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August 5, 2020

M E M O R A N D U M

TO: Virginia Barker, Natural Resources Director

RE: Item G., Review of Documents for Hightower Beach Park

The Board of County Commissioners, in regular session on August 4, 2020, authorized you to spend up to one hour reviewing the documents for Hightower Beach Park that protects the height limitation uses and the land uses on the adjacent properties, by banning density increases and limiting human activity; and authorized for a report to come back to the Board of the findings.

Your continued cooperation is greatly appreciated.

Sincerely yours,

BOARD OF COUNTY COMMISSIONERS
SCOTT ELLIS, CLERK


Kimberly Powell, Clerk to the Board

/ds

cc: County Manager
County Attorney

to
125-2000
to
125-2000

Map of Front Plan

FLORIDA COASTAL RESOURCES TRUST

PRESERVATION PROGRAM

Project Number 18-044-P8A

Oceanfront Wildlife and Habitat Preservation

(Phase 1)

Project Number 18-044-P9A

Oceanfront Preservation

(Phase 2)



Application

- ① Application
- ② Preservation plan
- ③ Preservation plan
- ④ 1998 Comp
- ⑤ 1999 Management
- ⑥ 2015 Management
- ⑦ Agreements SD
- ⑧ Cover to
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Sandra Sullivan

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EXHIBIT

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Project Site Location Map

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Master Site Plan

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Special Management Conditions (98-044-P8A & 99-0440P9A)

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Biological Survey/Ecological Assessments (April 1998 & April 1999)

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1) Introduction:

Project name

This management plan is intended to provide guidance concerning future use and management of the Oceanfront Preserve ("preserve") as a natural area in the City of Satellite Beach ("City"), Brevard County, Florida. The Preserve was acquired through two successive Preservation 2000 grants, Project Number 98-044-P8A (Oceanfront Wildlife and Habitat Preservation) and Project Number 99-044-P9A (Oceanfront Preservation), designated Phase 1 and Phase 2, respectively.

Project location.

The Preserve site stretches along two segments of the City's 2.8 mile Atlantic Ocean beachfront between State Road A1A and the Atlantic Ocean (**Exhibit 1**).

Phase 1: Two parcels, totaling 15.32 acres and 2,300+ feet of ocean frontage, were acquired through Project Number 98-044-P8A. The two parcels are separated by Brevard County's 1.6-acre Hightower Beach Park with 285 feet of ocean frontage, and bracketed by two State-owned parcels totaling 1.55 acres with 225 feet of ocean frontage. These parcels combined total 18.4 acres and 2,810 feet (0.53 mile) of oceanfront in public ownership and management. This is the longest contiguous stretch of natural beachfront habitat between the Federal space complex on Cape Canaveral 14.8 miles to the north and a 0.7-mile portion of the Archie Carr National Wildlife Refuge 12.6 miles to the south.

Phase 2: There is one tract (2 parcels with one owner) included in Project Number 99-044-P9A which the City acquired in 2001. It contains 1.66 acres of undeveloped beachfront with 275 feet of oceanfront lying 9,200 feet south of the already-acquired parcels. This tract abuts the southern border of Pelican Beach Park, owned by Brevard County and managed by the City of Satellite Beach. The park encompasses 8.7 acres with 1,300 feet of ocean frontage. The park, combined with the P-2000 acreage, total 10.36 acres with 1,575 feet of ocean frontage.

The two phases of this project, combined, placed 16.98 acres of oceanfront land fronting 3,600 feet of Atlantic Ocean beach into public ownership and management for conservation purposes. These acquisitions, combined with other publicly-owned land, resulted in 33.8% of the uplands between the beach and SR A1A, representing 35.5% of the City's 2.8 miles of oceanfront, being permanently preserved for public use and conservation.

Project History

The project site contains the last remaining imperiled natural Coastal Strand and Coastal Grassland, as well as much of the remaining imperiled natural Beach Dune, in the City. The project site is documented to contain biologically viable populations of three listed plant species (one endangered and two threatened) and to provide the highest nesting density in Brevard County for two endangered sea turtle species outside the Archie Carr National Wildlife Refuge 12 miles to the south. This acquisition represents the culmination of recurring efforts by the City over a period of two decades to place into public ownership remaining undeveloped oceanfront in the City. A successful City referendum in 1981 to finance the acquisition was never implemented because of legal difficulties with respect to State statutes.

Project Future

About half of the 10,200+ residents of the City of Satellite Beach make regular use of the City's ocean beach. Approximately 20 percent visit the beach daily. An additional 27 percent visit the beach on a weekly basis. Because the City is 99+ percent built-out, the number of City residents who visit the beach is not expected to change substantially. However, individuals from mainland Brevard County and inland Central Florida use the beach. As development continues within Central Florida, the number of visitors to the City's beach from outside the City will increase. One estimate of build-out for Brevard County, reported by the East Central Florida Planning Council in the mid-1990s, was 850,000. This is approximately double the County's current population. Only two of the City's 14 beach access dune crossovers are adjacent to substantial parking. Although neither location currently experiences saturation of parking, and there is substantial rarely-used parking at one of these locations (Pelican Beach Park), the presence of parking at two locations tends to concentrate out-of-town beach use to these two locations. Expansion of very limited parking now provided by the County at Hightower Beach Park (surrounded by the two parcels comprising Phase 1 of Project Number 98-044-P8A) has increased by half the locations along the beach which those arriving by automobile tend to use. This distributes recreational use of the beach more evenly along its length. Provision of adequate beach access and parking, also, has facilitated successful closure of unauthorized foot traffic across the dune now occurring on the northernmost portion of the project site (the northern parcel in Phase 1 of Project Number 98-044-P8A).

2) Purpose:

the 27 miles between Federal lands on Cape Canaveral and the Archie Carr National Wildlife Refuge.

Specific reasons for acquiring the Project Site include the following:

- [1] It places into public ownership for preservation an expanse of 2,300 feet of dark, undisturbed beach especially important for green sea-turtle nesting.
- [2] It creates the only public ownership of reasonably-intact Coastal Strand habitat between Cape Canaveral Air Station (18 miles to the north) and Spessard Holland Park in Melbourne Beach (9 miles to the south).
- [3] It adds to the 1.55 acres of State-owned and 1.60 acres of County-owned land already being preserved for conservation within the project boundaries.
- [4] It prevents the last expansive oceanfront vista from being lost to burgeoning highrise construction occurring along the eight miles of coastline between the Pineda and Melbourne Causeways.
- [5] It helps stem the rise in population density for the City of Satellite Beach, which currently has a higher population density than 85% of Florida's 404 municipalities. It reduces the City's anticipated population increase by 28%, and thereby reduces its projected final built-out population by 2.6%.
- [6] The site has exceptional environmental value:
 - In annual surveys since 1989, University of Central Florida biologist Llewellyn Ehrhart, Ph.D., has documented that Phase 1 of Project Number 98-044-P8A is a sea-turtle nesting area for the Federal- and State-endangered Atlantic green turtle (*Chelonia mydas mydas*), with the highest nest density north of the Archie Carr National Wildlife Refuge, and the Federal- and State-threatened Atlantic loggerhead (*Caretta caretta*).
 - Ecologist Linda A. Olson, M.S., has documented that it supports three State-listed plant species, two endangered and one threatened, found on 20± acres of Beach Dune, Coastal Grassland, and Coastal Strand designated by the State as "imperiled".
- [7] It permits expansion of two urban core parks adjacent to the ocean.
- [8] It provides an outdoor classroom/laboratory for local schools and other groups, to include college-level research on coastal dynamics and related topics.

The project site will be used for **wildlife and habitat preservation, open space and beach access** for the public, and **environmental and history education**.

Activities Intended on Site include City-sponsored **environmental education**

Management Objectives

The highest priority management objective for the project site is to **preserve open space** along the City's oceanfront for public use. This will be accomplished by preserving the site in its natural state under public ownership and management.

The second priority management objective is to **preserve wildlife, wildlife habitat, and natural vegetative communities** on the project site. This objective will require a variety of actions.

- Removal of exotic vegetation which is replacing beneficial native plants. This will be a long-term effort requiring several years to cut and treat stumps so that the exotic plants do not become reestablished from still-living root systems. Preservation of the natural communities will then require recurring visits to identify and remove exotic vegetation as seeds transported by wind or wildlife sprout.
- Control of unauthorized human foot traffic across the foredune and natural areas between SR A1A and the beach. This will be accomplished with signs and planting of native vegetation which impedes foot traffic at vulnerable points along the dune line.
- Application of best management practices to control succession within the natural communities on the site to preserve conditions which are characteristic of these naturally pyrogenic regimes. This will involve removal of biomass on a recurring basis by fire or mechanical means, with fire the preferred method where conditions permit on a long-term (10-plus year) schedule.

The third priority objective for the project site is to **provide and promote environmental education**. This will be accomplished by developing programs within the City's Recreation Department (such as "ecocamps") which make productive use of the special characteristics of the project site.

The fourth objective is to **improve public access to the beach**. These efforts will be accomplished as resources permit over a period of 10 or more years. They will include:

- Removal of minor structures existing in the natural areas,
- Installation of benches, modest picnic facilities, and restrooms on Phase 1 of the project site,
- Construction of a boardwalk from which to view the natural areas on the southern

Phase 1.

- Connecting to Brevard County's Multi-Use Trail along SR A1A that will eventually span 40 miles of Brevard County's coast from its southern boundary at Sebastian Inlet to Port Canaveral.

Comprehensive Plan Directives Furthered by the Project

Since initial adoption in 1988, the City's Comprehensive Plan has reflected a strong sense of responsibility for preserving and enhancing the natural resources available to its residents; and these commitments were strengthened in the 1998 revision, adopted by City Ordinances 716 and 735 and Resolution 681 and accepted by Florida Department of Community Affairs in 1998. In 1999 the City Council approved Ordinance 748 and Resolution 706 amending the Plan to further strengthen its environmental features. Four elements of the Plan relate directly to this project.

Recreation and Open Space Element.

As it relates to **open space and beach access** for the public, the project helps the City implement this element of its Comprehensive Plan, which requires the City to expand open spaces, particularly along its waterfront; improve public access to passive recreation areas and oceanfront beaches; and combine public use of open space with preservation of natural habitat.

[1] This element's single **goal** is sufficient parks, recreation facilities, and open space areas to provide the citizens of Satellite Beach with a wide variety of leisure activities to make the City an attractive community in which to live.

[2] **Objective 1.1** directs the City to provide its residents recreation and open space facilities which meet or exceed Level-of-Service standards.

[3] **Policy 1.1.6** requires City acquisition of recreation/open space facilities to be prioritized in accordance with expressed desires of the community and availability of grant funds and other incentive programs.

[4] **Objective 1.3** directs the City to pursue affordable, environmentally sound, and convenient means of access to open space, parks, and passive recreation areas within the City, to the extent financially feasible.

[5] **Policy 1.3.2** directs the City to maintain existing Atlantic Ocean and Banana River accesses and improve access facilities to the extent financially and environmentally feasible.

[6] **Policy 1.3.3** directs the City to develop an oceanfront greenway to improve

Because the City of Satellite Beach lies entirely within the Coastal High Hazard Area, its Comprehensive Plan has combined the Coastal Management and Conservation elements, since the requirements of each are nearly identical. As it relates to **open space, beach access, and habitat preservation**, the project helps the City implement this combined element of the Plan, which contains the following requirements.

[1] This element's single **goal** requires the City to protect natural resources while safeguarding human life, property, and public funds from the effects of nature in the Coastal High Hazard Area.

[2] **Objective 1.1** calls for the City to limit man-induced dune and beach damage, expand dune restoration efforts, and improve public beach access.

[3] **Policy 1.1.3** requires the City to maintain and enforce current codes, especially the Dune Regulation Ordinance which established the Ocean Bluff Protection Area, to effectively prohibit construction and related building activity in the Protection Area.

[4] **Policy 1.3.1** prohibits public buildings or infrastructure east of the Coastal Construction Control Line, except for minor structures supporting recreation and open space activities, dune-protective pedestrian access facilities, and existing road and infrastructure within developed public rights-of-way.

[5] **Objective 1.6** directs the City to establish and preserve areas for fisheries, wildlife, and wildlife and marine habitat on public property within the City, and to encourage private landowners to do likewise.

[6] **Policy 1.6.3** requires areas deemed appropriate for preserving the natural functions of existing soils, wildlife habitats, rivers, floodplains, wetlands, beaches, shores, fisheries, and marine habitats to be re-evaluated and identified in the Comprehensive Plan and Land Development Regulations or by ordinance. This will be done to protect those areas from development or inappropriate alteration.

[7] **Policy 1.6.6**, in an effort to protect wildlife habitat on private property, requires an assessment of threatened, endangered, and special-concern species on all proposed development in areas which may possess critical habitats for these species.

[8] **Objective 1.7**, in an effort to protect the natural functioning of surface-water bodies in the City, directs the City to develop a Shoreline Protection Ordinance, giving priority to water-dependent shoreline land uses and improvements which avoid adverse environmental impacts, meet Comprehensive Plan standards for public access, avoid shoreline hardening structures, and enhance water quality in the Indian River Lagoon.

Future Land Use Element.

from storms, continuing beach erosion, and the rising sea level.

[1] This element's single **goal** requires the City to promote a pattern of land use that will foster a healthy and attractive environment, avoid blighting influences, preserve and enhance natural resources, and provide reasonable public safety and security from hazardous conditions.

[2] **Policy 1.1.2** requires the City to monitor zoning for land east of the Coastal Construction Control Line and adopt codes which balance economic feasibility, environmental considerations, and limits on development in the Coastal High Hazard Area.

Capital Improvements Element.

As it relates to **habitat preservation and beach access**, the project helps the City implement this element of its Comprehensive Plan, which requires the City to protect its ocean shoreline. **Policy 1.3.1** directs the City to protect and renourish dunes and beach areas, maintain public facilities, and improve recreation opportunities east of the Coastal Construction Control Line without additional development.

Elements in Conflict with Project.

None of the elements in the City's Comprehensive Plan entail land uses or other considerations which may **negatively impact the project site**. The City's Plan is fully consistent with the purposes and objectives of this project.

As the culmination of an extended effort by the City to acquire undeveloped oceanfront land for public use, the Project Site will be managed only for the conservation, protection, and enhancement of natural resources, and for public outdoor recreation that is compatible with the conservation, protection, and enhancement of natural resources on the site. The site will be used for the specific purposes described at the beginning of this Management Plan. Consistent with this purpose, the Project Site will be identified in all signs, literature, and advertising as being publicly owned and operated as a natural conservation and outdoor recreation area.

Amending the Comprehensive Plan Land Use Designation for the Project Site

Amending the City's land use designations to properly reflect use of the Project Site as public open space was completed in November 2003. City Council enacted Ordinance

Institutional Use in conjunction with similar action for another portion of adjoining Pelican Beach Park.

3) Site Development, Improvement, and Access:

Physical Improvements

Existing and proposed physical improvements on the Project Site are shown on the attached Master Site Plan (**Exhibit 2**).

Improvements Intended on Site include the following:

[1] Habitat improvements will involve removing exotic plants and replacing them with appropriate native plants. Blocking foot traffic and restoring native vegetation are appropriate in six areas where unauthorized foot traffic has damaged the dune bluff on the northern parcel of Phase 1.

[2] Beach access improvements on Phase 1 will involve replacing an existing dune crossover with one meeting ADA standards, expansion of 16 existing paved parking spaces to about 30 spaces, and construction of new shower and restroom facilities

[3] Environmental education improvements on the southern parcel of Phase 1 will involve construction of a raised boardwalk up to 8 feet wide and 1,200 feet long (0.25 acres) into the large expanse of Beach Dune, Coastal Grassland, and Coastal Strand habitats.

[4] Greenway improvements will be met by construction of the restroom facility on Phase 1, which will be in close proximity to Brevard County's Coastal Corridor Multi-Use Trail along SR A1A. This, coupled with new picnic facilities and benches, will create a small "rest stop" on the trail

[5] All improvements will be located and designed to minimize or eliminate the long-term risk of storm or flood damage in consultation with appropriate hazard mitigation agencies or experts.

[6] No improvements are anticipated on Phase 2. This tract is to be used for habitat. The upland portion will be accessed by visitors across the uplands from Pelican Beach Park to the immediate north, and the beach portion will continue to be accessed from immediately adjacent public beach. It is anticipated that there will continue to be

Facilities Intended on Site.

With the exception of the raised boardwalk, expanded parking, and new restrooms on Phase 1 the only facilities intended are **those already existing** on the project site. The City will coordinate with Brevard County to integrate improvements on Phase 1, particularly parking, with the County's Hightower Beach Park. Hightower park has very limited parking, which occupies approximately one third of the County-owned land available for the park. The goal of coordination would be to make efficient use of available land to provide parking and other amenities appropriate for both Hightower Beach Park and the adjoining project site. This will likely involve a common access point and parking for both facilities – with up to approximately 50 parking spaces (1± acre) for the joint park facilities. Parking areas will be paved with pervious material to the extent feasible.

The City will place on each of the tracts acquired an entrance sign identifying the Project Site as being open to the public and having been purchased with funds from Florida Communities Trust and the City for conservation purposes.

Brevard County is scheduled to complete construction of its Coastal Corridor Multi-Use Trail through the City in 2004; it has already been completed along 2.0 of the 2.8 miles of SR A1A in the City. This will add to the 8 miles of existing trail which now extends 6+ miles along SR A1A south of the City. The path will pass immediately adjacent to both tracts in the Project Site along SR A1A. The pending extension will complete the path through the City and 0.7 miles beyond it to the Pineda Causeway (SR 404) to the north. Completion of the path and its intersection within the City with five traffic signals, four featuring paved bicycle/pedestrian paths westward into residential areas, provides ready access to the project site by foot and bicycle without encountering free-flowing traffic along SR A1A. The County, in constructing the path so far, has made use of those features which were available or readily implemented to promote safety. Within the City this includes locating the path off the A1A right-of-way in those few places where alternatives are available. The City renovated and made accessible installed bicycle racks in the parking area of the commercial parcel on Phase 1 to facilitate bicycles as an alternative to automobiles as a mode of transportation to the Project Site. Sidewalks and a traffic signal at Phase 1 already facilitate pedestrian traffic to the Project Site. Finally, the City will incorporate a picnic table and benches into the boardwalk, and restroom facilities, on Phase 1 accessible to those traveling along the bicycle/pedestrian path.

Second, installation of signs identifying the site as purchased using Florida Communities Trust funds, prohibiting unauthorized foot traffic across the natural areas, and relating to protection of listed animal species and their habitat will result in minimal alteration of the site totaling approximately 100 square feet.

There are two proposed substantial alterations of natural areas on Phase 1. Recurring removal of biomass by fire or mechanical means will be necessary to properly manage pyrogenic vegetative communities present in natural areas on the Project Site. This will be accomplished using best management practices over a period spanning 5 to 10 years or more per cycle. Construction as resources permit of a boardwalk and observation platforms from which visitors can view the natural areas will permit public access to these areas while protecting their flora and fauna from disturbance due to human intrusion. The boardwalk is anticipated to be up to 1,200 feet long. At a nominal 8 feet wide, the total land area covered would be approximately 0.25 acre. Restrooms and associated paved access to them from the boardwalk and parking area will occupy approximately 1,000 square feet. Parking expansion for up to 30 automobiles, configured to allow parking for up to three school busses, is planned on the Hightower Beach Park parcels owned by Brevard County within Phase 1. As the conceptual site plan indicates, development of the FCT and Brevard portions of this park will be seamlessly integrated. The location of the parking expansion was chosen to use the area which has already been impacted the most heavily by human activities, and to avoid unnecessary impacts to high-quality conservation land on the FCT parcel.

There is an additional potential alteration to the natural areas on Phase 1. There are no available relocation recipient sites for gopher tortoises on the barrier island. The result is potential eventual extirpation of this species from the developed portion of the barrier island upon buildout. The City has used its 52-acre Samsons Island passive recreation and wildlife refuge as a recipient site in cooperation with local developers and the Florida Fish and Wildlife Conservation Commission. If, at some time in the future, the City and a developer desire to use the project site as a relocation recipient site, the Florida Communities Trust agrees, and City is successful in negotiating an agreement with the Florida Fish and Wildlife Conservation Commission to use a portion of the Project Site as a gopher tortoise relocation recipient site, it is likely that a low (2-foot+) fence (most likely chain link) or wall will be required along SR A1A and the boundaries of Hightower Beach Park to prevent tortoises from wandering onto the roadway. If feasible and approved, such a fence or wall would total approximately 4,000 feet in length. The environmental assessment of the site noted that much of Phase 1 matches

construction plans for review and approval.

Proposed Alterations of Disturbed Areas

There are no disturbed areas on the project site.

Coordination of Alterations with Protection of Listed Plant and Animal Species

Construction on the Project Site will be undertaken in a manner to best protect the listed plant and animal species present. Construction will, first, endeavor to not disturb listed plant species. If listed plants must be disturbed, the extent of disturbance will be kept to the minimum practicable and the listed plants will be relocated to a suitable area on the project site. In no case will the only specimen(s) of listed plants known to be on the Project Site be disturbed. Construction along the beach will be timed to not disturb sea turtle nesting and nests. This effectively limits construction on the beach to the period of November through April.

The City may require permits from the Florida Department of Environmental Protection (FDEP), the Florida Fish and Wildlife Conservation Commission (FFWCC), the Florida Department of Forestry (FDOF), Florida Division of Historic Resources (FDHR), and the U.S. Fish and Wildlife Service (USFWS) for anticipated activities on the Project Site. Such activities include construction, management of vegetation through mechanical means and/or controlled burns, and - potentially - use of the Project Site as a gopher tortoise relocation recipient site.

The City will provide the FCT prior to commencing construction on the Project Site copies of required licenses and permits from State and Federal agencies. In those instances where appropriate agencies do not require a permit (normally because of the urban nature of the City) the City will provide a letter from the agency stating that no permit is required. Neither City nor County permits will be required for construction on the Project Site.

Upon determination that the City desires to undertake site alterations or physical improvements not addressed in this Management Plan, the City will notify the Florida Communities Trust in writing of that intention, including a description of the anticipated action and the area expected to be impacted. The City will not commence actions until obtaining written approval by the FCT. In the event action is of an emergency nature

Access

The entire Project Site lies between the Atlantic Ocean coast and SR A1A. As such, public access is available from both the eastern and western boundaries of the site.

Existing parking for 16 automobiles and an adjacent dune crossover on Brevard County's Hightower Beach Park bracketed by Phase 1 provides automobile and pedestrian access to the site and across the site between the public right-of-way along SR A1A and the beach. Expansion of the parking area and replacement of the existing dune crossover with one meeting ADA standards will improve public access along the northern portion of City's beach beyond that now provided. Addition of restroom facilities will facilitate those with children, seniors, and those with disabilities to enjoy the park, since the closest restrooms available are at fast food restaurants half a mile away. The restrooms will also improve the experience for the several hundred school students who visit the site annually.

Extension of Brevard County's Coastal Corridor Multi-Use Trail along SR A1A adjacent to the Project Site is enhancing public access to the Project Site by pedestrians and those on bicycles. A bicycle rack is provided by the City at the authorized entry point to Phase 1.

Future construction of a boardwalk with observation platforms affording the public an opportunity to view natural areas on Phase 1 with minimal disturbance to the site will further enhance public access. The exact location of the boardwalk will be determined based on the distribution of natural features of interest, ease of public access, and protection of natural features on the site. When the location and size of the boardwalk are available, they will be provided to the Florida Communities Trust for review and approval prior to construction.

The replacement boardwalk on Phase 1 will be constructed to ADA standards. This will improve handicapped access to this portion of the City's beach.

Easements, Concessions, and Leases

Brevard County owns a small tract (410 +/- square feet) along the Project Site frontage on A1A. The County tract contains a sanitary sewerage lift station that serves the city.

conducted in accordance with Florida Administrative Code. The city will reimburse Florida Communities Trust for their portion of the funding of the Project Site purchase.

There are no existing concessions or leases on the Project Site. There is an unused 30-foot wide FDOT stormwater easement running east-west across the northern parcel of Phase 1 between SR A1A and the Atlantic Ocean beach (See Master Site Plan at **Exhibit 2**). The City is working with FDOT to redesign stormwater management on the SR A1A right-of-way so that there will be no future need for outfalls onto the beach, which EPA has banned.

The City, at such time as the condition of natural areas, available resources, and development conditions on the barrier island permit, may desire to enter into an agreement with the Florida Fish and Wildlife Conservation Commission and a commercial developer to develop a portion of the natural area of Phase 1 as a gopher tortoise recipient site. The FGFWFC, among other conditions, requires that the recipient site be designated a conservation easement. This is a condition consistent with the purposes of the Florida Communities Trust. The City has established such an agreement for its 52-acre spoil island passive recreation park and nature preserve for relocation of 40 gopher tortoises onto the island. Developers pay on the order of \$250 to \$300 per tortoise to the owner of a recipient site. The City is using this income to improve gopher tortoise habitat on the recipient site. The expectation is that the City might be able to establish a population of 30-plus gopher tortoises on the Project Site. As with the current relocation, any income realized would be used to improve habitat on the Project Site.

The City will provide the Florida Communities Trust written notice and information at least 60 days prior to commencement of any proposed lease of interest, operation of any concession, sale or option, granting of any management contracts, and use by any person other than in such person's capacity as a member of the general public. No such arrangement will be formally entered into by the City prior to receiving written approval by the Florida Communities Trust. The City will also place all fees and revenues generated on the project site into a special account to be used for management of the project site.

4) Key Management Activities

This Management Plan addresses conditions which both apply to all sites acquired with

The Project Site contains facilities and natural features which require periodic, recurring, or occasional maintenance. Trash containers on the site will need to be serviced on a regular basis. The existing parking lot will need to be relined and resurfaced periodically. The existing dune crossover and the proposed new boardwalk and restrooms will need to be repaired, and eventually replaced, as the structures age. Signs on the project site will need to be repaired and replaced as they age. Exotic vegetation which is present or becomes established within the natural vegetative communities on the Project Site will need to be removed. Natural vegetation on the project site will need to be reduced on a recurring basis (over periods of 5 to 10 or more years) by fire or mechanical means to preserve the natural functioning of these pyrogenic regimes.

The City's Public Works Department will be responsible for all aspects of property maintenance for the Project Site. This will entail Public Works employees accomplishing the tasks themselves, using the services of county prisoners or commercial contractors, or coordinating volunteer efforts. All these means of accomplishing necessary maintenance are routinely used for the City's other parks.

Security

The City's Police Department will be responsible for security at the Project Site, as they are for all other public sites within the City. The same means for providing security will be employed at all sites. These include regular patrols by uniformed officers and by Citizens On Patrol (a volunteer organization operated by the Police Department). As the need arises, volunteer Park Rangers (used at the City's other parks) will assist with security at the Project Site. Patrols will be augmented as needed by other available and necessary means, including surveillance and video recording, used at the City's other public facilities.

Staffing

The City will need no new permanent staff to operate the site. The City's Public Works Department will provide maintenance for the Project Site using existing staff. The City's Police Department will provide security with existing staff. The City's Recreation

preserve since 1990. The existing park volunteer program is managed by the City's Recreation Department, and they will manage any new one for the Project Site.

Natural resource protection

The Project Site contains three Imperiled vegetative communities (Beach Dune, Coastal Grassland, and Coastal Strand). Within these communities there are documented biologically viable populations of two Endangered plant species (beach star and beach verbena) and one Threatened plant species (Indian mound prickly pear). In addition, two Endangered species of sea turtles use the upper beach on the property for nesting. A biological survey/ecological assessment of the property conducted in 1998 determined that significant portions of habitat on Phase 1 are appropriate for the Florida scrub jay (a Threatened species), the southeastern beach mouse (an Endangered species), and the gopher tortoise (a Florida Species of Special Concern), although no evidence of habitation by any of these three species was found.

The largely undisturbed natural areas comprising the Project Site make limitation of human impacts a high priority management issue. The four primary tasks are preventing unauthorized foot traffic, removing exotic vegetation, posting signs relating to protection of listed species and their habitat, and undertaking a long-term series of controlled burns or mechanical thinning of brush to simulate normal conditions within the pyrogenic communities. Biomass reduction is necessary to prevent natural progression of Coastal Grassland to Coastal Strand and Maritime Hammock. Biomass reduction is also needed to maintain open areas characteristic of appropriate habitat for scrub jays, beach mice, and gopher tortoises.

Foot traffic will be controlled by posting with signs and planting native species which obstruct foot traffic (such as cacti). Exotic vegetation will be removed using hand tools, chain saws, and a backhoe. Cut exotic trunks will be treated with a herbicide to kill them and prevent their sprouting with new growth. These two tasks were initiated as soon as the property was accessible and the modest resources needed could be mustered.

Periodic reduction of biomass through controlled burns or mechanical thinning entails assembly of substantial resources and their application in accordance with well-established best management practices. The first step was to develop a draft burn/biomass management plan for natural areas on the Project Site. This plan

Nesting by listed sea turtle species on the upper beach of the project site makes protection of the upper beach and dune bluff important. The best protection to be afforded these features is to preserve naturally-occurring native vegetation which protects the dune bluff and extreme upper beach from erosion by surf and wind. Blocking human foot traffic across the dune will accomplish this task. To protect nesting turtles from harassment, the City will post signs at the entrances to the beach, as it does at other beach access points, citing the need to not disturb turtles on the beach and to refrain from using light sources on the beach during egg laying season. The City will also coordinate with the Florida Fish and Wildlife Conservation Commission's Bureau of Protected Species Management to investigate other potential means to protect nesting sea turtles.

Survey of the natural resources on the Project Site

The City commissioned Biological Survey/Ecological Assessments of the Project Site which were completed on 21 April 1998 and during May 1999 (**Exhibit 4**) as an aid in preparing the Florida Communities Trust applications for this site. Those Surveys include lists of and describes vegetative communities, plant species, and animal species found on the Project Site. The Surveys also identify listed plant and animal species and imperiled communities on the Project Site and areas covered by each vegetative community.

The 1998 Biological Survey identified the potential for the endangered southeastern beach mouse to occur on Phase 1, although none were observed. The small size of the mice, the habitat in which they are found, and their foraging habits make it unlikely that they would be observed during a visit of several hours during midday hours. The City completed a survey for Southeastern beach mice on Phase 1 and adjacent County and State parcels during December 2000 which found no evidence for Southeastern beach mice on this 18 acres of oceanfront habitat (**Exhibit 5**).

Actions to be taken to protect natural resources on the Project Site

Vegetative communities and listed plant and animal species will be protected by limiting human incursions into natural areas of the Project Site to those necessary to maintain the habitat. Periodic reduction of biomass will preserve the imperiled vegetative communities and appropriate habitat for upland listed animal species. If a portion of the

Upon identification of a potential newly identified listed species on the Project Site, the City will enlist the aid of a knowledgeable individual to confirm the identification as a listed species. Upon confirmation, the City will complete the Florida Natural Areas Inventory form (**Exhibit 6**) to report to that agency the occurrence of the species on the property.

The City conducts a scheduled biological monitoring visit of the natural areas of the Project Site twice annually, once during the growing spring and summer seasons and once during the dormant autumn and winter seasons. The visit entails a walk throughout the area looking for the presence of listed plant and animal species, invasive exotic plant species, feral animals, and evidence of inappropriate human activities. The visit also considers the general condition of the natural areas, including the amount, type, and distribution of vegetative cover. The City will also have available reporting sheets on which City employees and others working on the Project Site can report the presence and activities of animals, plants, and people which may be of interest. The City will coordinate with the Florida Fish and Wildlife Conservation Commission prior to undertaking new activities on the Project Site to determine whether any permits are required and to obtain such permits if necessary.

Resource Enhancement

Natural resources on the Project Site in need of enhancement totaled approximately 2.7 acres on Phase 1 where exotic vegetation needed to be removed. These were treated in 2002, and regrowth of exotic plants is being controlled. The exotic vegetation included species identified in the Exotic Pest Plant Council's list of *Florida's Most Invasive Species*, as well as other, less invasive non-native species. The intention is to return the natural areas of the Project Site to as near an undisturbed condition as is feasible with available resources. Restoration involved removal of the exotic vegetation by a contractor under a State contract.

The City has found that native species colonize areas of less than 3 contiguous acres within approximately one year of exotic vegetation being removed. The new growth proceeds from dormant seeds already in the soil, seeds imported by wind and wildlife, and sprouting of rhizomes and roots lying under the now-sunlit surface. The City allows natural colonization for cleared areas of less than 1 acre. Areas between 1 and 3 acres are allowed to develop naturally or are planted depending on conditions and available resources. At no time has erosion in the excessively drained soils characteristic of the

during its semiannual scheduled biological monitoring visit of the natural areas of the Project Site to prevent reinfestation. The City will also take action to remove exotic species which are discovered during unscheduled visits to the Project Site.

Draft burn/biomass management plan

As discussed at the beginning of the Natural Resources section of this Plan, the City anticipates continued use of controlled burns or mechanical thinning to preserve pyrogenic vegetative communities on the project site. A plan for biomass management was prepared for Phase 1 in a manner similar to those prepared for the City's two other parks exceeding 20 acres in size, by volunteers assisted by County and State natural resource management professionals. The City incorporated into development and implementation of the burn/biomass management plan lessons-learned by other local municipalities and during the 1998 wildfires throughout the State. The City includes in implementation neighborhood outreach such as fliers mailed to adjoining landowners prior to clearing of a major portion of the City's 52-acre passive park and nature preserve. Development of the burn plan was coordinated with the Division of Forestry. It will be five or more years before a biomass management plan is necessary for Phase 2, given the lack of fuel load or developing maritime hammock community. This plan will be developed in a manner similar to that employed for the plan for Phase 1.

Removal of feral animals

Feral animals found on the Project Site during scheduled monitoring visits, incidental to other visits, or due to reports to the City will be removed as quickly as resources can be assembled to do so. The Biological Surveys conducted to assist in completing the Florida Communities Trust grant application found no evidence of feral animals on the Project Site. A subsequent survey in 2003 found and live-trapped and relocated five feral cats living on Tract 1.

Archeological and historical resource protection

There are no known archeological or historic sites on the Project Site, as confirmed by the Florida Department of State, Division of Historical Resources (See letter at **Exhibit 7.**) In the event that any such sites are identified in the future, the City will notify the Division of Historical Resources by letter and prohibit collection of artifacts or disturbance of the site without prior authorization from the Division of Historical

archaeological organizations to survey the area to be disturbed for evidence of archaeological artifacts. Regardless of the time frame for construction on the project site, the City will endeavor to obtain an archaeological survey of the project site within two years of obtaining title to the property.

Education Program

The City will provide environmental educational programs using the Project Site through the City's Recreation Department. The City anticipates the Sea Turtle Preservation Society continuing to provide nesting tours in-season on the beach on Tract 2.

The Sea Turtle Preservation Society will continue to provide regularly scheduled night beach walks during June and July for local residents and tourists of all ages to observe and teach about nesting sea turtles as it has for 12 years. Held approximately 45 times each nesting season, the walks are enjoyed by about 1,250 people annually.

The City's Recreation Department has sponsored well-subscribed "eco-camps" conducted by biological professionals on its 52-acre passive park and nature preserve on the Indian River Lagoon for children of grade school age. The camps have been held an average of 3 times per year with 15 to 20 children attending each session. The Recreation Department has revised its eco-camp program to incorporate the oceanfront Project Site into their curricula. The City is seeing participation in the oceanfront camps, over a period of years, grow to match that experienced in its lagoon-focused camps. We have also provided environmental education for more than 400 local public, private, and home-school students.

The City has entered into an agreement with Rollins College in which students in environmental studies can acquire real-world experience in management of natural resources as interns working for the City. The initial effort with two students produced a vegetative management plan and a fire management plan for the 18 contiguous acres of publicly-owned land including the 15 acres in City ownership on Phase 1. One of those students, after graduation, assisted with conducting a controlled burn in accordance with the plan. Another student obtained the State grant by which the exotic vegetation was removed from Phase 1 of the project site. It is anticipated that students will continue to assist, under professional guidance, in developing and implementing management plans for the project site.

Coordinated management

A Division of Forestry ranger visited Phase 1 during September 2000 and provided advise on how to develop a burn/biomass management plan for the site. Brevard County's lead fire boss also was instrumental in devising, reviewing, and implementing that plan.

The City will request that the Florida Fish and Wildlife Conservation Commission and the Department of Environmental Protection Agency's Bureau of Protected Species Management comment on this management plan as it relates to protection of listed species, development of the project site, and development of strategies to protect listed species and their habitat. The City expects, over time, to develop a good working relationship with these agencies, Brevard County Natural Resources Management Office, and similar organizations to assist in managing the growing inventory of natural lands within the City.

The City will coordinate with Brevard County staff on major alterations to and activities on the large portions of the Project Site which about the County's Hightower Beach Park. Such alterations include construction of the boardwalk and observation platforms and expansion of the existing parking area. Activities include mechanical thinning of large areas of native vegetation or controlled burns. The City has implemented an agreement with Brevard County on joint-use of the County's Hightower Beach Park and the two State-owned parcels abutting Phase 1. The County already has a lease on the two State parcels for conservation use. The agreement permits the City to develop and manage the combined 18 acres of State, County, and City lands as a unit for conservation purposes.

Greenway management

Brevard County's Coastal Corridor Multi-Use Trail being constructed by Brevard County along the Florida Department of Transportation's SR A1A right-of-way along the South Brevard Atlantic Coast, provides the means to walk or ride a bicycle for over 8 miles as close as one can to the beach while remaining on the public right-of-way. This path connects a series of existing public parks which provide convenient resting spots and access to the beach. Extension of the path north to the Pineda Causeway and eventual closure of a 4-mile gap between bicycle paths north of Patrick Air Force Base will connect this path with a similar path running through Cocoa Beach and Cape Canaveral

County's barrier island, within and between the communities and recreational/open space destinations on the island.

The City's Bicycle/Pedestrian Ad-hoc Committee included in its recommendations to the City improvements which will enhance the utility and durability of the SR A1A bicycle/pedestrian path. The City will continue to work and coordinate closely with Brevard County in developing and managing bicycle and pedestrian paths within and through the City. The City will also coordinate with Brevard County, the Department of Transportation, the Florida Fish and Wildlife Conservation Commission, and other public and private landowners to develop and implement a resource protection and management strategy for greenway sites and linkages within the City.

5) Cost Estimate and Funding Source:

Estimated costs associated with implementing this Management are as follow:

Fiscal Category	Expense Item	Amount	Source
Capital Investment ¹	Expansion of parking	110,000	Grant
	Replacement of dune crossover to ADA standards	50,000	Grant
	Construction of natural areas boardwalk	70,000	Grant
	Construction of restroom facilities	100,000	Grant
	Construction of picnic facilities	10,000	Donation/grant
Expenses			
Project Identification Signs ^{1,2}		1,000	General fund
Signs prohibiting unauthorized access ¹		600	General fund
Bicycle rack ¹		100	General fund
Picnic tables ¹		1,000	General fund
Restroom cleaning and supplies		2,000	General fund
Wages and Benefits ^{1,2}			
Cleaning exotic vegetation		1,500/yr	General fund

¹ Phase 1

² Phase 2

Funding for development, maintenance, and operation of the Project Site will include an estimated \$340,000 for one-time capital improvements and \$7,000 annually for recurring expenses. Capital improvements are being funded through a combination of the City's General Fund, donations, and grants. Recurring expenses are being funded predominately through the General Fund, with user fees partially offsetting the costs of programs conducted on the Project Site. Grants obtained for capital improvements on the Project Site will not conflict with the terms and conditions of the FCT award. The type grants to be sought include the: Florida Coastal Management Program, Florida Recreation Development Assistance Program, Urban and Community Forestry Program, Land and Water Conservation Fund, and Florida Forever.

6) Priority Schedule:

<u>Activity</u>	<u>Start</u>	<u>End</u>
Install Site signs (accomplished)	Nov 99	Oct 00
Begin planting native species to increase diversity (Accomplished)	Nov 99	-
Install signs prohibiting foot traffic (Accomplished)	Nov 99	Sep 00
Develop burn/biomass management plan (Accomplished Phase 1	Nov 99	Sep 01
Plant native species to block foot traffic (Accomplished)	Nov 99	Oct 01
Clear exotic vegetation (Accomplished)	Nov 99	Jan 02
Renovate bicycle rack at Hightower Beach Park (accomplished)	Jan 01	Aug 01
Initiate controlled burn program (accomplished)	Jan 02	-
Expand Hightower parking* (engineering plans completed)	Jul 02	Sep 05
Construct boardwalk* (submitted 2004 FRDAP application)	Oct 03	Sep 05
Construct restroom facilities	Oct 05	Dec 05

* Implementation of these projects will depend on availability of resources. The City is pursuing donations and grants as means to speed their completion.

degree of success in implementing the Management Plan. The Priority Schedule will form the basic criterion for evaluating the degree of success in implementing the Management Plan. In the event that the City determines that it is necessary to update the Management Plan, they will notify the Florida Communities Trust in writing of the proposed changes. Changes will be implemented only with the prior written approval of the Florida Communities Trust.

8) Supporting Documents:

Supporting documents for this Management Plan include:

- Project Site Location Map (**Exhibit 1**)
- Master Site Plan (**Exhibit 2**)
- Special Management Conditions of the Conceptual Approval Agreement (Section VIII) (**Exhibit 3**)
- Biological Survey/Ecological Assessments (21 April 1998) (**Exhibit 4**)
- Southeastern Beach Mouse Trapping Report (6 December 2000) (**Exhibit 5**)
- Florida Natural Inventory listed plant and animal reporting forms (**Exhibit 6**)
- Letter from the Division of Historical Resources (16 July 1999) (**Exhibit 7**)
- Map of Brevard County's Coastal Corridor Multi-Use Trail (**Exhibit 8**)
- Grant Award Agreements and recorded deeds (**Exhibit 9**)

the 27 miles between Federal lands on Cape Canaveral and the Archie Carr National Wildlife Refuge.

Specific reasons for acquiring the Project Site include the following:

- [1] It places into public ownership for preservation an expanse of 2,300 feet of dark, undisturbed beach especially important for green sea-turtle nesting.
- [2] It creates the only public ownership of reasonably-intact Coastal Strand habitat between Cape Canaveral Air Station (18 miles to the north) and Spessard Holland Park in Melbourne Beach (9 miles to the south).
- [3] It adds to the 1.55 acres of State-owned and 1.60 acres of County-owned land already being preserved for conservation within the project boundaries.
- [4] It prevents the last expansive oceanfront vista from being lost to burgeoning highrise construction occurring along the eight miles of coastline between the Pineda and Melbourne Causeways.
- [5] It helps stem the rise in population density for the City of Satellite Beach, which currently has a higher population density than 85% of Florida's 404 municipalities. It reduces the City's anticipated population increase by 28%, and thereby reduces its projected final built-out population by 2.6%.
- [6] The site has exceptional environmental value:
 - In annual surveys since 1989, University of Central Florida biologist Llewellyn Ehrhart, Ph.D., has documented that Phase 1 of Project Number 98-044-P8A is a sea-turtle nesting area for the Federal- and State-endangered Atlantic green turtle (*Chelonia mydas mydas*), with the highest nest density north of the Archie Carr National Wildlife Refuge, and the Federal- and State-threatened Atlantic loggerhead (*Caretta caretta*).
 - Ecologist Linda A. Olson, M.S., has documented that it supports three State-listed plant species, two endangered and one threatened, found on 20+ acres of Beach Dune, Coastal Grassland, and Coastal Strand designated by the State as "imperiled".
- [7] It permits expansion of two urban core parks adjacent to the ocean.
- [8] It provides an outdoor classroom/laboratory for local schools and other groups, to include college-level research on coastal dynamics and related topics.

The project site will be used for **wildlife and habitat preservation, open space and beach access** for the public, and **environmental and history education**.

Activities Intended on Site include City-sponsored **environmental education**

americana), and common gallinule (*Gallinula chloropus*). Resident bird species in non-wetland areas of PAFB include mockingbird (*Mimus polyglottos*), starling, boat-tailed grackle (*Quiscalus major*), and Least terns. Overall, the estuarine and shoreline habitats of the Banana River contain the Base's highest bird diversity.

3.2.2 Threatened and Endangered Species

Federal and state endangered, threatened, or species of concern, which have the potential to be found on and around PAFB, are listed in Table 3-1. These species are concentrated in the golf course, Banana River, and Atlantic Ocean. No rare or endangered plant species occur at PAFB. Resident bird species of concern, which include the brown pelican, the little blue heron, and the osprey, may be located in the wetland areas of PAFB.

A number of species use the base for specific reasons such as foraging or nesting. These include three endangered (leatherback, Atlantic ridley, Atlantic green) and one threatened (Atlantic loggerhead) species of sea turtles which nest on the beaches. Due to the proximity of South MFH to the beach used by the sea turtles for nesting, the potential exists for impacts from exterior lighting to disturb or disorient the nesting/hatching sea turtles. Therefore, a Light Management Plan, approved by the U.S. Fish and Wildlife Service, may be required. The Least tern, listed as threatened by the State of Florida, and the endangered wood stork (ibis) also forage on the base. Species which are transient, include the roseate spoonbill (*Ajaia ajaia*), the American oystercatcher (*Haematopus palliatus*), the piping plover (*Charadrius melodus*), the Artic peregrine falcon (*Falco peregrinus tundrius*), and the burrowing owl (*Athene cunicularia*).

There is some potential habitat for threatened and endangered state and Federally listed species in the South MFH area. Potential wetland areas have developed along the banks of ponds and ditches, where vegetation including water pennywort, duckweed (*Lemna* spp.), cattail (*Typha* spp.), needlerush (*Juncus* spp.), and sedges (*Cyperus* spp.) have become established. Ditches that lie adjacent to most of the roadways as well as the retention ponds (Photo 3) have the potential to support waterbirds. Flat gravel roofs, such as the one on the Harbor City Volunteer Ambulance Station, provide potential nesting areas for the Least Tern, a Florida-listed threatened species. None of the housing units have flat roofs. Disturbance of the Least terns during the nesting period, 1 May through 30 September, is prohibited.

Alternative 2: The Air Force would retain ownership of the property and associated housing. The Air Force would renovate the units to eliminate deficiencies and bring the structures up to current Florida building code. A fifteen year phased program is envisioned at an approximate cost of \$130 million.

Alternative 3: No-Action. Family housing management and condition at PAFB would remain unchanged.

Published information was reviewed to determine the nature of related issues and concerns. The analyses contained in Chapter 4 of this EA demonstrated that there are no significant impacts expected as a result of the Proposed Action. The following resources are shown to have no impacts: cultural resources and land use. Impacts to the remaining resources: *air quality, biological resources, geology and soils, hazardous materials and waste, health and safety, infrastructure and transportation, noise, socioeconomics, visual and aesthetics, and water resources* are considered to be not significant. These impacts and procedures that should be used to ameliorate them include:

- *Air Quality* – fugitive dust (particulate matter (PM₁₀) and construction equipment emissions. It is expected that fugitive dust from ground-disturbing activities could be reduced by 50 percent by application of Best Available Control Technologies.
- *Biological Resources* – temporary vegetative community impacts. Disturbed shrubs and sod would be replaced with native vegetation. Trees would be saved if they do not interfere with planned construction. Established policies for exterior lighting and building construction would be followed to limit the potential for impact to the sea turtle, least tern, and black skimmer.
- *Geology and Soils* – temporary local soil impacts from construction activities. Implementation of best management practices during construction would ameliorate potential negative impacts on the geology and soils (e.g., sheet flow and gully erosion).
- *Hazardous Materials and Waste* - demolition/renovation of existing housing units on PAFB would be anticipated to generate asbestos-containing material and lead based paint wastes. Any hazardous waste would be identified, removed and disposed in accordance with current regulations. No hazardous waste would be disposed of on-site.
- *Health and Safety* - health and safety impacts could occur due to construction activities at the sites. Implementation of Site Specific Health and Safety Plans and compliance with OSHA safety regulations would minimize potential impacts.
- *Infrastructure and Transportation* – minor, positive impacts with some short-term interruptions. Slight increased requirements for drinking water,

Based upon consultation with a 45th SW Environmental Support Contractor fish and wildlife biologist, least tern or black skimmer nesting has not been documented in the South Housing area (Chambers, 2001).

The proposed project site in South Housing is included in the area involved in the Biological Opinion (BO) issued to the 45th Space Wing by the U.S. Fish and Wildlife Service on 2 May 2000. The BO (though not binding on the private developer) addresses exterior lighting effects on threatened and endangered sea turtles utilizing the adjacent Atlantic coastal beaches. To comply with the intent of this BO, the Air Force has instructed, through the *Request for Proposal Housing Privatization Project, Patrick Air Force Base*, that the developer provide low-pressure sodium street lighting to protect indigenous sea-turtle populations. The developer must additionally comply with the requirements contained in Section 46-94 (New Development) of Brevard Code of Ordinances, Part II, Chapter 46, Article III (Marine Turtle Protection).

4.2.2 No-Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. There would be no impacts to biological resources since no change in activities would occur.

4.2.3 Mitigative Measures

No mitigative measures were determined necessary, however the following paragraphs list some recommendations or procedures, if followed, would reduce the likelihood of impacts.

The inclusion of existing policies for exterior lighting and building construction in construction contracts would limit potential for impact to the sea turtle, least tern, and black skimmer for the North Housing area construction and are recommendations as avoidance measures to be implemented in the South Housing area after the property is transferred to commercial entities.

If included in contractual clauses, the proposed facilities and construction in the South Housing area would be designed and constructed to conform to the exterior lighting standards and requirements as outlined in 45SW Instruction 32-7001, "Exterior Lighting Management," dated 26 July 2000. PAFB has adopted these design standards, in consultation with the U.S. Fish and Wildlife Service, to minimize potential impacts to nesting sea turtles. The developer must also comply with the Brevard County Marine Turtle Protection ordinances.

With the inclusion of these design standards and the use of netting or restricting roof construction activities during the April - August time frame, implementing the Proposed Action is not anticipated to result in adverse impacts to protected species. Additionally, salt resistant native vegetation should be used for landscaping.



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Specific reasons for acquiring the Project Site include the following:

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Alternative 2: The Air Force would retain ownership of the property and associated housing. The Air Force would renovate the units to eliminate deficiencies and bring the structures up to current Florida building code. A fifteen year phased program is envisioned at an approximate cost of \$130 million.

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- *Hazardous Materials and Waste* - demolition/renovation of existing housing units on PAFB would be anticipated to generate asbestos-containing material and lead based paint wastes. Any hazardous waste would be identified, removed and disposed in accordance with current regulations. No hazardous waste would be disposed of on-site.
- *Health and Safety* - health and safety impacts could occur due to construction activities at the sites. Implementation of Site Specific Health and Safety Plans and compliance with OSHA safety regulations would minimize potential impacts.
- *Infrastructure and Transportation* – minor, positive impacts with some short-term interruptions. Slight increased requirements for drinking water,

Based upon consultation with a 45th SW Environmental Support Contractor fish and wildlife biologist, least tern or black skimmer nesting has not been documented in the South Housing area (Chambers, 2001).

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Federal and state endangered, threatened, or species of concern, which have the potential to be found on and around PAFB, are listed in Table 3-1. These species are concentrated in the golf course, Banana River, and Atlantic Ocean. No rare or endangered plant species occur at PAFB. Resident bird species of concern, which include the brown pelican, the little blue heron, and the osprey, may be located in the wetland areas of PAFB.

A number of species use the base for specific reasons such as foraging or nesting. These include three endangered (leatherback, Atlantic ridley, Atlantic green) and one threatened (Atlantic loggerhead) species of sea turtles which nest on the beaches. Due to the proximity of South MFH to the beach used by the sea turtles for nesting, the potential exists for impacts from exterior lighting to disturb or disorient the nesting/hatching sea turtles. Therefore, a Light Management Plan, approved by the U.S. Fish and Wildlife Service, may be required. The Least tern, listed as threatened by the State of Florida, and the endangered wood stork (ibis) also forage on the base. Species which are transient, include the roseate spoonbill (*Ajaia ajaia*), the American oystercatcher (*Haematopus palliatus*), the piping plover (*Charadrius melodus*), the Artic peregrine falcon (*Falco peregrinus tundrius*), and the burrowing owl (*Athene cunicularia*).

There is some potential habitat for threatened and endangered state and Federally listed species in the South MFH area. Potential wetland areas have developed along the banks of ponds and ditches, where vegetation including water pennywort, duckweed (*Lemna* spp.), cattail (*Typha* spp.), needlerush (*Juncus* spp.), and sedges (*Cyperus* spp.) have become established. Ditches that lie adjacent to most of the roadways as well as the retention ponds (Photo 3) have the potential to support waterbirds. Flat gravel roofs, such as the one on the Harbor City Volunteer Ambulance Station, provide potential nesting areas for the Least Tern, a Florida-listed threatened species. None of the housing units have flat roofs. Disturbance of the Least terns during the nesting period, 1 May through 30 September, is prohibited.

Alternative 2: The Air Force would retain ownership of the property and associated housing. The Air Force would renovate the units to eliminate deficiencies and bring the structures up to current Florida building code. A fifteen year phased program is envisioned at an approximate cost of \$130 million.

Alternative 3: No-Action. Family housing management and condition at PAFB would remain unchanged.

Published information was reviewed to determine the nature of related issues and concerns. The analyses contained in Chapter 4 of this EA demonstrated that there are no significant impacts expected as a result of the Proposed Action. The following resources are shown to have no impacts: cultural resources and land use. Impacts to the remaining resources: *air quality, biological resources, geology and soils, hazardous materials and waste, health and safety, infrastructure and transportation, noise, socioeconomics, visual and aesthetics, and water resources* are considered to be not significant. These impacts and procedures that should be used to ameliorate them include:

- *Air Quality* – fugitive dust (particulate matter (PM₁₀) and construction equipment emissions. It is expected that fugitive dust from ground-disturbing activities could be reduced by 50 percent by application of Best Available Control Technologies.
- *Biological Resources* – temporary vegetative community impacts. Disturbed shrubs and sod would be replaced with native vegetation. Trees would be saved if they do not interfere with planned construction. Established policies for exterior lighting and building construction would be followed to limit the potential for impact to the sea turtle, least tern, and black skimmer.
- *Geology and Soils* – temporary local soil impacts from construction activities. Implementation of best management practices during construction would ameliorate potential negative impacts on the geology and soils (e.g., sheet flow and gully erosion).
- *Hazardous Materials and Waste* - demolition/renovation of existing housing units on PAFB would be anticipated to generate asbestos-containing material and lead based paint wastes. Any hazardous waste would be identified, removed and disposed in accordance with current regulations. No hazardous waste would be disposed of on-site.
- *Health and Safety* - health and safety impacts could occur due to construction activities at the sites. Implementation of Site Specific Health and Safety Plans and compliance with OSHA safety regulations would minimize potential impacts.
- *Infrastructure and Transportation* – minor, positive impacts with some short-term interruptions. Slight increased requirements for drinking water,

Based upon consultation with a 45th SW Environmental Support Contractor fish and wildlife biologist, least tern or black skimmer nesting has not been documented in the South Housing area (Chambers, 2001).

The proposed project site in South Housing is included in the area involved in the Biological Opinion (BO) issued to the 45th Space Wing by the U.S. Fish and Wildlife Service on 2 May 2000. The BO (though not binding on the private developer) addresses exterior lighting effects on threatened and endangered sea turtles utilizing the adjacent Atlantic coastal beaches. To comply with the intent of this BO, the Air Force has instructed, through the *Request for Proposal Housing Privatization Project, Patrick Air Force Base*, that the developer provide low-pressure sodium street lighting to protect indigenous sea-turtle populations. The developer must additionally comply with the requirements contained in Section 46-94 (New Development) of Brevard Code of Ordinances, Part II, Chapter 46, Article III (Marine Turtle Protection).

4.2.2 No-Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. There would be no impacts to biological resources since no change in activities would occur.

4.2.3 Mitigative Measures

No mitigative measures were determined necessary, however the following paragraphs list some recommendations or procedures, if followed, would reduce the likelihood of impacts.

The inclusion of existing policies for exterior lighting and building construction in construction contracts would limit potential for impact to the sea turtle, least tern, and black skimmer for the North Housing area construction and are recommendations as avoidance measures to be implemented in the South Housing area after the property is transferred to commercial entities.

If included in contractual clauses, the proposed facilities and construction in the South Housing area would be designed and constructed to conform to the exterior lighting standards and requirements as outlined in 45SW Instruction 32-7001, "Exterior Lighting Management," dated 26 July 2000. PAFB has adopted these design standards, in consultation with the U.S. Fish and Wildlife Service, to minimize potential impacts to nesting sea turtles. The developer must also comply with the Brevard County Marine Turtle Protection ordinances.

With the inclusion of these design standards and the use of netting or restricting roof construction activities during the April - August time frame, implementing the Proposed Action is not anticipated to result in adverse impacts to protected species. Additionally, salt resistant native vegetation should be used for landscaping.

