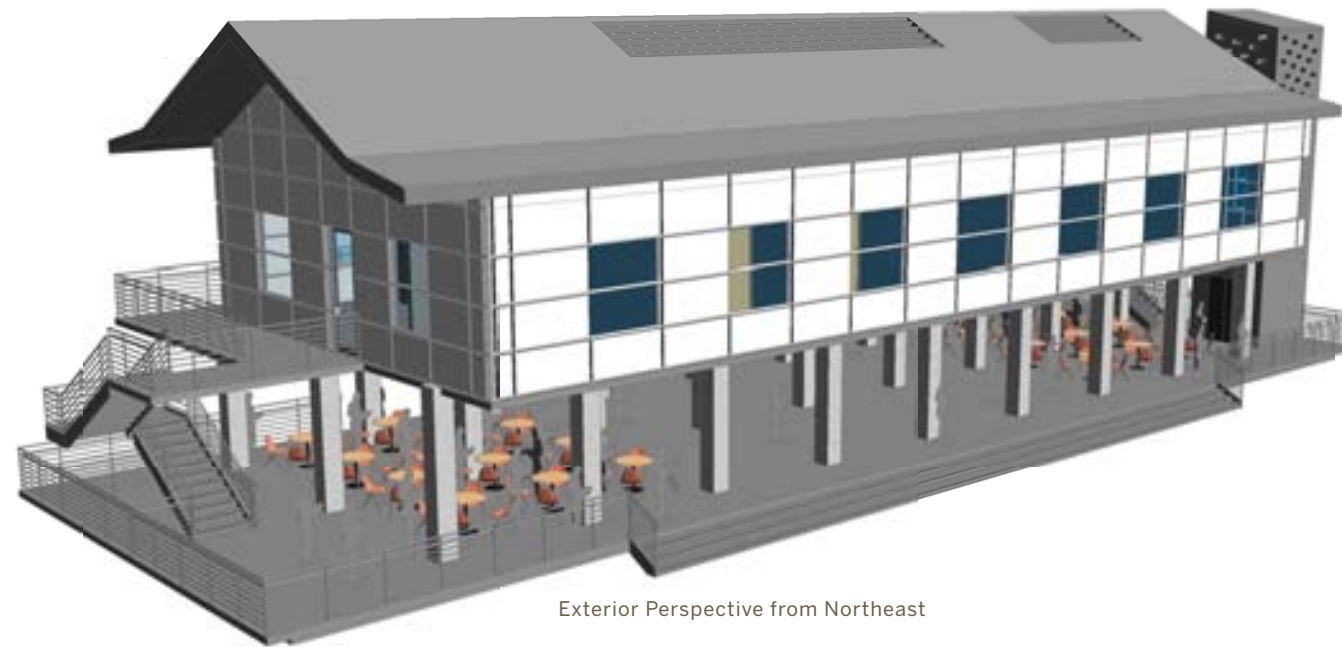
Shared vestibule for Visitor Center and Concessions.



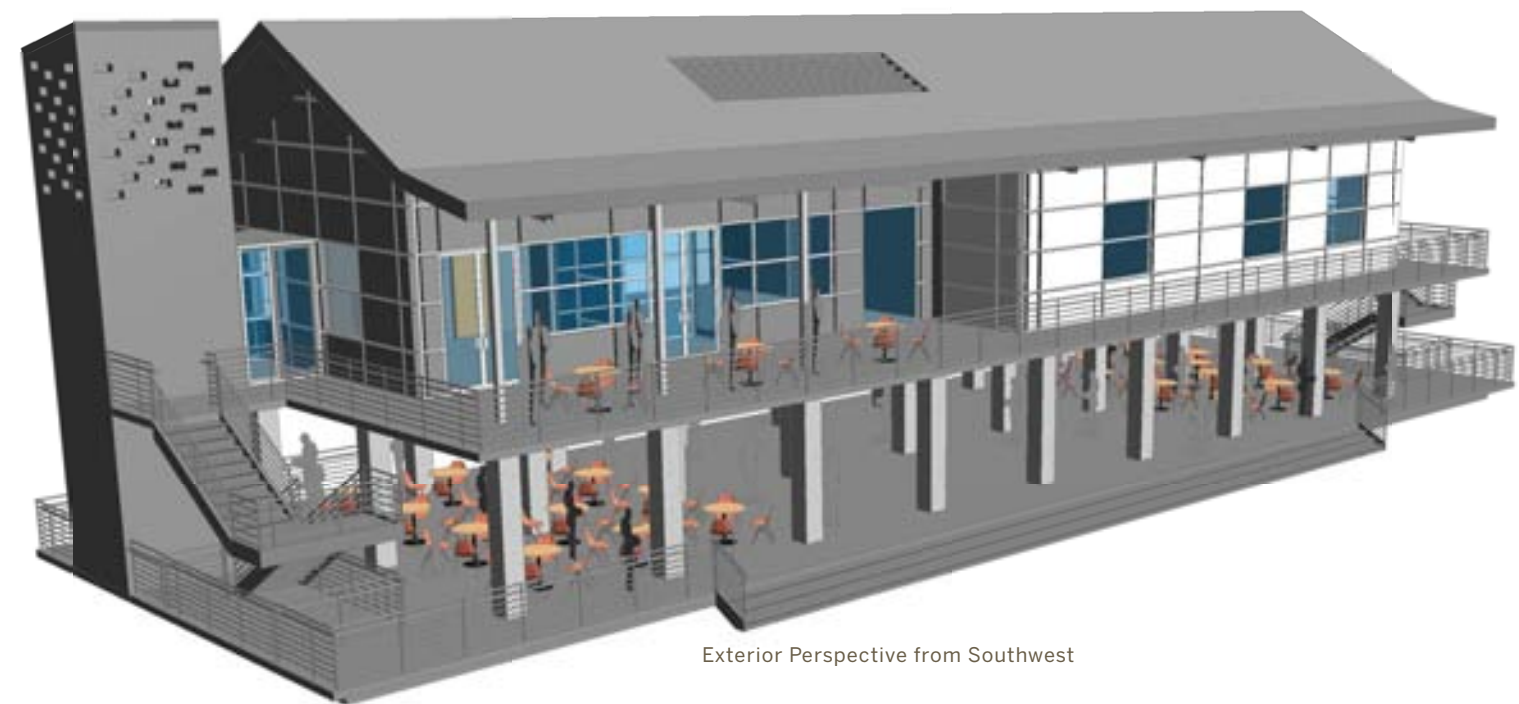
Option 3b			Required Program	Open Space
Visitor Center Building				
	Upper Level			
		Visitor Services	660 s. f.	
		Administrative	1,864 s. f.	
		Concessions	567 s. f.	
		Observation/ Circulation		1,475 s. f.
	Lower Level			
		Restrooms	0 s. f.	
		Core (Elevator/ Stairs)	460 s. f.	
		Outdoor Exhibits		4,715 s. f.
		Staff Parking		0 s. f.
Restroom Building				
	Unconditioned, at raised grade			
		Restrooms	250 s. f.	
		Outdoor Showers	50 s. f.	
Storage Building (Marina Basin)				
	Unconditioned, at raised grade			
		Storage	300 s. f.	
Totals			4,151 s. f.	6,190 s. f.

Option 3b Program Area Calculations





Exterior Perspective from Northeast



Exterior Perspective from Southwest

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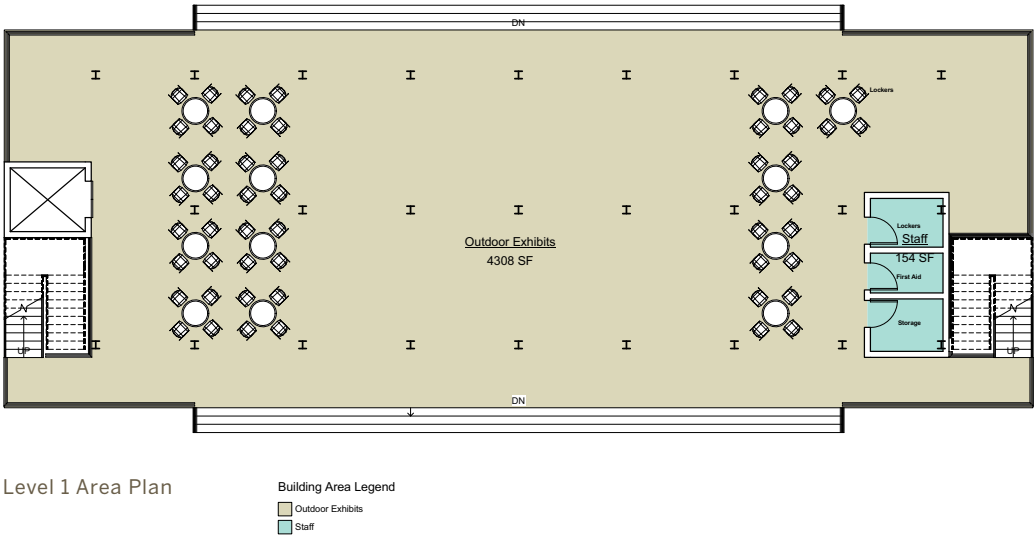
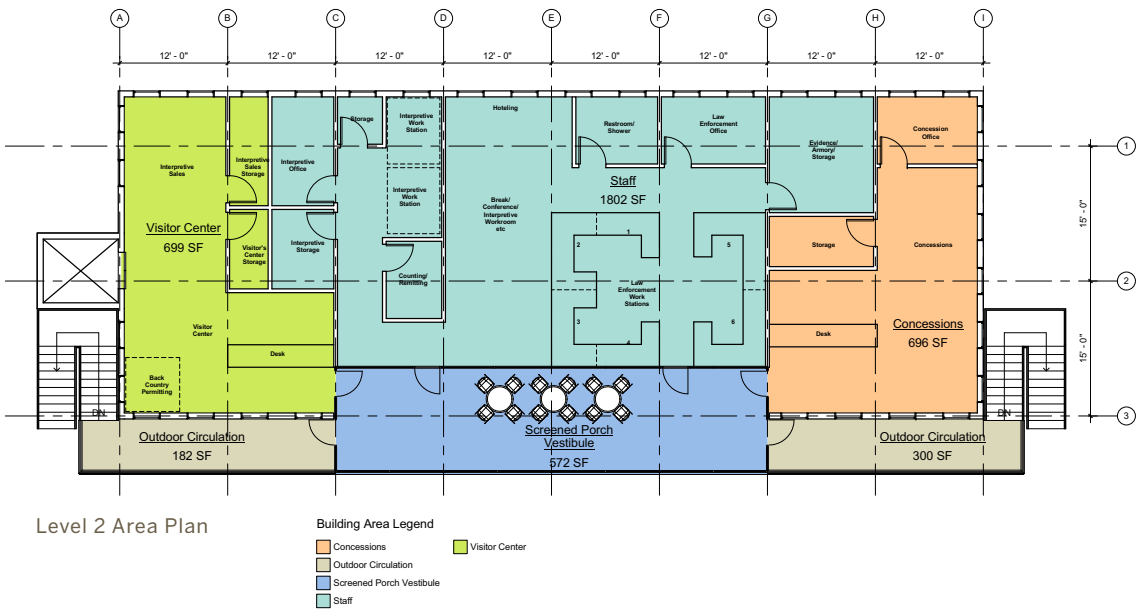
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Option 3c

Shared Porch for Visitor Center and Concessions. Staff centrally located.

Option 3c			Required Program	Open Space
Visitor Center Building				
	Upper Level			
		Visitor Services	699 s. f.	
		Administrative	1,802 s. f.	
		Concessions	696 s. f.	
		Observation/ Circulation		482 s. f.
		Screened Porch		572 s. f.
	Lower Level			
		Restrooms	0 s. f.	
		Core (Elevator/ Stairs)	460 s. f.	
		Outdoor Exhibits		4,308 s. f.
		Staff Lockers/ Strg/ Aid	154 s. f.	
Restroom Building				
	Unconditioned, at raised grade			
		Restrooms	250 s. f.	
		Outdoor Showers	50 s. f.	
Storage Building (Marina Basin)				
	Unconditioned, at raised grade			
		Storage	300 s. f.	
Totals			4,411 s. f.	5,362 s. f.

Option 3c Program Area Calculations





Exterior Perspective from Northeast



Exterior Perspective from Southwest

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6.3 Value Analysis

Summary Description of Project

This project consists of constructing a new Gulf Coast District Visitor Contact Station and Ranger Station building and extensive site work at Everglades National Park in Everglades City, Florida. The new building will replace a 45 year old, two-story, 4,200 SF wood-frame visitor center with a more sustainable facility.

Site work includes:

- Demolition of the existing visitor center and maintenance facility
- Improvements to the canoe/ kayak launch area
- New entry road and parking expansion
- Paving of existing parking areas
- Utilities replacement
- Improvements to day use area
- New rest rooms
- Rebuilding of the seawall
- Landscaping
- Enhanced interpretative trail/amphitheater area

Project Budget

The gross construction budget for the project has not yet been finalized. The VA team used a range of approximately \$10 to \$12 million FY 2013. This includes the new building, smaller structures and site work. Net construction is approximately \$ 8 to 9 million.

Value Analysis Objectives

This VA workshop focused on:

- Select preferred site master plan alternative using Choosing By Advantages (CBA) and Life Cycle Costing (LCC);
- Select preferred visitor contact station/ ranger station building (including concessions) alternative using Choosing By Advantages (CBA) and Life Cycle Costing (LCC);
- Select the preferred alternative for structural system;
- Maximize project performance including durability, flexibility, visitor experience, operational effectiveness, sustainability, resource protection, climate change
- Reduce total cost of ownership; and,
- Develop a comprehensive approach to meeting the current budget (phase I) and also the ultimate master plan (future phase).

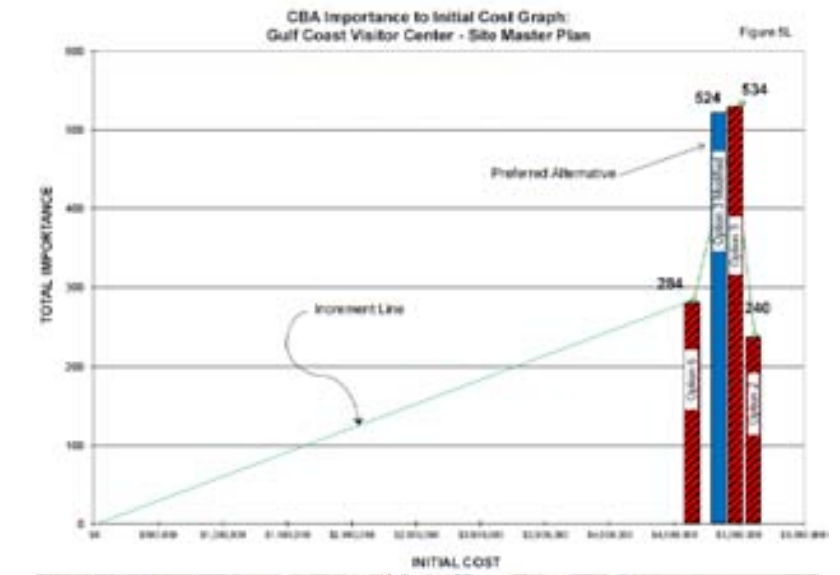
Alternatives Considered (Site Master Plan Layout)

The design team developed three options (alternatives) for the VA workshop. An additional three alternatives were identified during the workshop. These six schemes were then evaluated. Three were evaluated using Choosing By Advantages and Life Cycle Costing.

Preferred Alternative (Site Layout, via CBA)

Option 3 - with modifications - has the following advantages over the other site options:

- Improved Visitor Experience: Expanded vehicle parking area
- Improved Visitor Experience: Visitor center location, sense of place
- Improved Visitor Experience: Impact on recreational services, day use quality, day-use quantity, backcountry shower and restroom
- Improved Site Circulation: Public site entry, orientation to the park
- Improved Education Opportunities: Interpretive opportunities via trail system and amphitheater
- Improved Operational Efficiency: Staff water access for maintenance, law enforcement and trailer storage

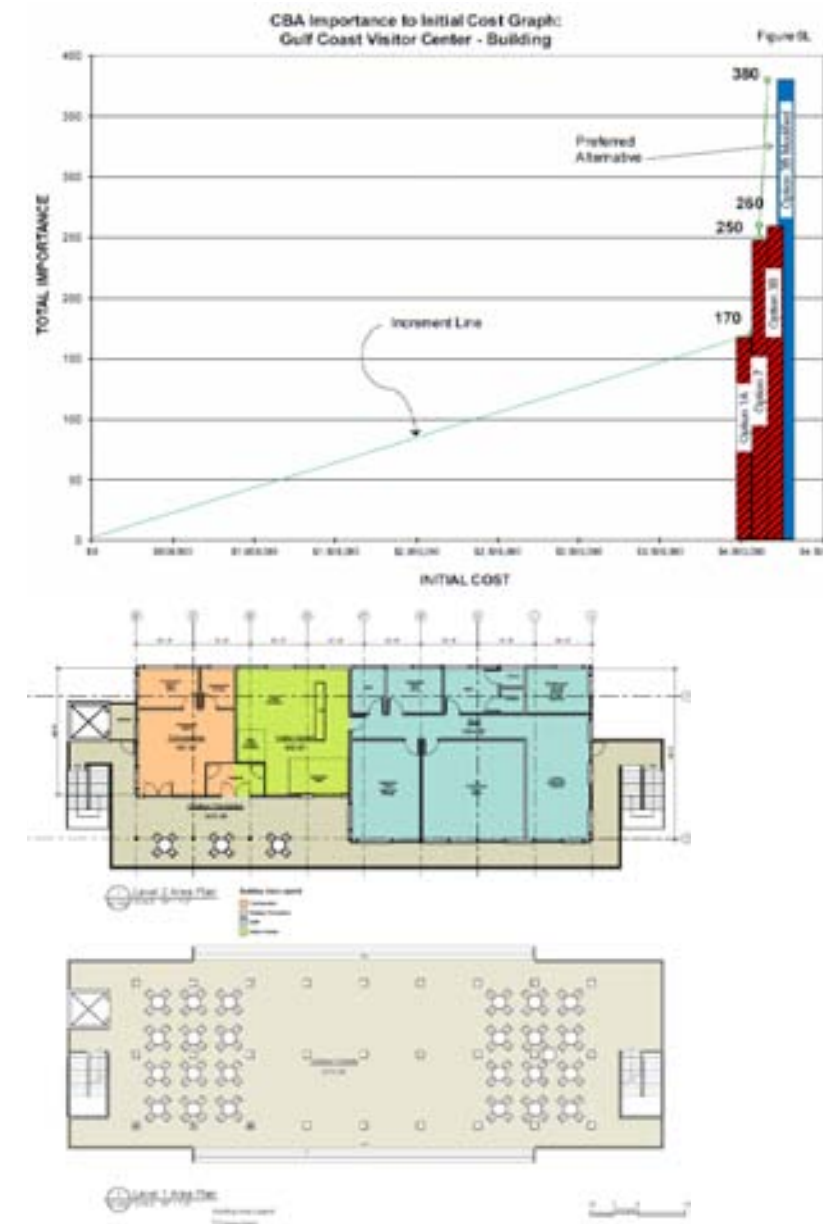


Option 3 Modifications:

- Create single public Site Entry (new location at south property line)
- Maintain existing entry for service and housing
- Use pervious parking surfaces
- Use native landscape materials for reduced maintenance
- Use gravel road at redesigned RV area
- Use phased approach to implementing site masterplan
- Add cost for relocating maintenance to Big Cypress
- Add stabilized canoe launch structure for low tide launching sheet • piles and gravel)
- Improve canoe launch staging, approach and circulation
- Re-use existing shade structure
- Locate infrequently used equipment (trailers) off site
- Add site interpretive features
- Improve site wayfinding (signage)
- Move VC building away from bulkhead to protect existing structure
- Add drive for maintenance from marina basin and quay (create drive through for staff)
- Consider no shower at canoe launch
- Repair seawall (southern portion) within next 5-10 years.
- Seek funding from partners for interpretive elements
- Identify where VC would be relocated in future

Alternatives Considered (Building Layout)

The design team developed four building options for the VA workshop. During the creativity session, the VA team identified seven more alternatives. Some were dismissed as not meeting project requirements. Three were then evaluated using Choosing By Advantages and Life Cycle Costing by the VA team. During the reconsideration phase, a fourth alternative was added. Following is a summary:



Preferred Alternative (Building Layout, via CBA)

Option 3B advantages over the other alternatives included the following:

- A little better at its ability to complete one time move per global warming impact
- Moderately better at improving visitor experience (orientation, synergy)
- A slightly better at improving visitor experience (views via building to water)
- Moderately better at improving relationship to public restrooms
- A little better at leveraging free space under building from program activities
- A little better at improving operational efficiency (horizontal vs. vertical location)
- Slightly less maintenance needs
- Very slightly better at minimizing energy needs
- Moderately better ability to attract concessionaire

Option 3B Building Modifications

- Add restrooms at ground level of building (no separate structure)
- Add viewing platform at roof level
- Identify and relocate program elements that don't need conditioned space
- Add restrooms for concessions staff
- Locate admin storage, lockers, freezer at grade level
- Design restrooms on lower level to be floodable during hurricanes
- Determine concessions monetary contribution for space use
- Use simple roof form
- Minimize individual workstations (provide shared opportunities)

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Summary of Recommendations

The following table, Figure 1, summarizes the VA team recommendations for the project. Two funding approaches are shown.

1. Single Project. The first column shows the site preferred alternative as Option 3 Modified, at a cost of \$4.9 million net construction. The building preferred alternative is Option 3B Modified at a cost of \$4.2 million net construction. Relocation of the maintenance facility and rebuilding of the seawall were not included in the original estimate and were added. The irrigation system was removed for a savings of \$400,000. Together, this is a total of \$9.4 million in FY 2013.
2. Phased Project. The second two columns show items selected by the VA team that must be included in phase I of this project. For site, this totals \$3.4 million. Future phasing adds another \$1.8 million to the site cost. The building is needed immediately and is therefore shown as part of the phase I work. Together, this is a phase I total of \$7.6 million in FY 2013.

Depending on management priorities and funding constraints, these two funding approaches allow a strategy for moving the project forward and ultimately achieving the master plan goals for the project.

	Single Project	Phased Project	
		Phase I	Future Phase
SITE:			
Preferred Alternative, Option 3 Modified	\$4,919,100	\$3,434,100	\$1,785,000
<u>Potential Scope for Site:</u>			
Improve Canoe Area Launch (site)		\$100,000	\$0
Canoe Launch, Relocate Maint. (not in orig. estimate)	\$300,000	\$300,000	\$0
Improve Canoe Area Launch (canoe launch structure)		\$200,000	\$0
Paving (new entry road at current location)		\$150,000	\$0
Development / Changes to RV Park, future phase		\$0	\$600,000
Paving (canoe / kayak parking)		\$100,000	\$350,000
No Irrigation (\$400,000 savings from earlier estimate)	(\$400,000)	\$0	\$0
Landscape, reduced phase 1		\$100,000	\$250,000
Paving (parking at VC = 28, staff = 6, need 100 VC, create 28 paved + 22 gravel, 50 future)		\$384,100	\$200,000
Paving (expanded welcome center)		incl. above	\$0
Utilities (replace all)		\$975,000	\$0
Public Realm (day use area, visitor plaza)		\$675,000	\$225,000
Interpretive Trail / Amphitheater		\$0	\$110,000
Site Demo (including existing VC)		\$50,000	\$50,000
Rebuild Seawall (not in original estimate)	\$400,000	\$400,000	\$0
BUILDING:			
Preferred Alternative, Option 3B Modified	\$4,159,400	\$4,159,400	\$0
<u>Potential Scope for New Building:</u>			
Visitor Contact Station			
Ranger Station			
Concessions (shelled space, concessionaire to finish)			
Viewing area			
Exhibits			
Public Toilets (ground floor)			
Total (Net Construction 2013):	\$9,378,500	\$7,593,500	\$1,785,000
Total (Gross Construction 2013): 1.3	\$12,192,050	\$9,871,550	\$2,320,500

7.0 preferred alternative



View from water looking north towards existing Marina and Visitor Center

The Value Analysis (VA) resulted in a Preferred Alternative for the site and the building based on qualitative and quantitative analysis of many different project components. The VA session also provided significant data and costs for the overall project. The project team analyzed all of the information generated to date to ensure that the project plan reflected the vision for a right sized, modest, efficient and durable development. It was determined by the team and directed by the park that the Final Preferred Alternative is to be scaled back significantly from the VA Preferred Alternative to reflect this vision and to contain costs. The following pages illustrate a development that meets the essential needs of the site while minimizing the built footprints and maximizing the agency's investment. Phased Construction estimates are provided to quantify the investments required for the work.

There are two phases to the preferred development. The phasing is contemplated primarily to account for timing associated with concessions contract. The first phase constructs a new building with visitor center and administrative space with exterior interpretive plaza, provides a new utility infrastructure, improves the canoe/kayak launch and parking area, constructs a hardened canoe launch and repaves existing roadways with a few additional parking spaces. The second phase demolishes the existing buildings (Visitor Center and Maintenance), constructs additional building area for concessions, constructs a picnic/day use area, completes the canoe/kayak area improvements, constructs a small waterborne maintenance area and improves the RV camping area.

Masterplanning is scaled back to visitor service areas and existing vehicular areas. The existing marina and waterborne functions remain in their current location and configuration. Existing site infrastructure is aged and scheduled for replacement in Phase I. Existing buildings and infrastructure are planned to remain in place and in service until such time as the new is completed. New site areas are contained within an efficient footprint and are primarily focused on enhancing visitor experience for both day users and neighbors in nearby Everglades City. Raised grades for the site and seawall have been contemplated to protect the development from potential sea rise and additional first costs for this choice are provided along with project estimates. At this time, park leadership is committed to maintaining existing grades in Phase I as a practical matter (current grades are consistent with the surrounding community, including the main access road) and as a means to save first costs at this time.

Building planning centers on efficiency and durability. Economies are maximized on all fronts -- interior includes only what is necessary and is supplemented by intentional and comfortable outdoor spaces. The result is an "inside-out" approach to designing for visitor education, focused on immersion and experience of the park proper. Modular concrete construction minimizes construction schedules and minimizes waste. Should climate conditions or water levels dictate it, it is possible to disassemble and reassemble the structure. The building location allows for "simple" additions (which mean that cleared site area is adjacent and available) to extend the footprint to the east if future needs dictate additional space requirements.

7.1 Site Design

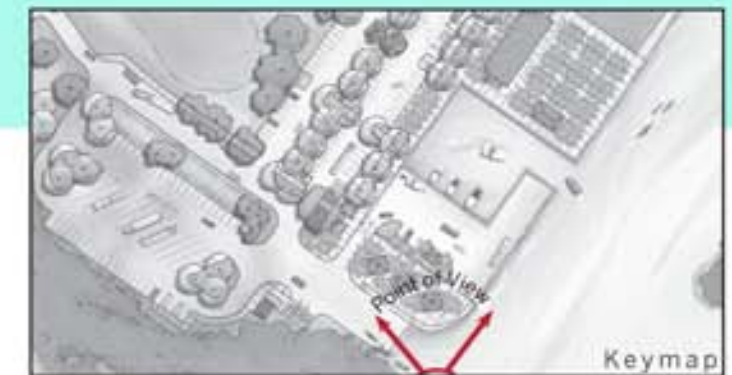
Site Design Plan



- | | | | | |
|--|---|--|--|--|
| <p>1 Proposed Visitor Contact and Ranger Station</p> <ul style="list-style-type: none"> • Concessioner Operations • Restroom Module Below Building <p>2 Existing Shade Shelter</p> <ul style="list-style-type: none"> • Boat Tour Staging Area/Day Use <p>3 Proposed Visitor Plaza</p> <ul style="list-style-type: none"> • Exterior Interpretive Exhibits • Shade (Native Palm) Trees • Landscape/Bioswale Areas <p>4 Proposed Pedestrian Promenade</p> <ul style="list-style-type: none"> • Exterior Interpretive Exhibits • Shade (Native Palms and Oaks) Trees • Landscape/Bioswale Areas | <p>5 Renovated Secured Marina Area</p> <ul style="list-style-type: none"> • Storage Building (Water Operations) • Vehicle Parking (4) • Fenced Perimeter with Gates • Boat Fueling • Boat Davit Crane <p>6 Proposed Day Use Area</p> <ul style="list-style-type: none"> • Exterior Interpretive Exhibits • Shade (Native Palm) Trees • Landscape/Bioswale Areas • Shade Structures <p>7 Proposed Canoe/Kayak Support Area</p> <ul style="list-style-type: none"> • Restroom, Shower and Storage Building • Concession Canoe/Kayak Trailer Parking | <p>8 Proposed Canoe/Kayak Launch Ramp</p> <ul style="list-style-type: none"> • Paved Ramp • Improved Hardened Subgrade Below Waterline <p>9 Proposed Secured Maintenance Area</p> <ul style="list-style-type: none"> • Storage Building (Land Operations) • Vehicle Parking (3) • Large Vehicle Parking (3- 12'x50') • Fenced Perimeter with Gates <p>10 Renovated Volunteer/Staff Campground</p> <p>11 Existing Staff Housing</p> <p>12 Existing Marina Basin and Seawall</p> <p>13 Existing Seawall with Rip Rap Reinforcement</p> | <p>14 Renovated/Existing Parking Lot</p> <ul style="list-style-type: none"> • Public Vehicle Parking (103 Spaces) • ABA Parking (5 Spaces) • Government Vehicle Parking (9 Spaces) • Bus Drop Off Area • Paved Parking Surface • Wheel Stop Parking Area Delineation <p>15 Proposed Canoe/Kayak Parking Lot</p> <ul style="list-style-type: none"> • Public Vehicle Parking (38 Spaces) • ABA Parking (3 Spaces) • Oversized Vehicle Parking (15 Spaces) • Government Vehicle Parking (3 Spaces) • Reinforced Turf Grass Surfacing • Wheel Stop Parking Area Delineation | <p>16 Proposed Bus/Large Vehicle Parking</p> <p>17 Existing Dump Site</p> <p>18 Proposed Stormwater Detention Basin</p> <p>19 Proposed NPS Site Identification Sign</p> <p>20 Renovated/Existing Access Road</p> <p>21 Proposed Accessible Connector Trail</p> <p>22 Proposed Accessible Interpretive Trail Network</p> |
|--|---|--|--|--|



Boater's View of Day Use Area and Kayak Launch

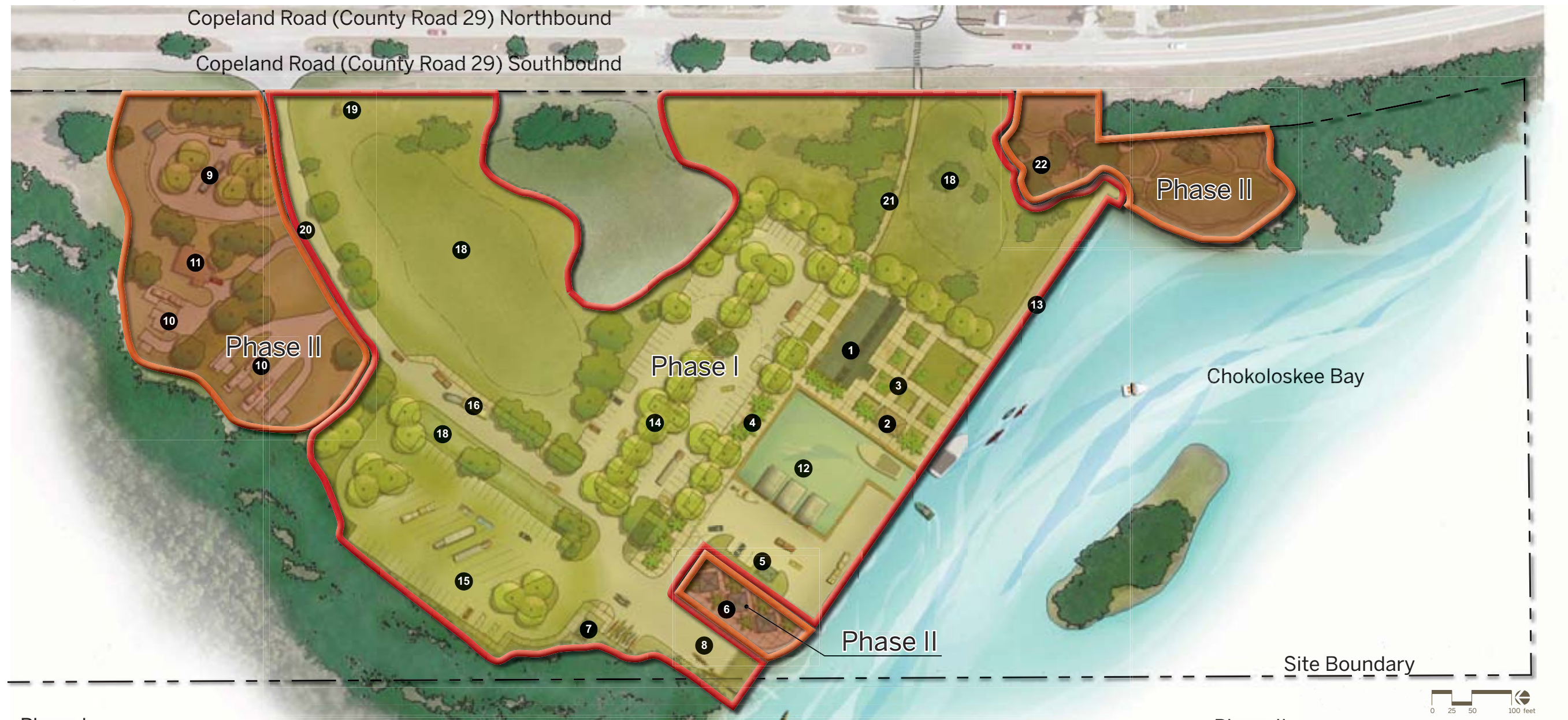


Site Utility Plan





Phasing Plan



Phase I

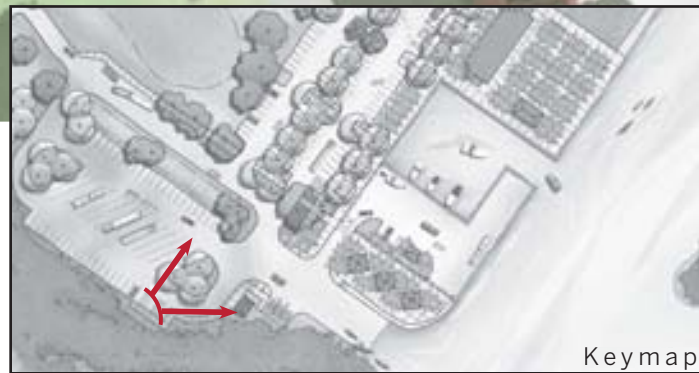
- | | |
|--|--|
| <p>1 Proposed Visitor Contact and Ranger Station</p> <ul style="list-style-type: none"> • Concessioner Operations • Restroom Module Below Building <p>2 Existing Shade Shelter</p> <ul style="list-style-type: none"> • Boat Tour Staging Area/Day Use <p>3 Proposed Visitor Plaza</p> <ul style="list-style-type: none"> • Exterior Interpretive Exhibits • Shade (Native Palm) Trees • Landscape/Bioswale Areas <p>4 Proposed Pedestrian Promenade</p> <ul style="list-style-type: none"> • Exterior Interpretive Exhibits • Shade (Native Palms and Oaks) Trees • Landscape/Bioswale Areas | <p>5 Renovated Secured Marina Area</p> <ul style="list-style-type: none"> • Storage Building (Water Operations) • Vehicle Parking (4) • Fenced Perimeter with Gates • Boat Fueling • Boat Davit Crane <p>7 Proposed Canoe/Kayak Support Area</p> <ul style="list-style-type: none"> • Restroom, Shower and Storage Building • Concession Canoe/Kayak Trailer Parking <p>8 Proposed Canoe/Kayak Launch Ramp</p> <ul style="list-style-type: none"> • Paved Ramp • Improved Hardened Subgrade Below Waterline <p>12 Existing Marina Basin and Seawall</p> |
|--|--|

- 13** Existing Seawall with Rip Rap Reinforcement
- 14** Renovated/Existing Parking Lot
- Public Vehicle Parking (103 Spaces)
 - ABA Parking (5 Spaces)
 - Government Vehicle Parking (9 Spaces)
 - Bus Drop Off Area
 - Paved Parking Surface
 - Wheel Stop Parking Area Delineation

- 15** Proposed Canoe/Kayak Parking Lot
- Public Vehicle Parking (38 Spaces)
 - ABA Parking (3 Spaces)
 - Oversized Vehicle Parking (15 Spaces)
 - Government Vehicle Parking (3 Spaces)
 - Reinforced Turf Grass Surfacing
 - Wheel Stop Parking Area Delineation
- 16** Proposed Bus/Large Vehicle Parking
- 18** Proposed Stormwater Detention Basin
- 19** Proposed NPS Site Identification Sign
- 20** Renovated/Existing Access Road
- 21** Proposed Accessible Connector Trail

Phase II

- 6** Proposed Day Use Area
- Exterior Interpretive Exhibits
 - Shade (Native Palm) Trees
 - Landscape/Bioswale Areas
 - Shade Structures
- 9** Proposed Secured Maintenance Area
- Storage Building (Land Operations)
 - Vehicle Parking (3)
 - Large Vehicle Parking (3- 12'x50')
 - Fenced Perimeter with Gates
- 10** Renovated Volunteer/Staff Campground
- 11** Existing Staff Housing
- 22** Proposed Accessible Interpretive Trail Network



Bird's Eye View of Gulf Coast Visitor Center

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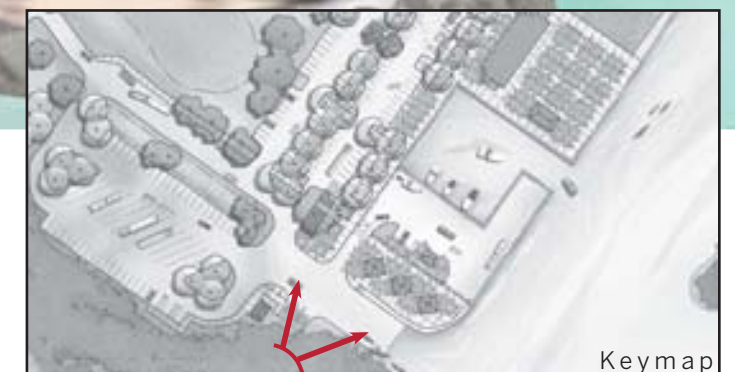
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Bird's Eye View of Day Use Area



Keymap

7.2 Building Preferred Alternative

Narrative

The preferred alternative for the NPS Gulf Coast Visitor Center is the result of a number of discussions with the client and design team. Initial schemes were evaluated in a series of workshop discussions involving a number of different project constituents. The preferred alternative is based on these discussions as well as subsequent comments and discussions between the group.

The building’s design aesthetic takes its cue from the local architecture in the Everglades City area. The building is linear with a pitched roof recalling the typical Cracker house style. Substantial shaded outdoor walkways are included at ground level and Level 2 allowing protection from the sun while enabling breezes to pass through and facilitating views to the scenic water and landscape beyond. Roofs extend beyond the building perimeter to provide shading for the windows. Recycled synthetic planks recall local boardwalks in nearby coastal areas. Light, subtle colors are selected for the building in an effort to reflect sunlight and to not overshadow the beautiful scenery of the area. The top of the elevator shaft incorporates an interior and exterior louver, facilitating the exhaust of rising warm air in the entry lobby. The elevator tower is suggestive of lighthouse architecture which can be found along the Gulf Coast.

The building is designed with efficiency and clarity in mind. Its perimeter is compact, minimizing areas of conditioned space. Circulation is established in a rational way by two main linear circulation paths perpendicular to one another. Recessed walls and raised roof at the core give legibility to the entry location from a distance. The main upper level spaces are formed with modular concrete construction to minimize on site labor time and costs and to facilitate future relocation. The main public spaces of Visitor Center and Concessions are directly accessible from the sheltered core. Administrative spaces have secure access, either by way of the Visitor Center reception desk or a security access door near the eastern egress stair of the building. Within the Admin area offices and work stations are situated near windows to maximize comfort and natural light.

Responding to harsh storm conditions in the area is an important factor as well. The main structure is elevated above the flood plane by concrete columns on piles that extend to bedrock below, giving rigid stability to the building. Pivoting and coiling hurricane shutters are provided to help protect glazed and screened surfaces in the event of a storm. The bottom level of the entry core incorporates a surge wall to minimize water penetrates from storms.

The main exterior materials are selected for durability in the harsh climate. This includes a standing seam metal roof; stucco coating, glazing with low-e coatings to suppress solar radiant heat flow, aluminum wall panels and railings, exposed concrete structure and slab, exposed concrete masonry block, and aluminum screening in vertical circulation allow air to pass through while protecting against mosquitoes.

The building is designed to be constructed of pre-fabricated modular concrete construction modules. The bays for the units are 12’ wide to facilitate shipment from the factory to the site. Where possible, interior walls are located align with module divisions. It is anticipated that as much of the construction as possible will take place in the factory which should lead to overall costs savings while maintaining quality control. Also, this type of construction will aid in relocating the building inland at a later date should sea level rise dicate a move

It is anticipated that the project will be constructed in 2 phases. In phase 1, the majority of the permanent structure will be installed. Also, a temporary deck will be made directly west of the core. Phase 2 will involve removal of this deck to be replaced by permanent installation of modular Concessions structures.

A number of energy saving measures are incorporated into the building design. Overall conditioned volume is minimized, limiting it to the Visitor Center, Administration, and Concessions spaces. The lower level bathrooms will be naturally ventilated with perhaps a minor connection to the upper level mechanical system to temper the air during the hottest of seasons. A 20 KW photovoltaic array is integrated into the roof to take advantage of the energy from the sun. A geothermal system is envisioned with a water source heat pump hung in the attic space above . No exterior equipment for this system is anticipated to aid in longevity of use. It is anticipated that these measures will help the building to achieve 49% greater energy efficiency than baseline code minimum requirements, based on initial energy model testing.

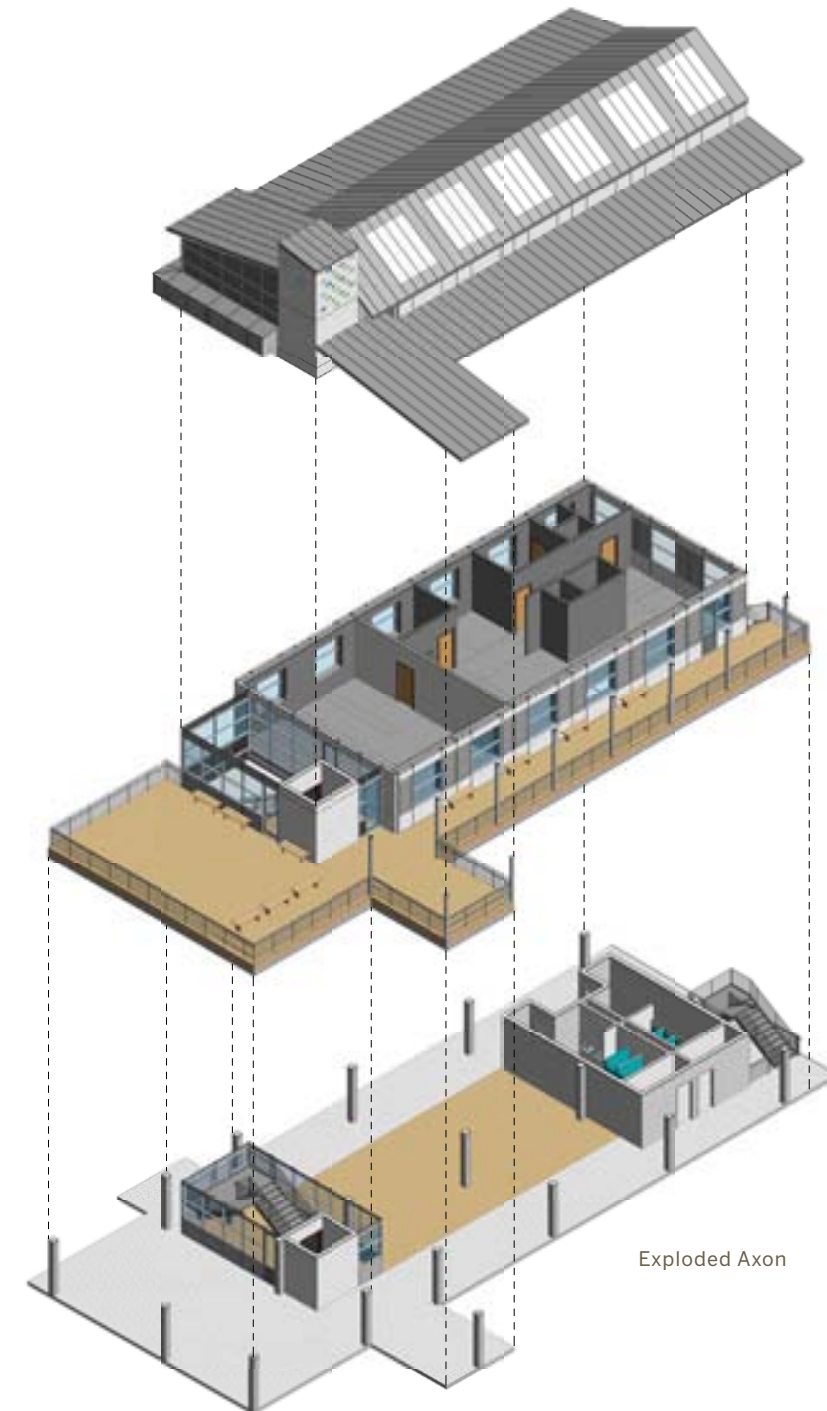
The preferred alternative design for the NPS Gulf Coast Visitor Center is designed in a responsible way to best meet client functional needs and to maximize efficiency and mobility. It also seeks to establish itself as a beautiful, elegant landmark to attract visitors and raise awareness of the Everglades and missions of the National Park Service.

Major Design Approaches

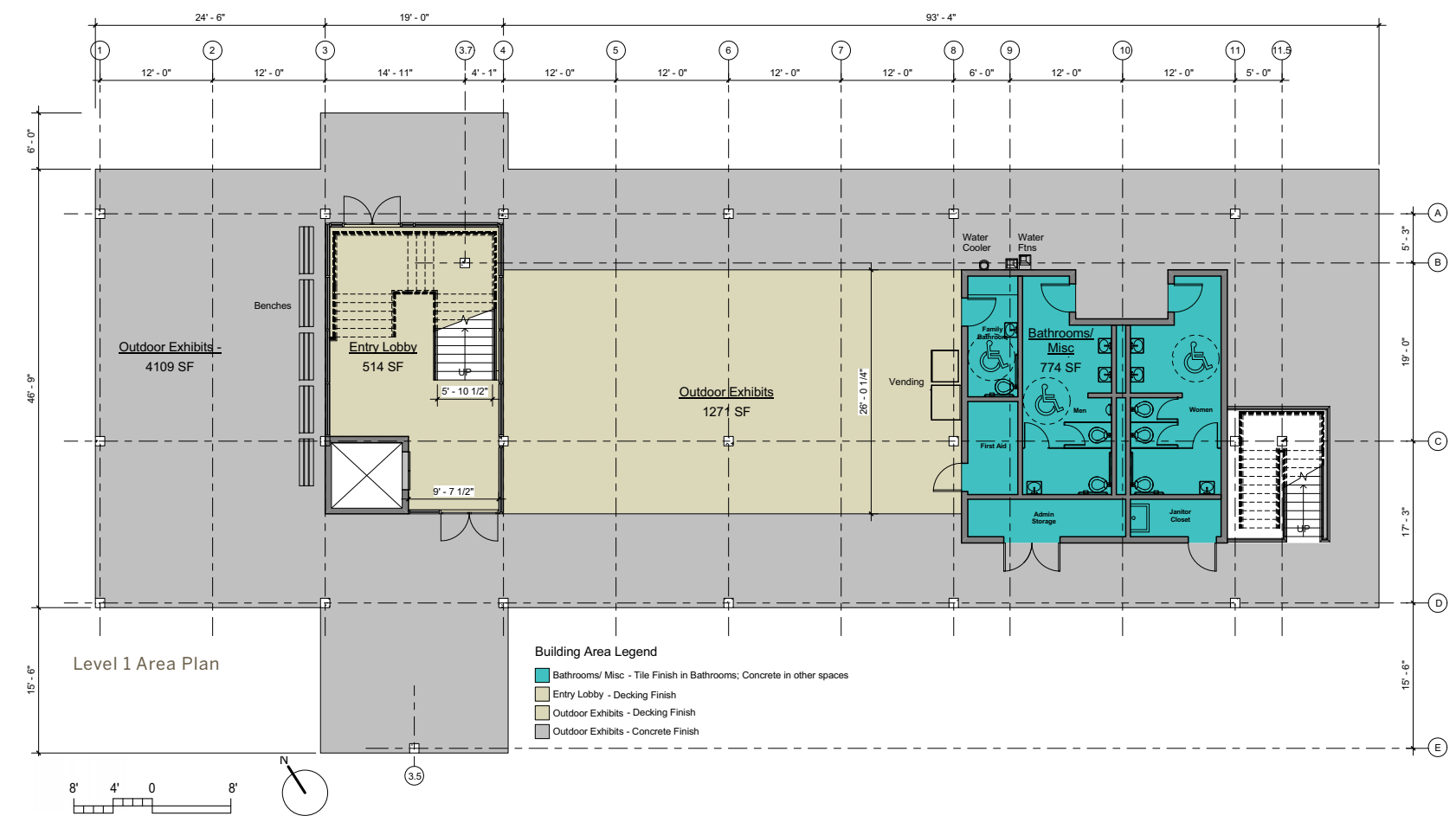
- Compact building footprint maximizing efficiency
- Raised concrete grid foundation on pre-cast piles
- Centralized open air core facilitating natural ventilation
- Pre-cast Concrete modules delivered to site with factory installed walls, windows, doors, finishes, and MEP elements
- Robust insulation maximizing energy efficiency
- Field installed standing seam metal roof
- Roof mounted 20 KW photovoltaic array
- Geothermal system
- Hurricane shutters integrated into facades
- Recycled composite board walk flooring system

Phase 1: With Temporary Deck; no Concessions

Visitor Center separated from Concessions.



Exploded Axon



Preferred Alternative Program: Phase 1 - with Temporary Deck			EVER 156680 Program		Tare		Preferred Alternative with 25% Tare		
				25%	Area		Enclosed Space	Screened Open Space	Open Space
Visitor Center Building									
	Conditioned Enclosed Space, at Level 2								
		Visitor Services (Level 2)	653 s. f.	25%	871 s. f.		830 s. f.		
		Administrative (Levels 1 & 2)	1,560 s. f.	25%	2,080 s. f.	*	2,005 s. f.		
		Concessions (Level 1)	570 s. f.	25%	760 s. f.	**	0 s. f.		
		Core: Elevator	60 s. f.	25%	80 s. f.		71 s. f.		
Unconditioned Enclosed Space, at raised grade									
		Comfort Stations	564 s. f.	25%	752 s. f.				
		Comfort Station #1: Visitor Center (Level 1)				***	622 s. f.		
		Women							
		3 Toilets							
		2 Lavatories							
		Men							
		2 Toilets							
		1 Urinal							
		2 Lavatories							
Open or Screened Space at raised grade and Level 2									
		Core: Stairs, & Entry Lobbies (Levels 1 & 2)					755 s. f.		158 s. f.
		Phase 1 Temporary Deck (Level 2)							** 834 s. f.
		Outdoor Exhibits (Level 1)							5,380 s. f.
		Outdoor Circulation (Level 2)							1,412 s. f.
Restroom Building									
Unconditioned Enclosed Space, at raised grade									
		Comfort Station #2: Restroom Building				***	263 s. f.		
		Women							
		2 Toilets							
		2 Lavatories							
		# Outdoor Showers							
		Men							
		2 Toilets							
		1 Urinal							
		2 Lavatories							
		# Outdoor Showers							
Storage Building (Marina Basin)									
Unconditioned Enclosed Space, at raised grade									
		Storage (Level 1)	225 s. f.	25%	300 s. f.		300 s. f.		
Sub Total for Primary Program Areas							3,791 s. f.		
							+ 439 s. f.	(Covered Core contributing to TARE)	
Totals			3,632 s. f.		‡ 4,900 s. f.		‡ 4,100 s. f.	† 760 s. f.	‡ 7,800 s. f.

* Administration area is less than Park suggested area - related to regular 12' wide pre-fab modules sized for mobility

** Temporary Deck installed during Phase 1 to be replaced by permanent Concessions during phase 2

*** Total Restroom fixtures are reduced from the Park suggested program per request by client.

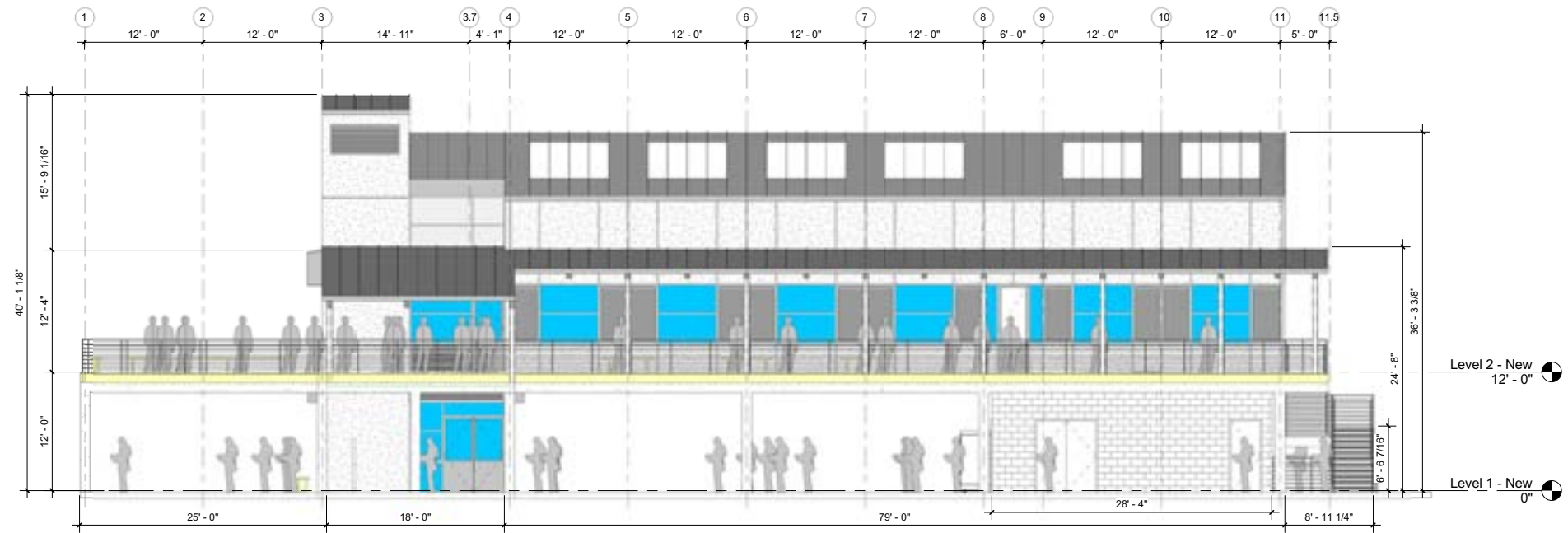
‡ Rounded up to next hundred

† Rounded to nearest ten

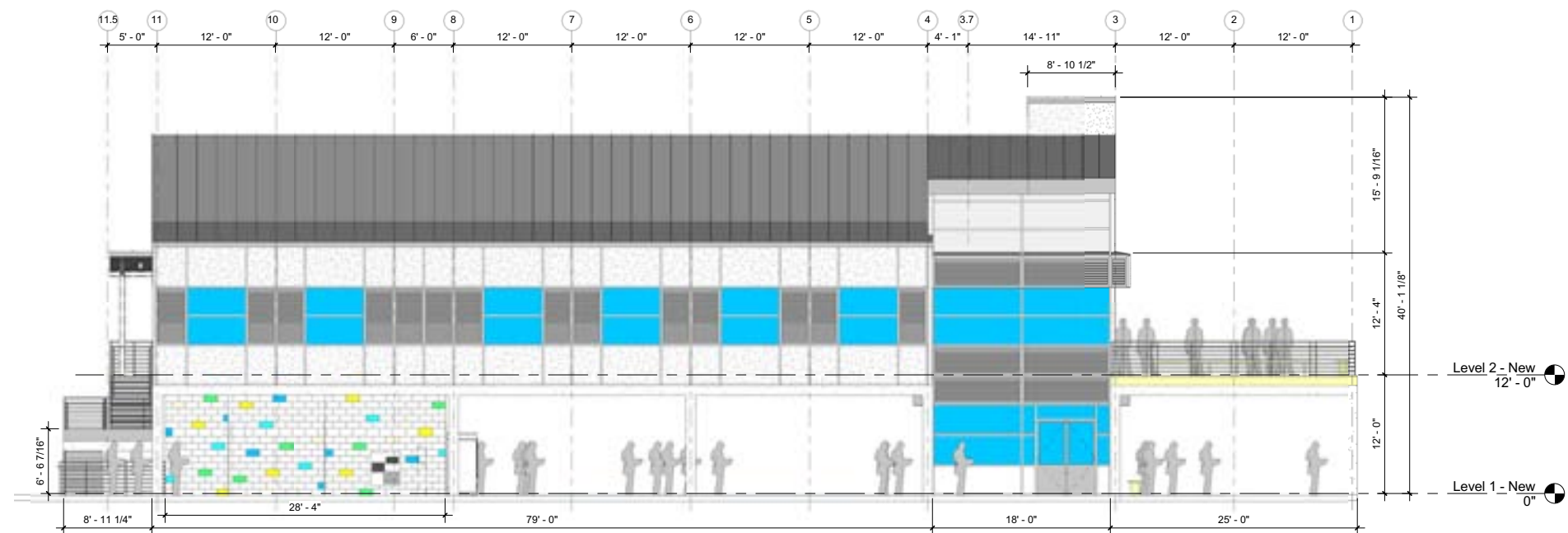
Blue Text: Park Suggested Program Total Area

Orange Text: Preferred Alternative Program areas contributing to Total Program

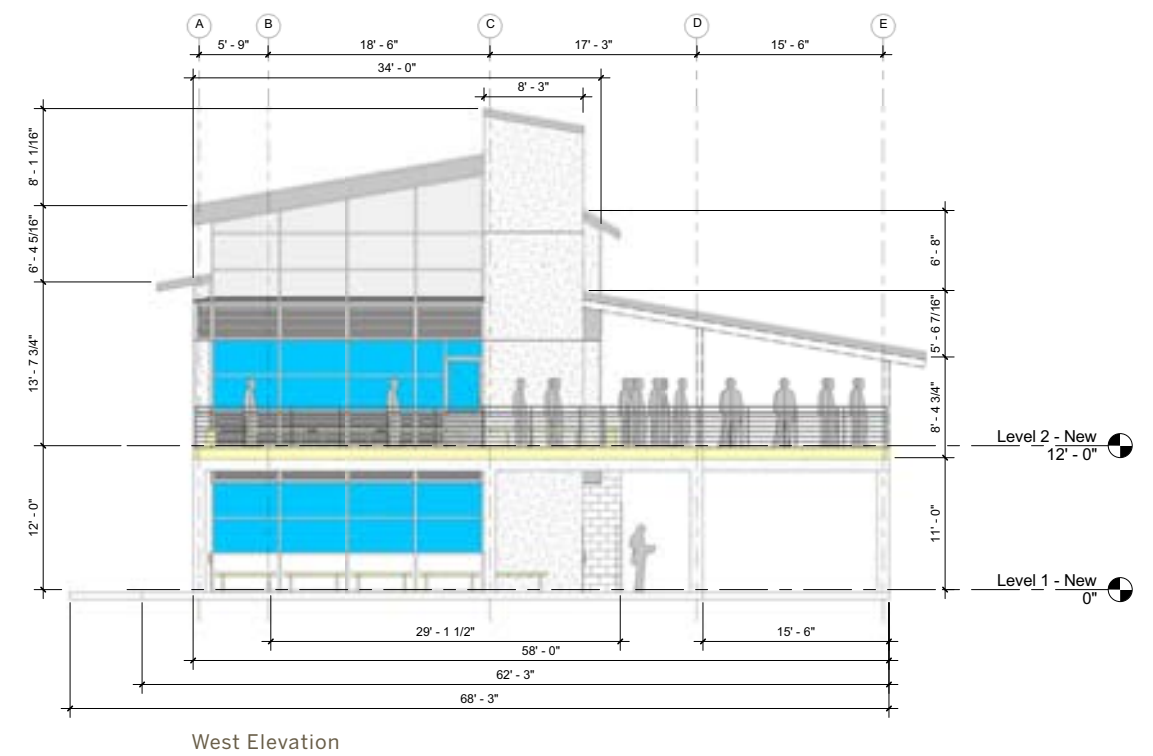
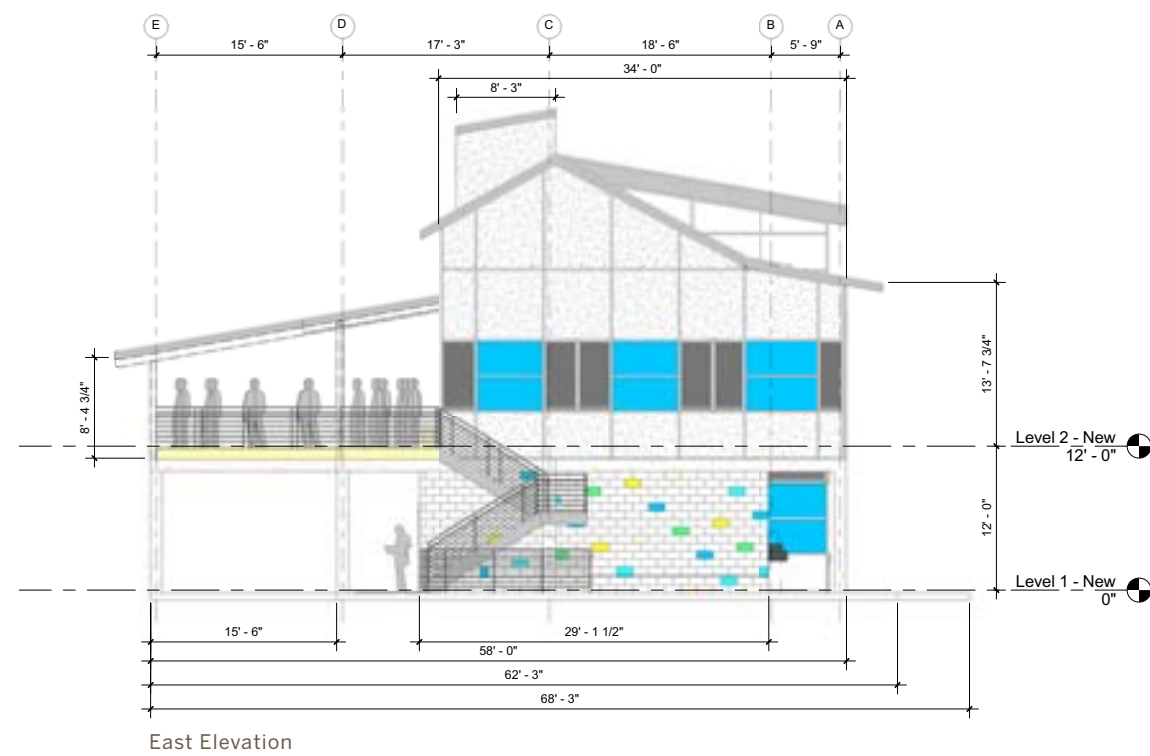
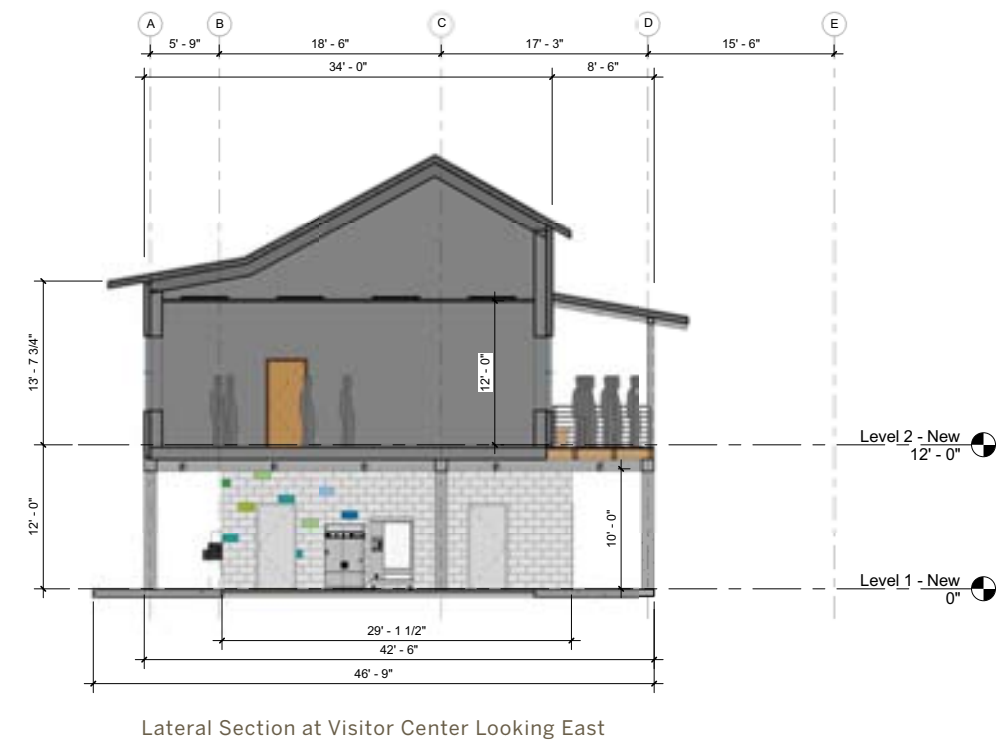
Green Text: Preferred Alternative Program Total Area



South Elevation



North Elevation



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1. ROOF

- 1.01 Standing seam metal roof w/ insulation

2. WALLS, OPENINGS, AND EQUIPMENT

- 2.01 Aluminum metal panels
- 2.02 Aluminum louver panel(s)
- 2.03 Aluminum screen system
- 2.04 Stucco
- 2.07 Hurricane protection coiling door
- 2.08 Hurricane shutter
- 2.10 Steel door(s)
- 2.11 Aluminum door
- 2.13 Stainless Steel elevator door

3. FLOORS, CEILINGS, AND LIGHTS

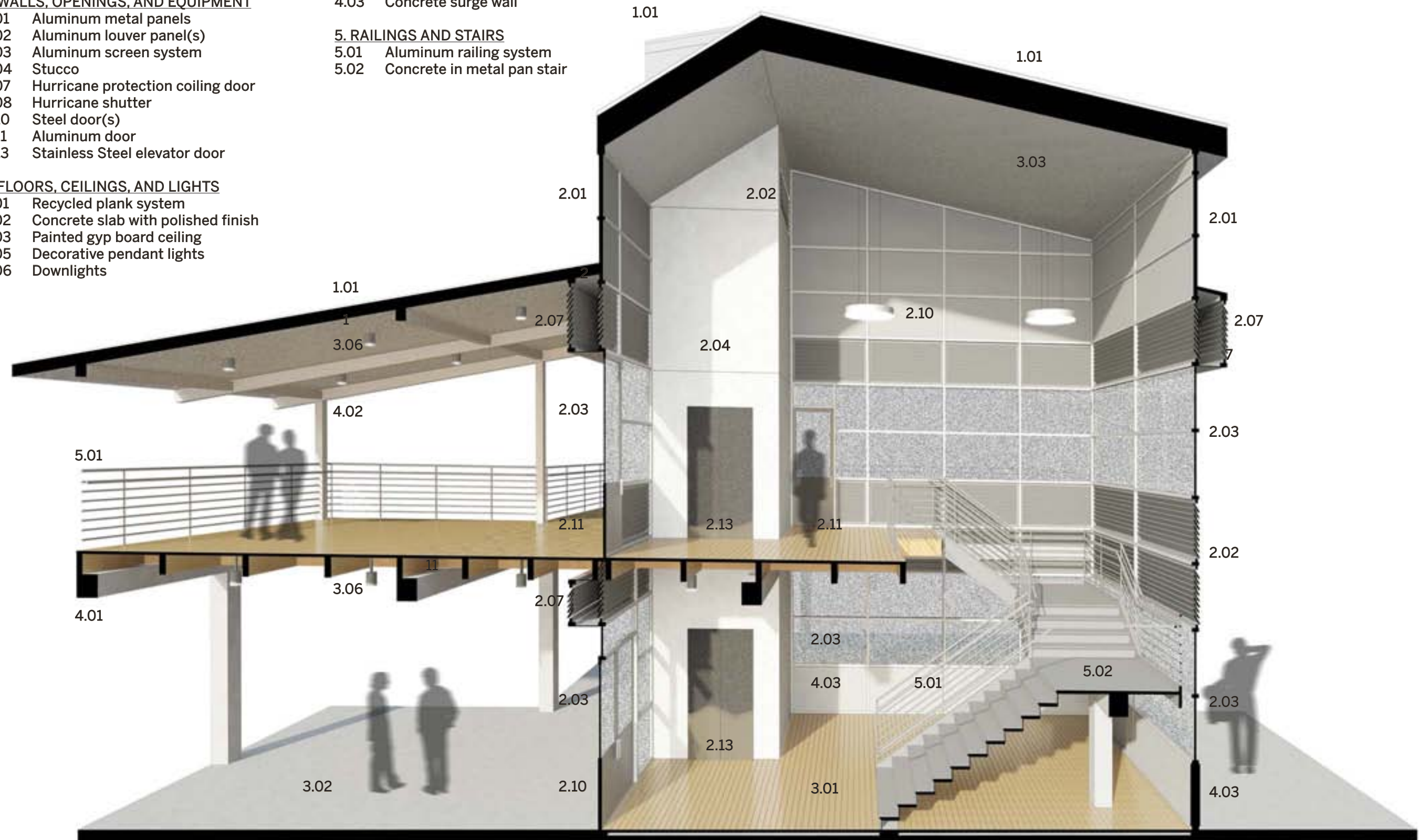
- 3.01 Recycled plank system
- 3.02 Concrete slab with polished finish
- 3.03 Painted gyp board ceiling
- 3.05 Decorative pendant lights
- 3.06 Downlights

4. STRUCTURE

- 4.01 Concrete beam and column system
- 4.02 Steel tube beam and column system
- 4.03 Concrete surge wall

5. RAILINGS AND STAIRS

- 5.01 Aluminum railing system
- 5.02 Concrete in metal pan stair



Phase 1 Sectional Perspective at Main Entry looking west

1. ROOF

- 1.01 Standing seam metal roof with insulation
- 1.02 20 KW Solar Panel system

2. WALLS, OPENINGS, AND EQUIPMENT

- 2.01 Aluminum metal panels
- 2.02 Aluminum louver panel(s)
- 2.03 Aluminum screen system
- 2.04 Stucco
- 2.06 CMU block
- 2.07 Hurricane protection coiling door
- 2.08 Hurricane shutter
- 2.09 Operable glass window
- 2.10 Steel door(s)
- 2.11 Aluminum door
- 2.12 Hollow metal door(s)
- 2.17 Wood benches

3. FLOORS, CEILINGS, AND LIGHTS

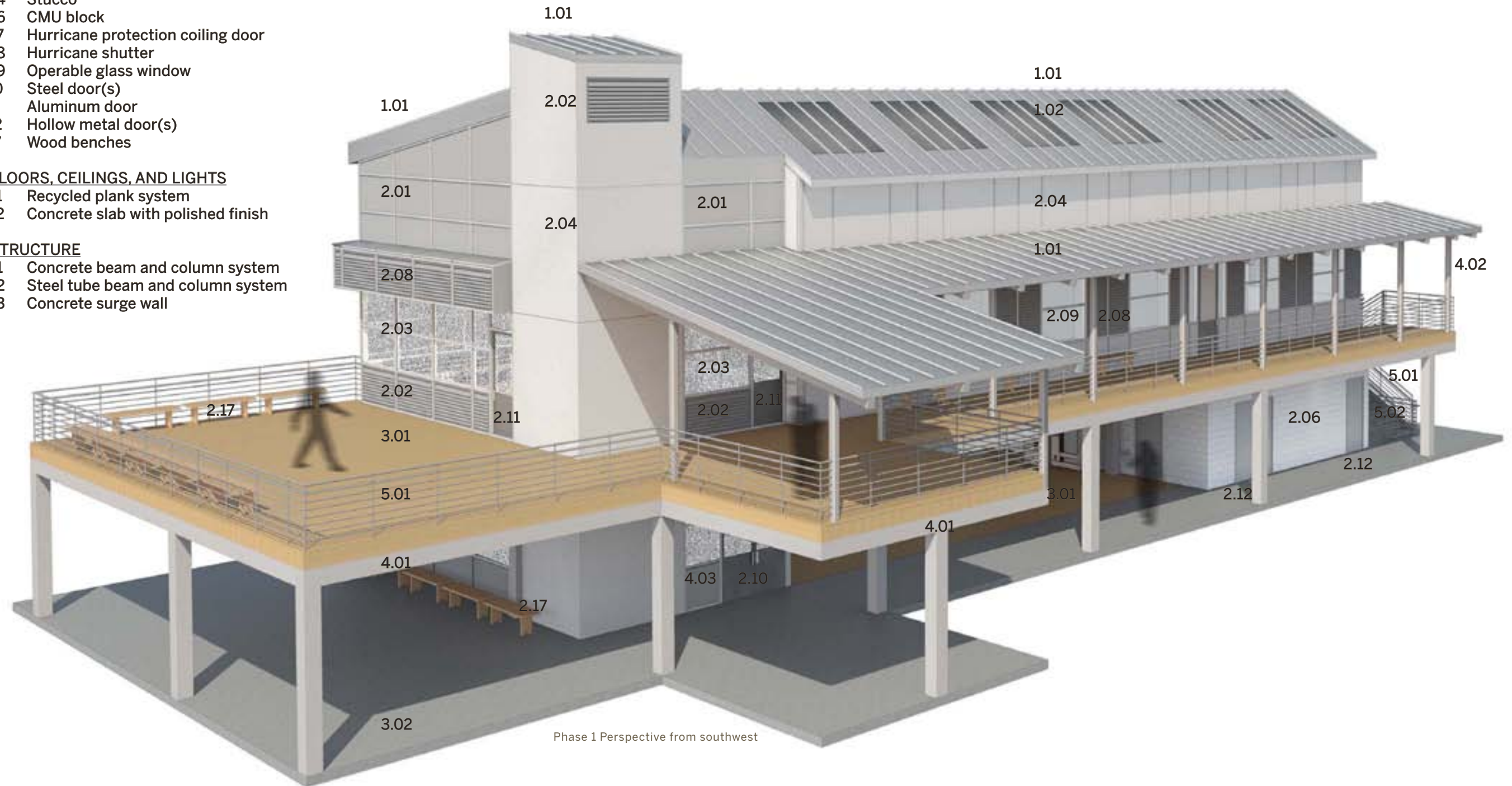
- 3.01 Recycled plank system
- 3.02 Concrete slab with polished finish

4. STRUCTURE

- 4.01 Concrete beam and column system
- 4.02 Steel tube beam and column system
- 4.03 Concrete surge wall

5. RAILINGS AND STAIRS

- 5.01 Aluminum railing system
- 5.02 Concrete in metal pan stair



1. ROOF

1.01: Standing seam metal roof with insulation

2. WALLS, OPENINGS, AND EQUIPMENT

2.01 Aluminum metal panels
2.02 Aluminum louver panels
2.03 Aluminum screen system
2.04 Stucco
2.05 Colored glass block or colored glazed CMU
2.07 Hurricane protection coiling door housing
2.08 Hurricane shutter
2.09 Operable glass window
2.10 Steel door(s)
2.11 Aluminum door(s)
2.13 Water fountains
2.14 Water cooler
2.15 Vending machines

3. FLOORS, CEILINGS, AND LIGHTS

3.01 Recycled wood and plastic plank system
3.02 Concrete slab with polished finish
3.06 Downlights
3.08 Wood benches

4. STRUCTURE

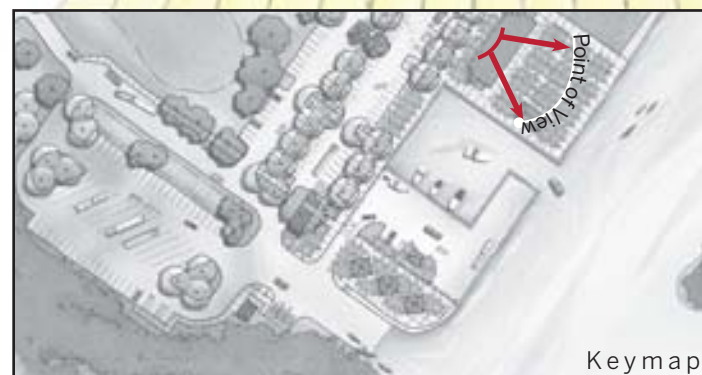
4.01 Concrete beam and column system
4.03 Concrete surge wall

5. RAILINGS AND STAIRS

5.01 Aluminum railing system



Phase 1 Perspective from northwest



View of Gulf Coast from Visitor Center

1.0

2.0

3.0

4.0

5.0

6.0

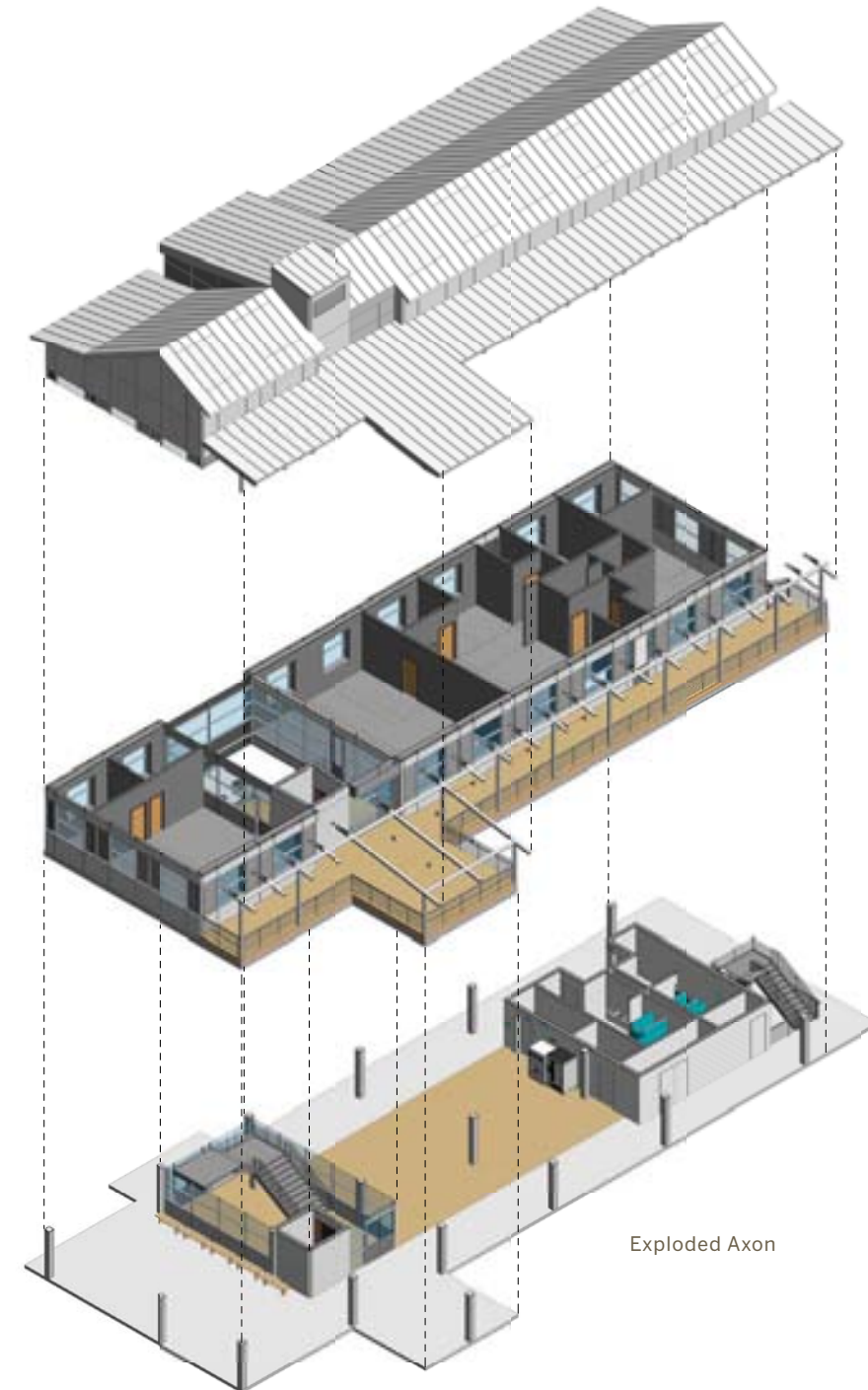
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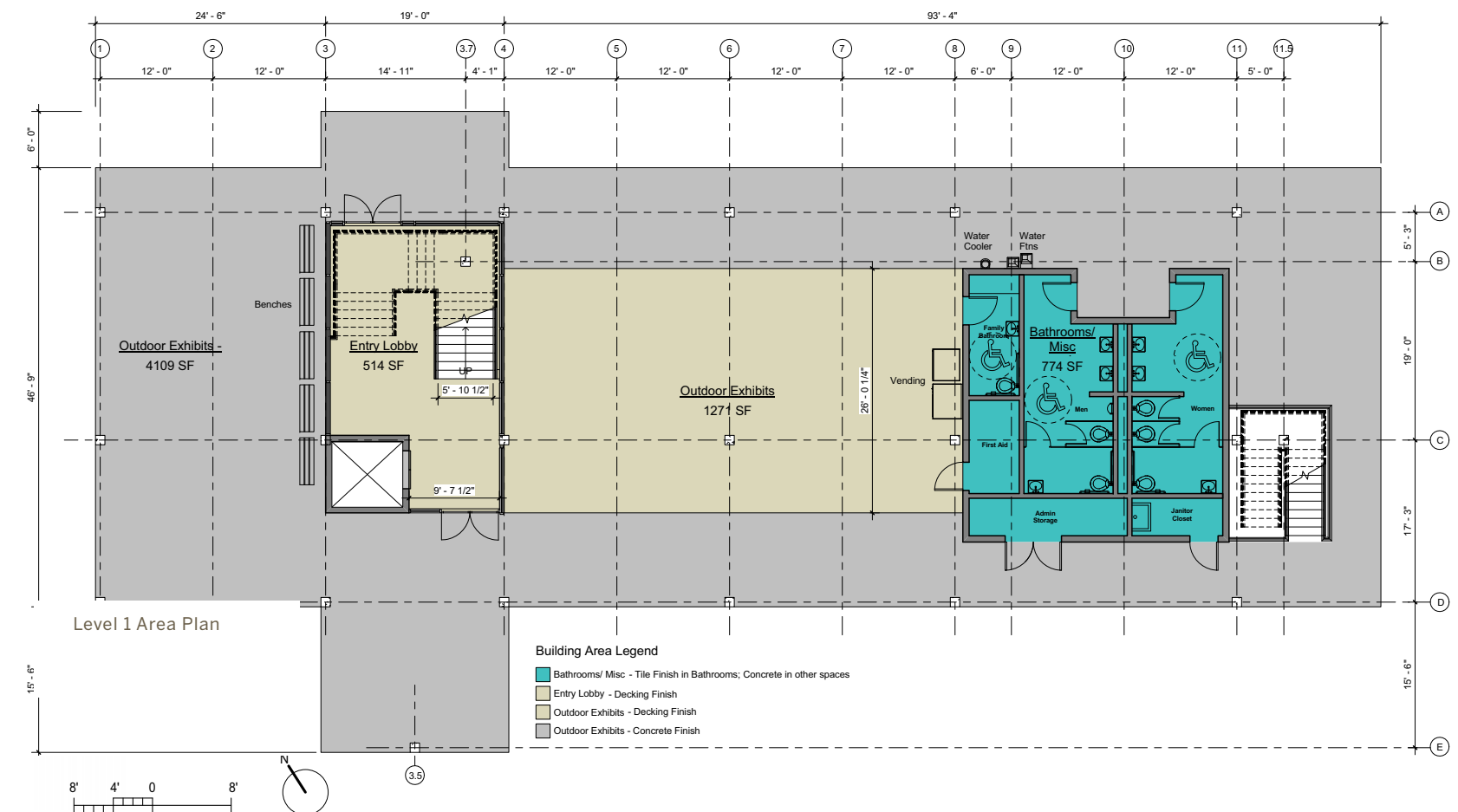
97

Phase 2: With Future Concessions

Visitor Center separated from Concessions.



Exploded Axon



Preferred Alternative Program: Phase 2 - with Future Concession		EVER 156680 Program	Tare		Preferred Alternative with 25% Tare		
			25%	Area	Enclosed Space	Screened Open Space	Open Space
Visitor Center Building							
	Conditioned Enclosed Space, at Level 2						
	Visitor Services (Level 2)	653 s. f.	25%	871 s. f.	830 s. f.		
	Adminstrative (Level 1 & 2)	1,560 s. f.	25%	2,080 s. f.	* 2,005 s. f.		
	Phase 2 Concessions (Level 2)	570 s. f.	25%	760 s. f.	** 834 s. f.		
	Core: Elevator	60 s. f.	25%	80 s. f.	71 s. f.		
	Unconditioned Enclosed Space, at raised grade						
	Comfort Station	564 s. f.	25%	752 s. f.			
	Comfort Station #1: Visitor Center (Level 1)				*** 622 s. f.		
	Women						
	3 Toilets						
	2 Lavatories						
	Men						
	2 Toilets						
	1 Urinal						
	2 Lavatories						
	Open or Screened Space, at raised grade and Level 2						
	Core: Stairs & Entry Lobbies (Levels 1 & 2)					755 s. f.	158 s. f.
	Outdoor Exhibits (Level 1)						5,380 s. f.
	Outdoor Circulation (Level 2)						1,412 s. f.
Restroom Building							
	Unconditioned Enclosed Space, at raised grade						
	Comfort Station #2: Restroom Building				*** 263 s. f.		
	Women						
	2 Toilets						
	2 Lavatories						
	# Outdoor Showers						
	Men						
	1 Toilets						
	1 Urinal						
	2 Lavatories						
	# Outdoor Showers						
Storage Building (Marina Basin)							
	Unconditioned Enclosed Space, at raised grade						
	Storage (Level 1)	225 s. f.	25%	300 s. f.	300 s. f.		
Sub Total for Primary Program Areas					4,925 s. f.		
					+ 439 s.f.	(Covered Core contributing to TARE)	
Totals		3,632 s. f.		‡ 4,900 s. f.	‡ 5,400 s. f.	† 760 s. f.	‡ 7,000 s. f.

* Administration area is less than Park suggested area - related to regular 12' wide pre-fab modules sized for mobility

** Concession area is more than Park suggested area - related to regular 12' wide pre-fab modules sized for mobility

*** Total Restroom fixtures are reduced from the Park suggested program per request by client.

‡ Rounded up to next hundred

† Rounded to nearest ten

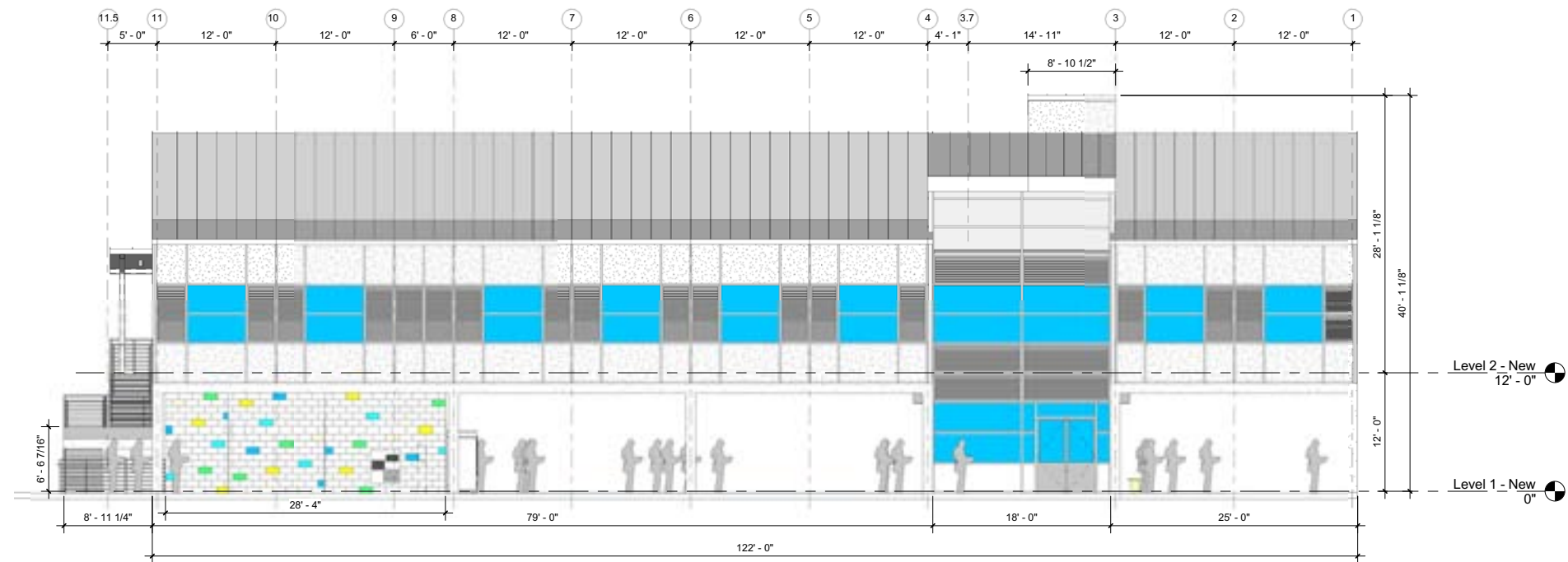
Blue Text: Park Suggested Program Total Area

Orange Text: Preferred Alternative Program areas contributing to Total Program

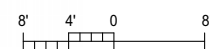
Green Text: Preferred Alternative Program Total Area

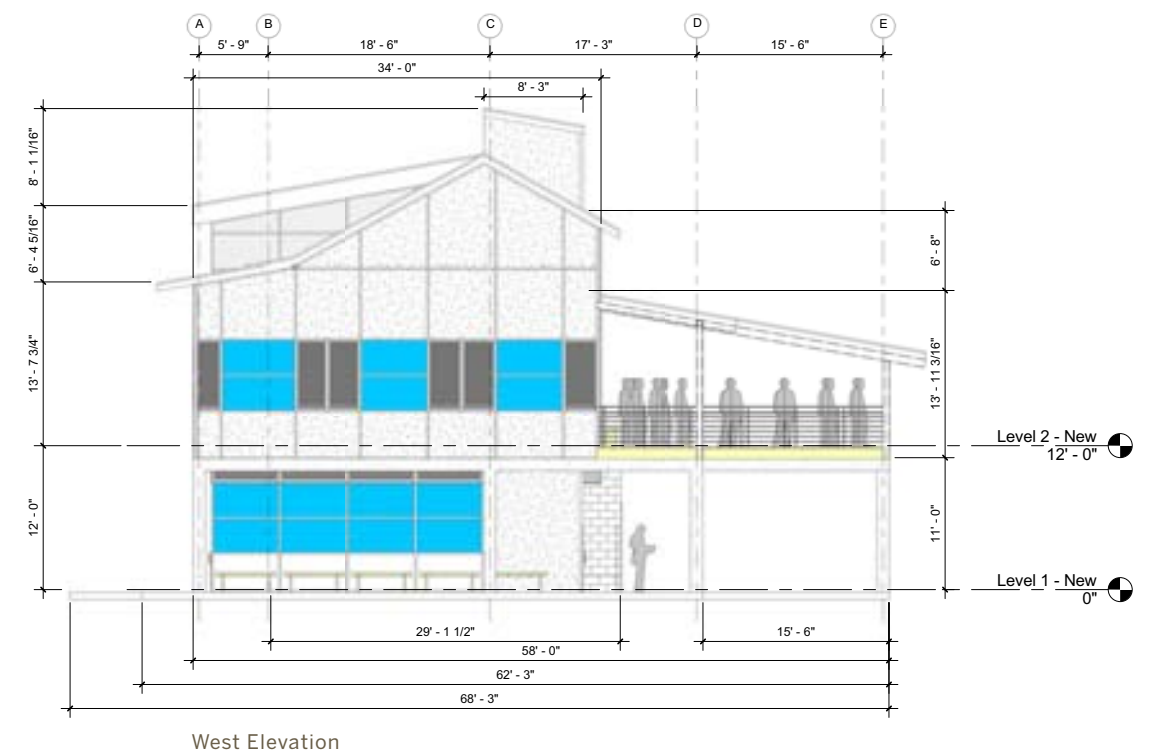
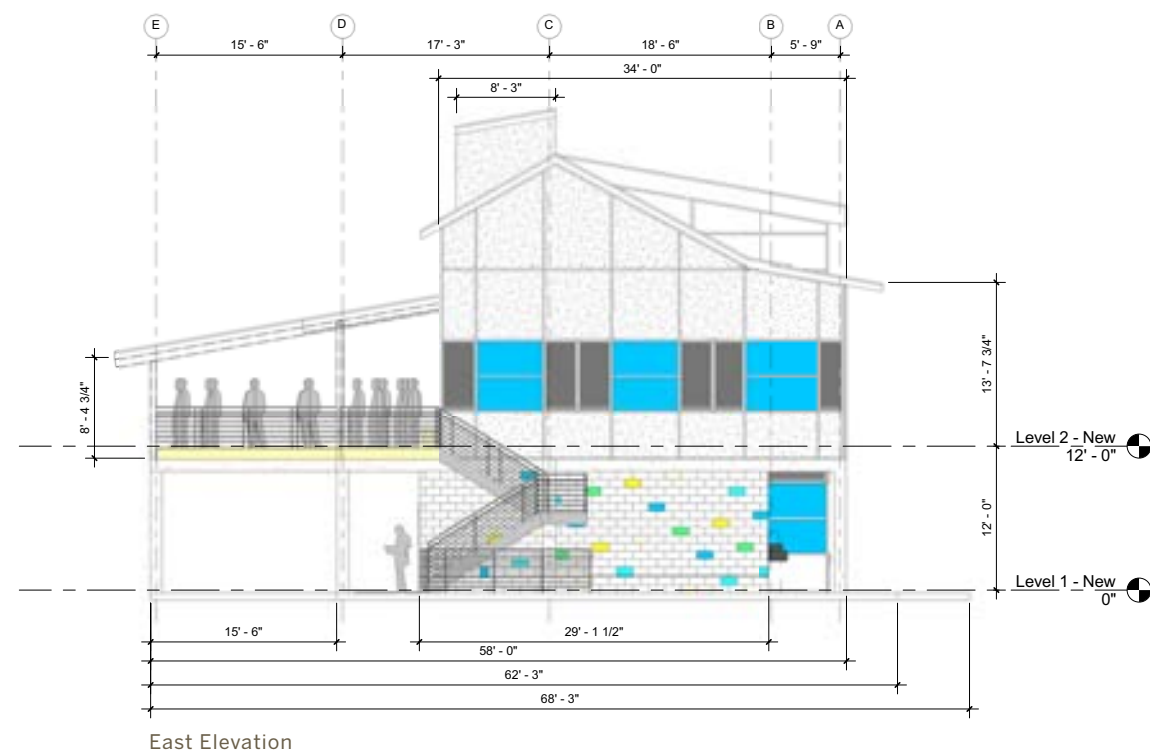
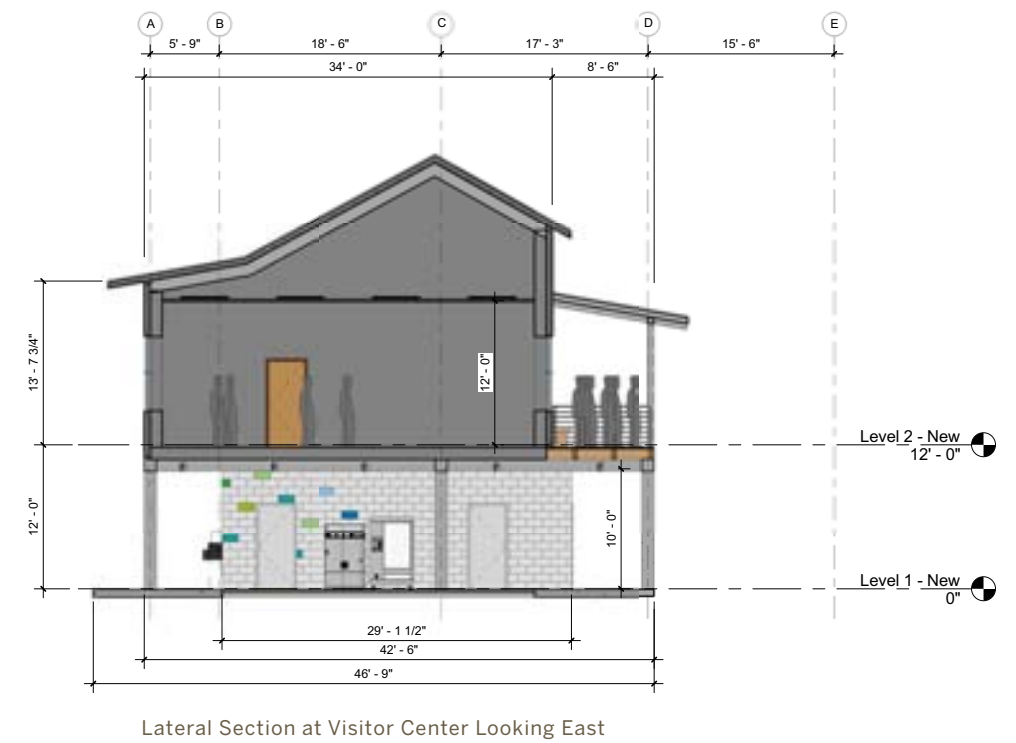
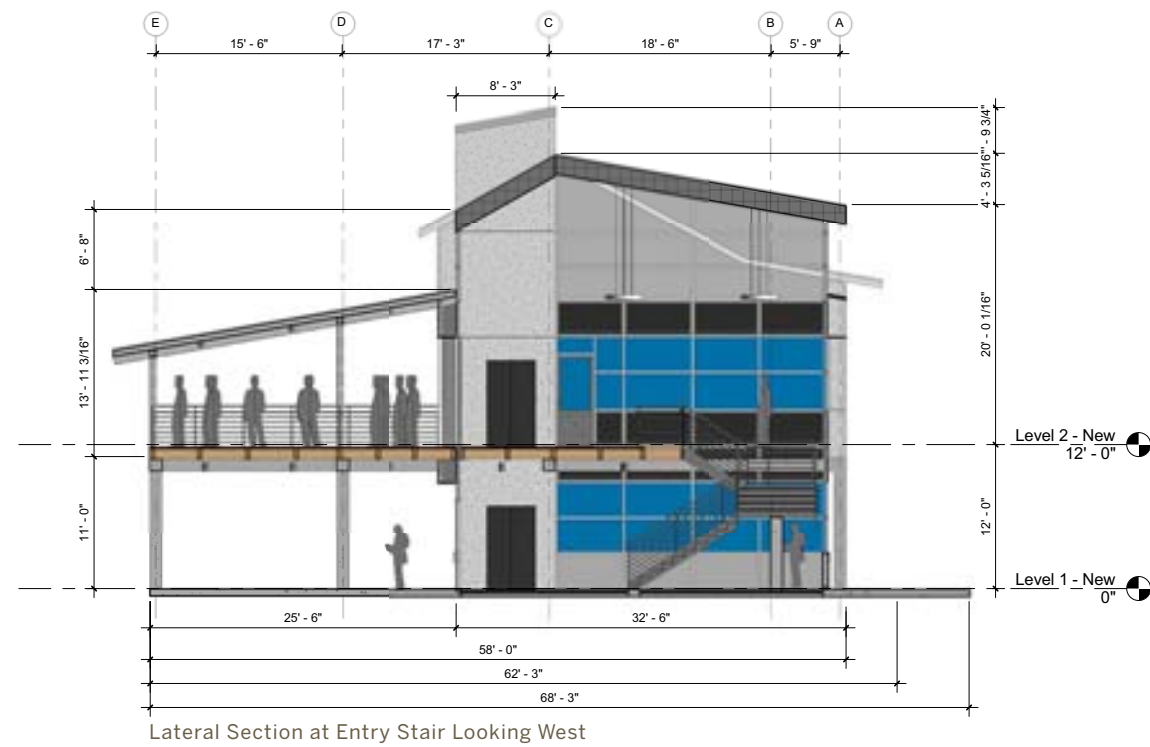


South Elevation



North Elevation





1. ROOF

1.01 Standing seam metal roof with insulation

2. WALLS, OPENINGS, AND EQUIPMENT

- 2.01 Aluminum metal panels
- 2.02 Aluminum louver panels
- 2.03 Aluminum screen system
- 2.04 Stucco
- 2.05 Colored glass block or colored glazed CMU
- 2.07 Hurricane protection coiling door housing
- 2.08 Hurricane shutter
- 2.09 Operable glass window
- 2.10 Steel door(s)
- 2.11 Aluminum door(s)
- 2.12 Hollow metal door
- 2.13 Water fountains
- 2.14 Water cooler
- 2.15 Vending machines

3. FLOORS, CEILINGS, AND LIGHTS

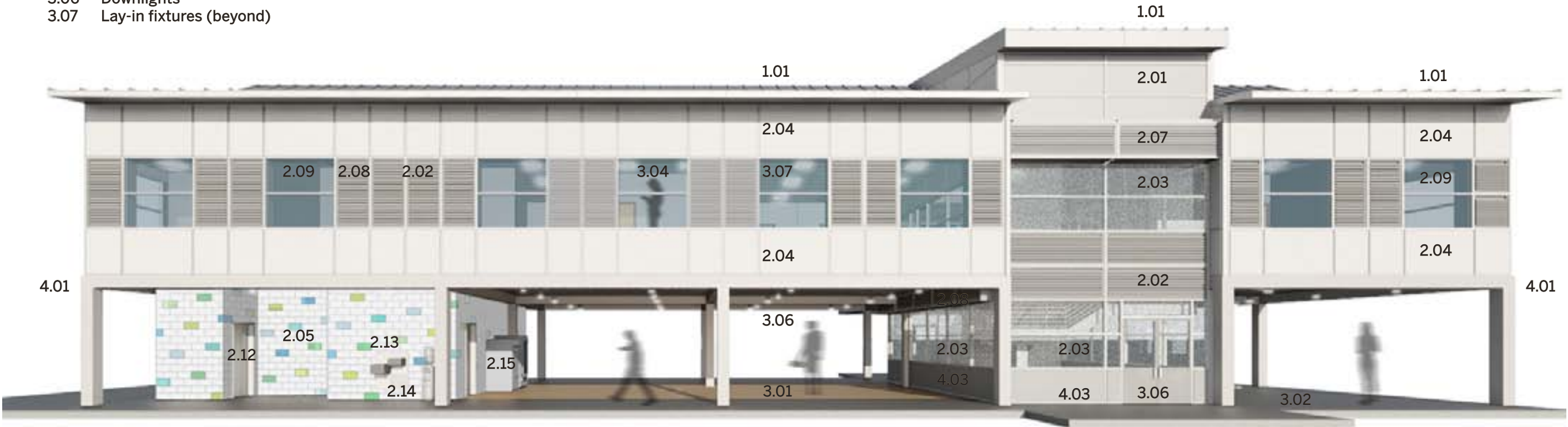
- 3.01 Recycled plank system
- 3.02 Concrete slab with polished finish
- 3.04 Lay-in acoustical ceiling (beyond)
- 3.06 Downlights
- 3.07 Lay-in fixtures (beyond)

4. STRUCTURE

- 4.01 Concrete beam and column system
- 4.03 Concrete surge wall

5. RAILINGS AND STAIRS

- 5.01 Aluminum railing system



Phase 2 Perspective from North

1. ROOF

1.01 Standing seam metal roof with insulation

2. WALLS, OPENINGS, AND EQUIPMENT

- 2.01 Aluminum metal panels
- 2.02 Aluminum louver panels
- 2.03 Aluminum screen system
- 2.04 Stucco
- 2.05 Colored glass block or colored glazed CMU
- 2.07 Hurricane protection coiling door housing
- 2.08 Hurricane shutter
- 2.09 Operable glass window
- 2.10 Steel door(s)
- 2.12 Hollow metal door
- 2.13 Water fountains
- 2.14 Water cooler

3. FLOORS, CEILINGS, AND LIGHTS

- 3.01 Recycled plank system
- 3.02 Concrete slab with polished finish

4. STRUCTURE

- 4.01 Concrete beam and column system
- 4.02 Steel tube beam and column system
- 4.03 Concrete surge wall

5. RAILINGS AND STAIRS

- 5.01 Aluminum railing system
- 5.02 Concrete in metal pan stair



1. ROOF
 - 1.01 Standing seam metal roof with insulation
2. WALLS, OPENINGS, AND EQUIPMENT
 - 2.02 Aluminum louver panels
 - 2.04 Stucco
 - 2.07 Hurricane protection coiling door housing
 - 2.08 Hurricane shutter
 - 2.09 Operable glass window
 - 2.11 Aluminum door
3. FLOORS, CEILINGS, AND LIGHTS
 - 3.01 Recycled plank system
 - 3.02 Concrete slab with polished finish
 - 3.06 Downlights
4. STRUCTURE
 - 4.01 Concrete beam and column system
 - 4.02 Steel tube beam and column system
5. RAILINGS AND STAIRS
 - 5.01 Aluminum railing system



7.3 Initial Energy Model Results

Performance

- Proposed Annual Cost: \$3,477
- Baseline Annual Cost: \$6,814
- Percent Improvement over Code Minimum: 49% (max LEED points: 19)
- Baseline Site EUI* = 70.1 kbtu / sq ft
- Proposed Site EUI* = 35.8 kbtu / sq ft

*EUI = Energy Utilization Index

Both Models

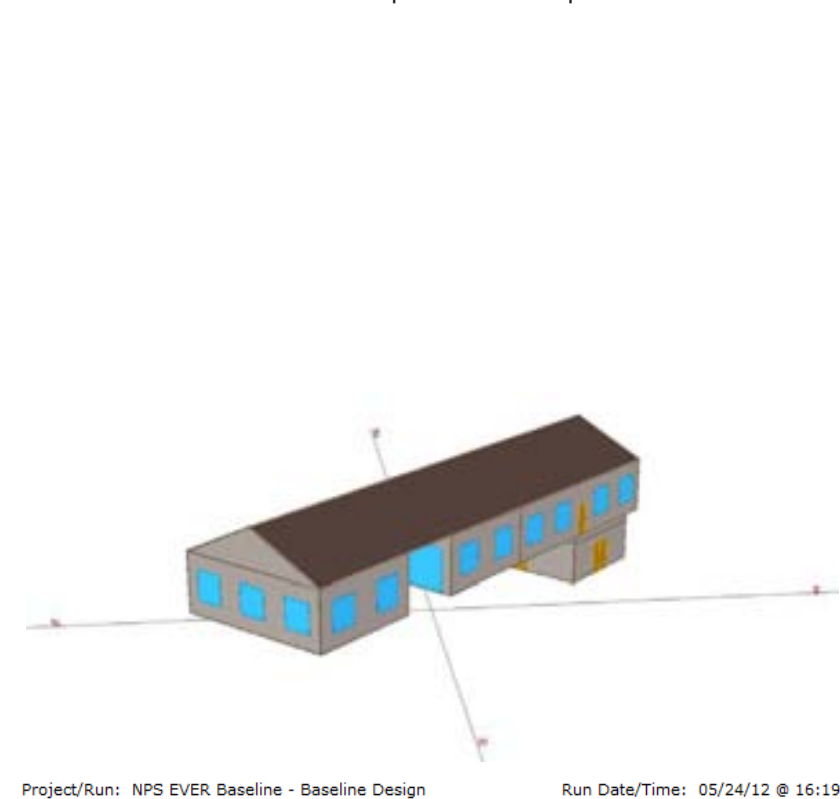
1. Code minimum glass modeled for each (i.e. no optimization of glass conducted)
2. Process loads identical and include elevator (20% baseline; 40% proposed)
3. Electricity rate = \$0.10 / kWh
4. Modeled according to ASHRAE Standard 90.1-2007 Appendix G
5. Exterior lighting power identical for both (actual values not known)
6. Restroom on ground level not modeled with HVAC system (but with exhaust fan)

Process Notes/ Observations

1. An approximately 20kW PV system would make this a Net Zero Energy Building.
2. HVAC system type does not seem to have a major impact on annual energy use. The comparison was between a high efficiency geothermal and a high efficiency split system heat pump.
3. Window properties do not have a major impact but can be optimized to reduce first costs.
4. Lighting is a major energy consumer for this building and daylighting control is critical. Suggest investing in this design element.
5. Final insulation levels, HVAC selection, glass selection and exterior lighting systems will need to be incorporated into a final model for LEED and/or code compliancy documentation.

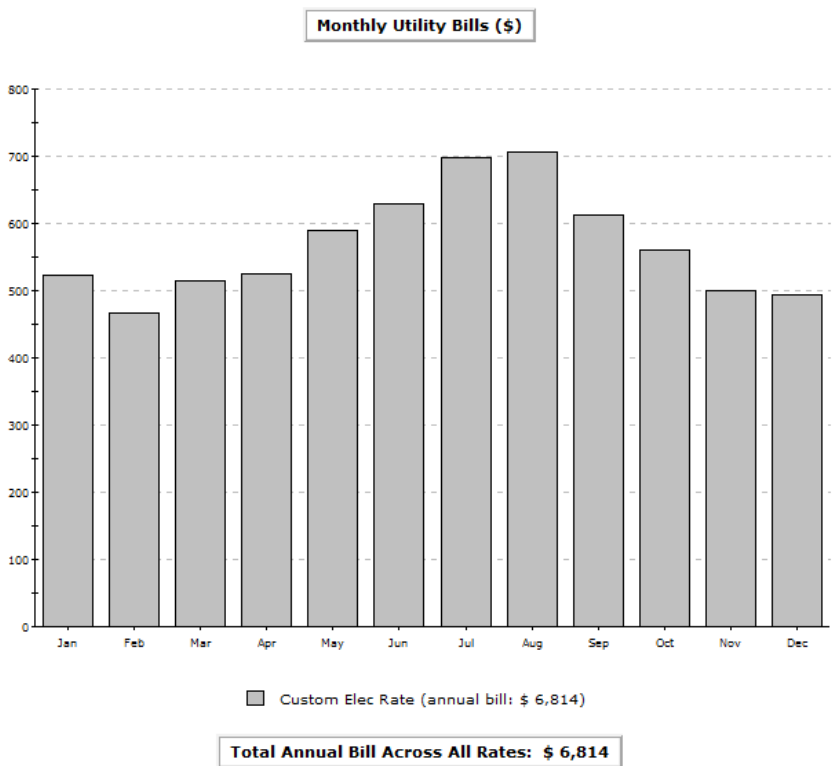
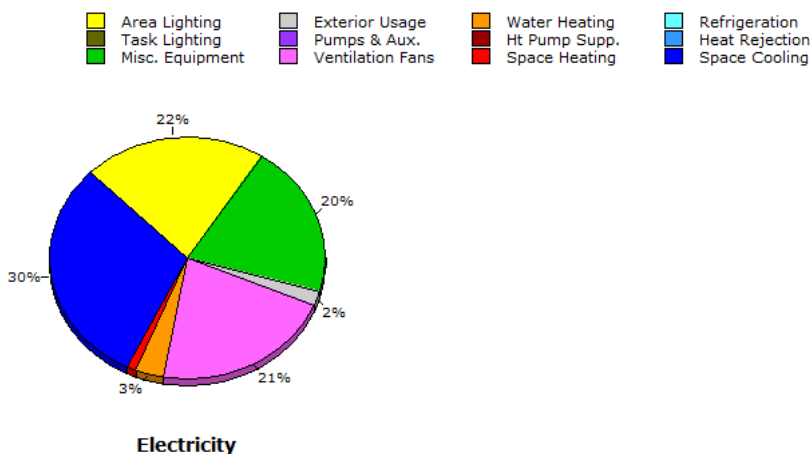
Baseline

1. No window overhangs
2. The 4 rotations for the compass were not performed.



Annual Energy Consumption by Enduse

	Electricity kWh	Natural Gas Btu	Steam Btu	Chilled Water Btu
Space Cool	20,716	-	-	-
Heat Reject.	-	-	-	-
Refrigeration	-	-	-	-
Space Heat	749	-	-	-
HP Supp.	3	-	-	-
Hot Water	2,206	-	-	-
Vent. Fans	14,553	-	-	-
Pumps & Aux.	1	-	-	-
Ext. Usage	1,270	-	-	-
Misc. Equip.	13,840	-	-	-
Task Lights	-	-	-	-
Area Lights	14,806	-	-	-
Total	68,145	-	-	-

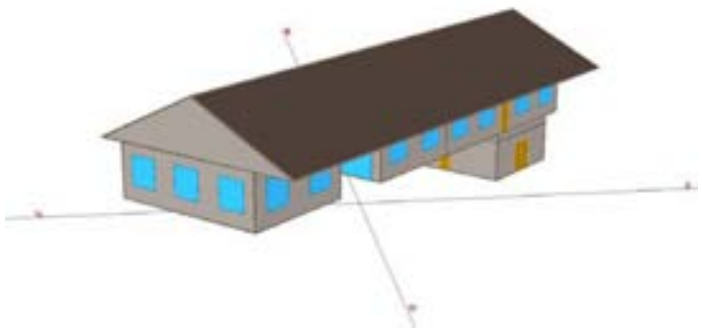
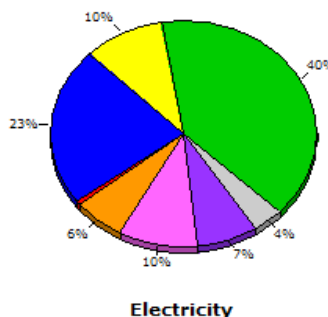
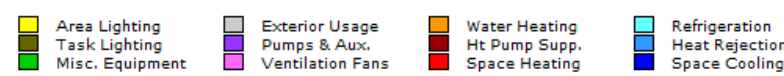


Proposed

- 1. Geothermal Heat Pump System (EER = 21; COP = 4.5)
- 2. Roof overhangs modeled
- 3. Renewable energy systems (PV) not modeled
- 4. Lighting modeled as 30% better than code maximum
- 5. Daylighting controls modeled (fluorescent switched control: full – 2/3 – 1/3 – off)
- 6. Additional roof insulation included in mode

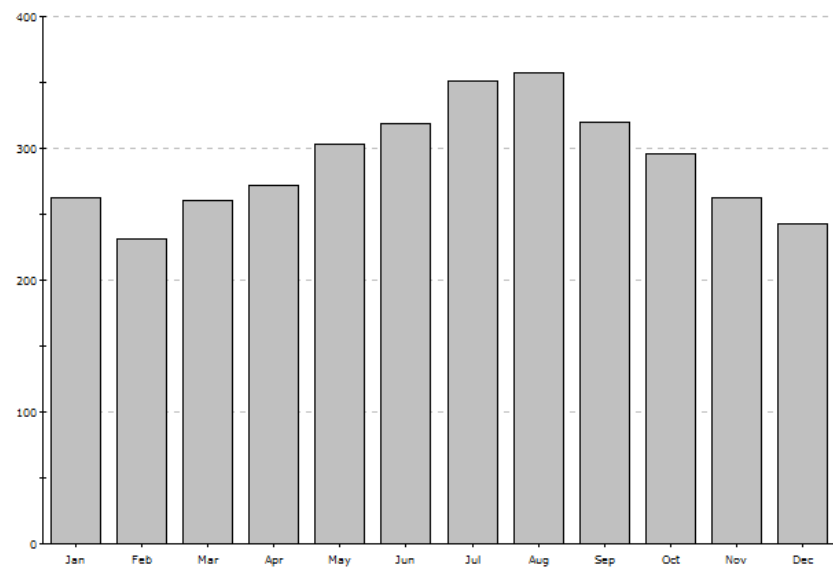
Annual Energy Consumption by Enduse

	Electricity kWh	Natural Gas Btu	Steam Btu	Chilled Water Btu
Space Cool	7,910	-	-	-
Heat Reject.	-	-	-	-
Refrigeration	-	-	-	-
Space Heat	203	-	-	-
HP Supp.	-	-	-	-
Hot Water	2,204	-	-	-
Vent. Fans	3,313	-	-	-
Pumps & Aux.	2,587	-	-	-
Ext. Usage	1,270	-	-	-
Misc. Equip.	13,840	-	-	-
Task Lights	-	-	-	-
Area Lights	3,439	-	-	-
Total	34,767	-	-	-



Project/Run: NPS EVER Proposed - Baseline Design Run Date/Time: 05/24/12 @ 16:27

Monthly Utility Bills (\$)



Custom Elec Rate (annual bill: \$ 3,477)

Total Annual Bill Across All Rates: \$ 3,477

7.5 Cost Estimate

Class C Construction Cost Estimate - Overall Project (Phases 1 and 2)

Project:

Gulf Coast District Visitor Contact Station and Ranger Station Summary

Date:

07.28.12

Park:

Everglades National Park

Alpha:

EVER

PMIS:

156680

Item No.	Description	Quantity	Unit	Cost/Unit	Total
	Phase I Site - Master Plan	1			\$2,040,354.00
	Phase I Building	4450 s.f.		\$421	\$1,872,616.00
	Subtotal Direct Construction Costs Phase I				\$3,912,970.00
	Phase II Site - Master Plan				\$444,830.00
	Phase II Building	744 s.f.		\$333	\$247,716.00
	Subtotal Direct Construction Costs Phase II				\$692,546.00
	Published Location Factor	-10.40%			-\$478,974.00
	Remoteness Factor	8%			\$368,440.00
	Federal Wage Rate Factor	0%			\$0.00
	State & Local Taxes	6%			\$276,331.00
	Design Contingency	20%			\$921,103.00
	Total Direct Construction Costs				\$5,692,418.00
	Standard General Conditions	10%			\$569,242.00
	Government General Conditions	5%			\$284,621.00
	Historic Preservation Factor	0%			\$0.00
Subtotal NET Construction Cost				\$6,546,281.00	
	Overhead	10%			\$654,628.00
	Profit	10%			\$654,628.00
Estimated NET Construction Costs				\$7,855,537.00	
	Bonds & Permits	2%			\$157,111.00
	Contracting Method Adjustment	10%			\$785,553.00
	Inflation Escalation Phase II	12 Months	3.75%		\$209,230.00
	Inflation Escalation Phase II	48 Months	3.75%		\$280,987.00
Total Estimated NET Cost of Construction				\$9,288,418.00	
Additional Scope - Raise Site and Foundations					\$1,165,825.00
Total Estimated NET Cost of Construction				\$2,310,665.00	

Phase I Costs

Phase II Costs

Including 48 months esc.

Class C Construction Cost Estimate - Basis of Cost Estimate for Preferred Alternative Phases 1 and 2 (Building)

BASIS OF ESTIMATE

PROJECT INFORMATION

Project: Gulf Coast District Visitor Contact Station and Ranger Station - Preferred Alternative

Park: Everglades National Park

Park Alpha: EVER

PMIS Number: 156680

Estimate Date: 7/28/2012

Prepared By: Steve Garrett

Company: Kirk Value Planners (A Member of Kirk Associates)

Address: 3007 North 156th Drive

City, State Zip: Goodyear, AZ 85395

Phone: 248-240-9605

BACKGROUND SUPPORTING MATERIAL (Scope of Work):

The design and construction of a replacement facility for the Gulf Coast District visitor center, law enforcement operations offices and concessions outlet. The new facility will serve as the district operations center for law enforcement personnel and as a visitor contact station to support the backcountry permit/boater education program to the Wilderness Waterway/Ten-thousands Islands areas of the park. Class C estimate is based upon the Smith Dalia Architects Design Draft Submittal (plans, sections / elevation drawings and material narratives). There was also discussion with the design team for various issues. This portion covers Phase 1 where the visitor contact station has a temporary deck located with the future Concessions area will be installed in Phase 2.

SOURCE OF COST DATA:

Kirk VP uses its own cost database for unit prices. When unique products require price validation, KVP consults either with a local / regional trade or a construction manager with work experience in the area. RS Means cost data (BCCD 2012) is used to confirm city / location premiums per trade. Labor rates are researched to determine the highest of either the local union hall, Davis Bacon, or prevailing wage rates are for the area. Quantities are taken from the available drawings. Proposed scope, quantities and unit costs have been reviewed by the designing architects, engineers and consultants and adjusted per their recommendations.

ESTIMATE ASSUMPTIONS:

In this case, general condntions, overhead and profit have been extensively researched for the southern Florida market for previous NPS projects. Actual costs have been confirmed based on finished construction figures for projects completed in southern Florida within the last 24 months. The basis structure will be constructed out of pre-fabricated concrete modules made off site and shipped / installed on site, then finished in place. A concrete frame will be constructed on site to support the modules to meet the floor plain code requirements (100 year). The prefabricated structure pricing was based on quotes from suppliers used in previous projects in souther Florida. No specific project data was communicated to vendors, only basic information was used to obtain a quote for a fictional project.

MAJOR CHANGES FROM PREVIOUS ESTIMATE:

FDOT cost included O&P, material and installation. These costs were broken down to the NPS format by removing 10% for overhead and 10% for profit. Adjusted area naming and phasing to better align with Master Plan. Updated unit costs for utilities, roads, turf reinforcement and pedestrian paving. Confirmed and adjusted quantities for all areas.

PROJECT INFORMATION

Project: Gulf Coast District Visitor Contact Station and Ranger Station - Preferred Alternative

Park: Everglades National Park

Park Alpha: EVER

PMIS Number: 156680

Estimate Date: 7/28/2012

DESCRIPTION OF MARK-UP & ADD-ONS:

Location Factor:	<u>-10.40%</u>	The closest commercial center to the project site is Miami, Florida with a City Cost Index of 89.6.
Remoteness Factor:	<u>8.00%</u>	Site is 80 miles from published commercial center.
Wage Rate Factor:	<u>0.00%</u>	Used Wage Determination Online.gov to find similar heavy/civil projects in Collier County. The published rates are within local rates if not lower.
State & Local Taxes:	<u>6.00%</u>	6% State sales tax on materials only
Design Contingency:	<u>20.00%</u>	Design Contingency for the Building and Site is included at a rate of 20%. This includes design contingency for the Exhibits to account for the budgetary nature of Exhibit costs. Construction contingencies relative to unforeseen conditions will be addressed in the NPS Gross Project Budget.
Standard. General Conditions:	<u>10.00%</u>	The amount of effort required to complete the project will be reduced based on large volume of pre-fabrication. Thus lower general conditions will be required.
Government General Conditions:	<u>5.00%</u>	Premium costs, above Standard General Conditions, associated with NPS contract requirements and is applied equally to Building, Exhibit and Site estimates.
Historic Preservation Factor:	<u>0.00%</u>	Premium costs associated with the protection and maintenance of existing historic fabric are not anticipated. This work does not involve historic structures.
Contractor Overhead:	<u>10.00%</u>	The amount of effort required to complete the project will be reduced based on large volume of pre-fabrication. Thus lower overhead is anticipated.
Contractor Profit:	<u>10.00%</u>	Project requires particular expertise that will require this type of profit. It is also based on previous experience.
Bonds and Permits:	<u>2.00%</u>	2.0% for bonds, no permit fees have been included.
Contracting Method Adjustment:	<u>10.00%</u>	The method is yet to be determined. It is anticipated to be a full and open bid process or limited to SBA Certified contractors. This premium may increase by 10-20% depending of the final contracting method adjusted.
Annual Inflation Escalation Factor:	<u>3.75%</u>	Projected annual inflation rate.
Time Until Project Midpoint (Months)	<u>12</u>	Number of months from estimate (or data) date until the projects midpoint of construction.

OTHER COMMENTS:

This format makes it difficult to include different phases or mark ups for site related elements and building. For this project, separate estimates for site and building have been generated to capture the costs for Phase 1 and Phase 2.

Class C Construction Cost Estimate - Project Cost Summary Preferred Alternative Phases 1 and 2 (Building)

PROJECT COST SUMMARY

Project:

Park:

Alpha:

PMIS:

Gulf Coast District Visitor Contact Station and Ranger Station - Preferred Alternative
Everglades National Park
EVER
156680

Estimate By:

Date:

Steve Garrett
07/28/12

Reviewed By:

Date:

Reviewer
Review Date

Item No.	Description	Quantity	Unit	Cost/Unit	Total
1	Visitor Contact Station Phase 1	4,450	SF	\$421	\$1,872,616
	Subtotal Direct Construction Costs				\$1,872,616
	Value of Government Furnished Property (GFP) Included in Direct Cost (see footnote)*				\$0
	Direct Cost Subtotal without GFP				\$1,872,616
	Published Location Factor	-10.40%			-\$194,752
	Remoteness Factor	8.00%			\$149,809
	Federal Wage Rate Factor	0.00%			\$0
	State & Local Taxes	6.00%			\$112,357
	Design Contingency	20.00%			\$374,523
	Total Direct Construction Costs				\$2,314,554
	Standard General Conditions	10.00%			\$231,455
	Government General Conditions	5.00%			\$115,728
	Historic Preservation Factor	0.00%			\$0
	Subtotal NET Construction Cost				\$2,661,737
	Overhead	10.00%			\$266,174
	Profit	10.00%			\$266,174
	Estimated NET Construction Cost				\$3,194,084
	Bonds & Permits	2.00%			\$63,882
	Contracting Method Adjustment	10.00%			\$319,408
	Inflation Escalation	12	Months	3.75%	\$134,152
	Total Estimated NET Cost of Construction				\$3,711,526

* GFP costs are only used when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. Adjustments and Markup on GFP only include Inflation Escalation; No other adjustment factors or O&P markup have been applied.

PROJECT COST SUMMARY

Project:

Park:

Alpha:

PMIS:

Gulf Coast District Visitor Contact Station and Ranger Station - Preferred Alternative
Everglades National Park
EVER
156680

Estimate By:

Date:

Steve Garrett
07/28/12

Reviewed By:

Date:

Reviewer
Review Date

Item No.	Description	Quantity	Unit	Cost/Unit	Total
1	Visitor Contact Station Phase 2	744	SF	\$333	\$247,716
	Subtotal Direct Construction Costs				\$247,716
	Value of Government Furnished Property (GFP) Included in Direct Cost (see footnote)*				\$0
	Direct Cost Subtotal without GFP				\$247,716
	Published Location Factor	-10.40%			-\$25,763
	Remoteness Factor	8.00%			\$19,817
	Federal Wage Rate Factor	0.00%			\$0
	State & Local Taxes	6.00%			\$14,863
	Design Contingency	20.00%			\$49,543
	Total Direct Construction Costs				\$306,177
	Standard General Conditions	10.00%			\$30,618
	Government General Conditions	5.00%			\$15,309
	Historic Preservation Factor	0.00%			\$0
	Subtotal NET Construction Cost				\$352,104
	Overhead	10.00%			\$35,210
	Profit	10.00%			\$35,210
	Estimated NET Construction Cost				\$422,525
	Bonds & Permits	2.00%			\$8,450
	Contracting Method Adjustment	10.00%			\$42,252
	Inflation Escalation	48	Months	3.75%	\$75,078
	Total Estimated NET Cost of Construction				\$548,306

* GFP costs are only used when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. Adjustments and Markup on GFP only include Inflation Escalation; No other adjustment factors or O&P markup have been applied.

Class C Construction Cost Estimate - Basis of Cost Estimate for Preferred Alternative Phases 1 and 2 (Site)

BASIS OF ESTIMATE

PROJECT INFORMATION

Project:	Gulf Coast District Visitor Contact Station and Ranger Station - Preferred Alt.
Park:	Everglades National Park
Park Alpha:	EVER
PMIS Number:	156680
Estimate Date:	7/24/2012
Prepared By:	Scott Sinn
Company:	AECOM
Address:	240 East Mountain Avenue
City, State Zip:	Fort Collins, CO 80524
Phone:	(970) 484-6073

BACKGROUND SUPPORTING MATERIAL (Scope of Work):

The design and construction of a replacement facility for the Gulf Coast District visitor center, law enforcement offices and concessions outlet. The new facility will serve as the district operations center for law enforcement as a visitor contact station to support the backcountry permit/boater education program to the Wilderness Wat thousands Islands areas of the park.

SOURCE OF COST DATA:

The primary source is the Florida Department of Transportation for projects completed between March 2011 and 2012 in Collier County. The unit prices were increased 10-20% due to project size and do not include O&P. Where F were not available, the costs are based on the RS Means 2012 Building Construction Cost Data (BCCD), 69th Edition.

ESTIMATE ASSUMPTIONS:

Estimate is for Phase I construction of the project. Secured Maintenance, Volunteer Campground, Staff Housing and Interpretive Trail are in the Phase II estimate.

MAJOR CHANGES FROM PREVIOUS ESTIMATE:

FDOT cost included O&P, material and installation. These costs were broken down to the NPS format by removing overhead and 10% for profit. Adjusted area naming and phasing to better align with Master Plan. Updated unit utilities, roads, turf reinforcement and pedestrian paving. Confirmed and adjusted quantities for all areas.

PROJECT INFORMATION

Project:	Gulf Coast District Visitor Contact Station and Ranger Station - Preferred Alt.
Park:	Everglades National Park
Park Alpha:	EVER
PMIS Number:	156680
Estimate Date:	7/24/2012

DESCRIPTION OF MARK-UP & ADD-ONS:

Location Factor:	<u>-10.40%</u>	Closest RS Means City is Miami, FL; CCI=89.6
Remoteness Factor:	<u>8.00%</u>	Site is 80 miles from published commercial center.
Wage Rate Factor:	<u>0.00%</u>	Used Wage Determination Online.gov to find similar projects in Collier County. The published rates are used if not lower.
State & Local Taxes:	<u>6.00%</u>	6% State sales tax
Design Contingency:	<u>20.00%</u>	Conceptual Design documents have minimal details work is simple.
Standard. General Conditions:	<u>10.00%</u>	Simple heavy/civil construction project
Government General Conditions:	<u>5.00%</u>	Simple heavy/civil construction project
Historic Preservation Factor:	<u>0.00%</u>	Describe rationale for using this factor
Contractor Overhead:	<u>10.00%</u>	Typical rate for mid-sized heavy/civil Contractor in area
Contractor Profit:	<u>10.00%</u>	Standard rate used in competitive construction market
Bonds and Permits:	<u>2.00%</u>	Standard range for established heavy/civil Contractor
Contracting Method Adjustment:	<u>10.00%</u>	Per the NPS PM, it is anticipated to be contracted under IDIQ contract.
Annual Inflation Escalation Factor:	<u>3.75%</u>	Projected annual inflation rate.
Time Until Project Midpoint (Months)	<u>12</u>	Number of months from estimate (or data) date until midpoint of construction.

OTHER COMMENTS:

Provide any additional information, qualifications, etc.

Class C Construction Cost Estimate - Project Cost Summary Preferred Alternative Phases 1 and 2 (Site)

PROJECT COST SUMMARY

Project:

Park:

Alpha:

PMIS:

Gulf Coast District Visitor Contact Station and Ranger Station - Preferred Alt.
Everglades National Park
EVER
156680

Estimate By:

Date:

Scott Sinn

07/24/12

Reviewed By:

Date:

Reviewer

Review Date

Item No.	Description	Quantity	Unit	Cost/Unit	Total
1	Remove and Reclaim Parking Area	1	LS	\$42,097	\$42,097
2	Construct Roads and Parking Area	1	LS	\$419,670	\$419,670
3	Construct Visitor Plaza/Promenade/Seawall	1	LS	\$226,796	\$226,796
4	Construct Canoe/Kayak Support Area	1	LS	\$300,902	\$300,902
5	Construct New Canoe/Kayak Parking	1	LS	\$419,010	\$419,010
6	Marina Maintenance & Concessioner Facility	1	LS	\$186,029	\$186,029
7	Potable Water and Fire	1	LS	\$68,000	\$68,000
8	Santiary Sewer	1	LS	\$62,900	\$62,900
9	Electrical and Site Lighting	1	LS	\$63,500	\$63,500
10	IT/Communications	1	LS	\$52,500	\$52,500
11	Stormwater and Drainage	1	LS	\$198,950	\$198,950
Subtotal Direct Construction Costs					\$2,040,354
Value of Government Furnished Property (GFP) Included in Direct Cost (see footnote)*					\$0
Direct Cost Subtotal without GFP					\$2,040,354
	Published Location Factor	-10.40%			-\$212,197
	Remoteness Factor	8.00%			\$163,228
	Federal Wage Rate Factor	0.00%			\$0
	State & Local Taxes	6.00%			\$122,421
	Design Contingency	20.00%			\$408,071
Total Direct Construction Costs					\$2,521,878
	Standard General Conditions	10.00%			\$252,188
	Government General Conditions	5.00%			\$126,094
	Historic Preservation Factor	0.00%			\$0
Subtotal NET Construction Cost					\$2,900,159
	Overhead	10.00%			\$290,016
	Profit	10.00%			\$290,016

PROJECT COST SUMMARY

Project:

Park:

Alpha:

PMIS:

Gulf Coast District Visitor Contact Station and Ranger Station - Preferred Alternative
Everglades National Park
EVER
156680

Estimate By:

Date:

Steve Garrett

07/28/12

Reviewed By:

Date:

Reviewer

Review Date

Item No.	Description	Quantity	Unit	Cost/Unit	Total
1	Visitor Contact Station Phase 2	744	SF	\$333	\$247,716
Subtotal Direct Construction Costs					\$247,716
Value of Government Furnished Property (GFP) Included in Direct Cost (see footnote)*					\$0
Direct Cost Subtotal without GFP					\$247,716
	Published Location Factor	-10.40%			-\$25,763
	Remoteness Factor	8.00%			\$19,817
	Federal Wage Rate Factor	0.00%			\$0
	State & Local Taxes	6.00%			\$14,863
	Design Contingency	20.00%			\$49,543
Total Direct Construction Costs					\$306,177
	Standard General Conditions	10.00%			\$30,618
	Government General Conditions	5.00%			\$15,309
	Historic Preservation Factor	0.00%			\$0
Subtotal NET Construction Cost					\$352,104
	Overhead	10.00%			\$35,210
	Profit	10.00%			\$35,210
Estimated NET Construction Cost					\$422,525
	Bonds & Permits	2.00%			\$8,450
	Contracting Method Adjustment	10.00%			\$42,252
	Inflation Escalation	48	Months	3.75%	\$75,078
Total Estimated NET Cost of Construction					\$548,306

* GFP costs are only used when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. Adjustments and Markup on GFP only include Inflation Escalation; No other adjustment factors or O&P markup have been applied.

Class C Construction Cost Estimate - Project Cost Summary for Add Costs to Raise Project Site

PROJECT COST SUMMARY

Project: Gulf Coast District Visitor Contact Station and Ranger Station - Add Costs
Park: Everglades National Park
Alpha: EVER
PMIS: 156680

Estimate By: Scott Sinn
Date: 07/24/12

Reviewed By: Reviewer
Date: Review Date

Item No.	Description	Quantity	Unit	Cost/Unit	Total
1	Additional Cost Items	1	LS	\$1,165,825	\$1,165,825
	Subtotal Direct Construction Costs				\$1,165,825
	Value of Government Furnished Property (GFP) Included in Direct Cost (see footnote)*				\$0
	Direct Cost Subtotal without GFP				\$1,165,825
	Published Location Factor	-10.40%			-\$121,246
	Remoteness Factor	8.00%			\$93,266
	Federal Wage Rate Factor	0.00%			\$0
	State & Local Taxes	6.00%			\$69,950
	Design Contingency	20.00%			\$233,165
	Total Direct Construction Costs				\$1,440,960
	Standard General Conditions	10.00%			\$144,096
	Government General Conditions	5.00%			\$72,048
	Historic Preservation Factor	0.00%			\$0
	Subtotal NET Construction Cost				\$1,657,104
	Overhead	10.00%			\$165,710
	Profit	10.00%			\$165,710
	Estimated NET Construction Cost				\$1,988,524
	Bonds & Permits	2.00%			\$39,770
	Contracting Method Adjustment	10.00%			\$198,852
	Inflation Escalation	12	Months	3.75%	\$83,518
	Total Estimated NET Cost of Construction				\$2,310,665

* GFP costs are only used when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. Adjustments and Markup on GFP only include Inflation Escalation; No other adjustment factors or O&P markup have been applied.

8.0 credits and reference documents



8.1 Credits

Smith Dalia Architects

Dan Koch, Principal, AIA
Robyn Zurfluh, Associate, RA, LEED AP
Steven Jackson, AIA

AECOM

Phil Hendricks Jr., Associate Principal, ASLA, CSI
Greg Oakes, Associate
Scott Sinn, Associate, LEED AP
Mark Kosmos, Senior Associate, ASLA
Maria Michieli-Best, Associate

Kirk Associates

Stephen Kirk, PhD, FAIA, FSAVE, CVS, LEED AP
Steve Garrett, Partner, Chief Operating Officer, CVS

Ross-Bain Green Building

Jeff Ross-Bain, Principal, PE, LEED AP BD+C

8.2 Reference Documents

May 2011, PMIS 156680 Construct Marjory Stoneman Douglas Visitor Center and Boat Basin
December 2001, Building Assessment Report, HNTB
November 1990, Environmental Audit, Hazardous Waste Surveys, Inc.
May 2010, Marina Sketches and Estimate, URS, ENP
February 1991, Development Concept Plan, EA, FONSI, Everglades Gulf Coast, NPS Staff
May 2012, Visitor Center Building Cost Estimate, Kirk and Associates
May 2012, Visitor Center Site Cost Estimate, AECOM.

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