



THREE SISTERS SPRINGS PROJECT MANAGEMENT PLAN

Florida Communities Trust (FCT) Project #08-088-FF8

A project of:
The City of Crystal River
The U.S. Fish and Wildlife Service, and
The Southwest Florida Water Management District

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Executive Summary

The effort to acquire the 57+/- acre Three Sisters Springs property for public ownership has been a multi-agency partnership focused on conserving three second-order magnitude springs and lands that surround them. The project is aimed at protecting these significant natural resource values from environmental degradation that would be caused by the development of proposed residential single-family and multi-family homes, as well as the potential for a bottled water facility. The Three Sisters Springs site is located within the acquisition boundary of the Crystal River National Wildlife Refuge (NWR) and represents what is arguably the most significant site for West Indian Manatee protection in all of Florida.

The Three Sisters Springs property is located immediately south of downtown Crystal River (FL), and originally was a part of a natural wetland ecosystem adjacent to Kings Bay. In the early 1970's the trees in the forested wetland were removed and an eight-acre lake was dredged in the center of the site. The dredged material was used to fill the immediate wetlands area with the intent of creating a site suitable for residential development.

In 2008, a 300+ unit residential development project was planned for the site. However, prior to completion of the site plan and permitting requirements, the property ownership group acknowledged the environmental importance of the site, and agreed to work with a coalition of conservation groups to see if a feasible plan could be developed to acquire the property for conservation purposes, while also continuing to move forward with development plans in the event the conservation acquisition effort failed.

As a cornerstone in this conservation endeavor, the City of Crystal River agreed to serve as the lead agency in what ultimately was a successful application for a Florida Communities Trust (FCT) grant. The acquisition effort was further bolstered by the Southwest Florida Water Management District (SWFWMD) stepping forward with Florida Forever funding to be used as the match for the FCT grant funding, which resulted in SWFWMD holding a 30% ownership interest in the site. SWFWMD further committed to creating a wetlands area on site to provide stormwater treatment for runoff from adjacent commercial and residential areas.

The Friends of the Crystal River National Wildlife Refuge Complex (Friends) and the National Wildlife Refuge Association took on the leading role in raising \$2.7 million in private funding. The U.S. Congress appropriated \$3.0 million to the US Fish and Wildlife Service (FWS) for land acquisition, with the City of Crystal River, Citrus County, the Citrus County Tourist Development Council also providing financial support. The \$2.7 million in private financial support came from The Felburn Foundation and several other environmental groups, as well as a multitude of private citizens and various civic clubs. The FWS funding and the Felburn Foundation funding ultimately went to acquire the Consumptive Use Permit (CUP) and related water value from the site owners.

Since the inclusion of Crystal River/Kings Bay as a priority water body in its Surface Water Improvement and Management (SWIM) program in 1988, SWFWMD has pursued strategies and programs to improve water quality conditions in this unique tidally-influenced first-magnitude spring system. In keeping with those efforts, SWFWMD has committed to pursuing stormwater treatment via the construction of the previously-mentioned treatment wetlands on the Three Sisters Springs site. To further the environmental impact of this site, SWFWMD has also committed to including elements in the wetland design that will attract birds and other wildlife.

The FWS has committed to managing the overall site in cooperation with the City and SWFWMD. The FWS will manage the property as part of the Crystal River NWR under a management agreement with the City and SWFWMD. SWFWMD will be involved with the site through the completion of construction of the treatment wetland and will then turn the wetland over to FWS for management and maintenance.

Given the prime opportunities for land-based manatee observation that the Three Sisters Springs site offers, FWS has installed a boardwalk adjacent to the shoreline of the Springs. The environmental experience will be further enhanced through the development of an environmental center that will focus on manatees and the complex Kings Bay ecosystem. The site will also offer public amenities such as the creation of a nature trail, a nature discovery area, a picnic pavilion, a youth fishing pier on the lake, manatee viewing stations along the western edge of the site adjacent to Magnolia Springs (Gator Hole), and viewing opportunities related to the additional bird habitat that will be created as part of the wetland treatment area that will be constructed on the site.

The conservation of the Three Sisters Springs property fulfills the City's long-term goal of creating a waterfront open space with trails and connection to Kings Bay. Additionally, the City is working to further bolster the City's eco-tourism trade and the City will be providing safe pedestrian/biking access from its downtown area to the Three Sisters Springs site. That access will connect the Three Sisters Springs site to the City's other waterfront parks and the various water-based activities that define the City of Crystal River.

With time, the Three Sisters Springs site is expected to become a critical resource for the observation and protection of the manatee, while also playing a key role in the restoration and maintenance of water quality within the Kings Bay/Crystal River springs system. The environmental education center, manatee viewing opportunities, nature trails, and restored wildlife habitat will further enhance an environmental experience that will be in total keeping with the area's reputation as "Florida's Nature Coast".

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Introduction

The Three Sisters Springs project involves the public acquisition of a 57-acre site that contains three second-order springs that play a critical role in both manatee protection and efforts to restore water quality in the Kings Bay/Crystal River spring system. The site is located in the City of Crystal River, on the west coast of Florida.

The site was originally a part of wetlands ecosystem located adjacent to Kings Bay. In the 1970s, the property was cleared and filled with the intent of creating a building site suitable for residential development. A development plan involving the construction of more than 300 residential units had been approved at the time a multi-agency cooperative effort was initiated to bring the site under public ownership.

In addition to the three second-order springs found on the site itself, there is a second order spring (Magnolia Springs) located along the western perimeter of the property and another second-order spring (Idiot's Delight) located along the southeast portion of the property. The man-made waterway fed by Magnolia Springs is a seasonal sanctuary for manatees, with a second sanctuary located where the run from the Three Sisters Springs feeds into a waterway that flows into Kings Bay. During cold weather, manatees heavily utilize the two warm-water sanctuaries and the Three Sisters Springs themselves.

The successful effort to acquire the site resulted in the property being owned by both the City and the SWFWMD, with FWS acquiring the Consumptive Use Permit and managing the property through an agreement. If the FWS is unable to provide management of the site at any point in the future, the City will either seek another governmental entity to manage the site, manage the site itself, or allow ownership of the site to revert back to FCT. The FCT grant funding for land acquisition was supplemented by funding that came from the City of Crystal River, Citrus County, the Citrus County Tourist Development Council, a number of other conservation non-profits, and a multitude of private citizens and local civic clubs. In addition, FWS and the Felburn Foundation provided funding that went to acquire the Consumptive Use Permit (CUP) and related water business from the owners of the site.

In accordance with the terms of the FCT grant, the City of Crystal River has, in conjunction with FWS and SWFWMD, developed this Management Plan to ensure that the project site will be developed in accordance with the Grant Award Agreement and in a manner consistent with the grant application. As explained further herein, this Management Plan describes the ultimate development of a nature discovery area, a nature trail, at least one picnic pavilion, a fishing dock, and boardwalk adjacent to Three Sisters Springs and two (2) manatee viewing stations adjacent to Magnolia Springs that will allow the public to observe manatees in their natural setting; construction of an environmental education center that will focus on manatee protection

and watershed restoration; and the creation of a treatment wetland on the site that will treat storm-water from adjacent commercial and residential areas prior to such runoff being released into the Kings Bay/Crystal River springs system, thus improving the health of Kings Bay. The project site will be managed for the conservation, protection and enhancement of natural resources, and for outdoor recreation compatible with those goals.

Purpose

The Three Sisters Springs project was pursued by a broad array of public and private partners for the purposes of:

- Creating superb outdoor-oriented recreational and educational opportunities such as wildlife viewing, wildlife photography, and environmental education, for both the citizens and visitors to Crystal River, compatible with the all purposes of the project;
- Conserving, protecting and enhancing natural resources;
- Protecting and recovering endangered West Indian Manatees and other fish and wildlife;
- Restoring native habitat and biodiversity;
- Protecting water quality and quantity in Kings Bay, Florida; and
- Protecting the scenic and open space qualities of the Three Sisters Springs property.

Project Consistency with City's Comprehensive Plan

The Three Sisters Springs project supports the City's Comprehensive Plan in a number of ways, as indicated below:

Conservation Element

The Conservation Element states that “the City shall protect and conserve the natural functions of rivers, bays, wetlands, estuarine, and marine habitats, in order to assure the protection of fisheries, native flora and fauna and associated habitat, and especially species designated as endangered, threatened or species of special concern under the Endangered Species Act.” [Objective 1.3] There is also language that states that “No net loss of essential upland habitat for endangered or threatened species or species of special concern will be permitted.” [Objective 1.6] In addition, there is language that states that “the present quality of surface and groundwater entering Kings Bay and Crystal River will be maintained.” [Objective 1.11] The Three Sisters Springs project clearly supports these objectives by protecting manatee habitat and the present quality of water entering Kings Bay, both through protection of the springs themselves and by providing for wetlands treatment of stormwater runoff from adjacent commercial and residential areas.

Recreation Element

The Recreation Element states that “public access to natural resource-based parks will be provided to assist in meeting Crystal River’s recreation demands without diminishing the overall quality of those resources.” [Goal #1] Specific objectives that will be supported by the Three Sisters Springs project include increasing the amount of public fishing pier access [Objective 1.1]; establishing one mile of nature trails within Crystal River [Objective 1.3]; establishing a program for the identification, designation, management and protection of environmentally sensitive lands [Objective 1.4]; and providing for a sufficient quantity and distribution of open space to meet the City’s needs [Objective 3.1]. By providing open space, protection of the natural resources, and a nature trail, the Three Sisters Springs project is both consistent with and strongly supportive of the goals set forth in the Recreation Element of the City’s Comprehensive Plan.

Coastal Management Element

The Coastal Management Element establishes that the City shall “ensure the protection and enhancement of significant vegetative communities which support wildlife through preserving the diversity and viability of Coastal habitat areas.” [Objective 1.1] it further establishes that the City will “increase public access to the Coastal Area’s natural resources through acquisition of new property, which will be consistent with the public’s needs and the natural resource capacity of the selected area.” [Objective 5.1] The Three Sisters Springs project will preserve the viability of the on-site habitat areas and increase public access to a natural coastal setting, with appropriate management oversight.

The City of Crystal River has amended the land use of the property to open space to protect the property in perpetuity and allow for compatible recreation and conserve the property’s unique natural resource features. The zoning will be changed in 2012 in conjunction with a city-wide update of zoning changes.

The project area is surrounded by intensive housing developments on three sides and commercial development on the fourth. Residents in the immediate area have voiced concerns over privacy and disturbance from the expected large number of visitors to the project area. To address that concern, the project development will minimize conflicts with the neighborhood by orienting manatee viewing stations away from houses to the extent reasonably possible and promoting native vegetation along the property boundaries to screen the public from neighbors and protect watercourses.

Natural and Cultural Resources

Natural Communities

The Three Sisters Springs property is approximately 57 acres of filled in forested wetlands with a man-made lake in the center of the property. Grasses and recently-

planted pine trees currently dominate the site, with beautiful natural springs (i.e. Three Sisters Springs) located in the southern center of the property. The Three Sisters Springs are surrounded by an edge of cypress and red maple with a variety of shrubs. The fields are made up of non-native cool season grasses, native herbaceous plants and recently-planted pine trees. The elevation and vegetation of the site have been altered considerably since the 1940s. Based on an examination of historical aerial photos as well as remnant vegetation along the perimeter of the site, it is likely that the majority of the property was originally either mesic or hydric hammock. These forests were removed over time and the elevation of most of the site was increased via fill material generated during the excavation of the existing lake. The man-made lake is approximately 8 acres in size and 40-feet deep; sides of the pit are steep and there is virtually no littoral zone.

A Biological Survey and Wetland Assessment Report was conducted for the Three Sisters Springs Site at the request of Three Sisters Springs Holding, LLC. A copy of their report dated December 14, 2007 can be found in Appendix III. Additional species observed that were not found during this survey include Florida sandhill cranes (*Grus canadensis pratensis*) and Southeastern American kestrels (*Falco sparverius paulus*), two state threatened species. A gray fox and raccoons have been observed on site and the likelihood of armadillos and otters using the area is high.

Lake Lynda is an artificial lake created by the filling of the property in the 1970s. Currently, Lake Lynda provides little habitat for fish, birds, and amphibians and poses a hazard to the public because it is deep and has sharp and steep sides with no littoral zone. To the extent that funding is available and sufficient fill is available from the creation of the wetland treatment area, the City will work with SWFWMD to create shallow, littoral habitat along the shoreline of the Lake Lynda borrow pit to enhance the aquatic habitat.

Manatee Management

The project area is one of the most important properties in Florida for West Indian Manatees. To illustrate, more than 250 manatees, representing approximately 5% of the entire Florida manatee population, were observed using this site during the abnormally cold winter of 2009/2010. The manatees use the three springs on the property, which deliver millions of gallons of 72-degree water each day. As previously mentioned, the protection of manatees was one of the driving goals of the project. Three Sisters Springs is particularly important to mothers with newborn calves.

The Three Sisters Springs will remain open to the public to be used for kayaking/canoeing, swimming, snorkeling and diving, subject to any restrictions that may be implemented through the provisions of the Management Agreement in place for the Three Sisters Springs site. In keeping with the intent of maintaining and sustaining

quality visitor experiences while at the same time providing adequate protected areas for manatees, FWS will consider using existing federal rule making/processes to manage the balance of visitors and manatee use. For instance, consideration will be given to temporarily close portions of the springs during the coldest winter months to give mothers with calves opportunity to rest without disturbance. This will also give the general public opportunities to view manatees without swimmers. These partial and temporary closures would allow for a portion of the springs to remain open for traditional water use. Another consideration would be closing the entire springs on the very coldest days of the year to prevent overcrowding by manatees in the existing manatee sanctuaries. These full closures will only happen rarely and last for short periods of time. Several large boulders that had previously been placed in the Three Sisters outflow to prevent boats from accessing the Three Sisters Springs have been removed. These boulders impeded the movement of manatees in and out of Three Sisters during low tide thus making the springs unavailable to manatees for 20% to 30% of the time. The removal of these boulders make the Three Sisters available to manatees throughout the whole day and other means will be used to keep boats from entering the springs.

Magnolia Springs will be closed for public use during the winter months as a manatee sanctuary, as it has been. The project acquisition will not change management of Magnolia Springs, but will provide improved wildlife viewing opportunities.

The shallow water basking area across from Idiot's Delight Spring and at the mouth of the Three Sisters outflow will remain a manatee sanctuary.

The manatees in all the springs of the project area will be regularly monitored by the FWS. This monitoring includes periodic surveys and daily checks for injured animals. The management will also include refuge environmental interpretation and law enforcement. The Refuge has two refuge officers that will regularly patrol the site for human/manatee conflicts to help ensure the recovery of this endangered species.

Restoration

The 50-acre upland area will be restored by planting upland forests with live oaks, red cedar, cabbage palms, wax myrtle, and other species native to the area. The slash pine trees planted by the previous owner will be removed since they are not representative of the historic native plant community on the site. Some areas will remain open to attract a variety of wildlife species. Nest boxes may be provided for bluebirds and bats. As resources are available, a garden with native species may be planted to attract butterflies. Restoration of mesic and/or hydric hammock on the site may require removal of some fill material. Replanting of mesic hammock with native species will be limited primarily to areas surrounding the springs and along the canal that flanks the southern

and western borders of the property. A wetland area will be created by SWFWMD south of the lake, which will be planted with native emergents to make it attractive to wading birds.

In addition to the work already performed to remove or re-position boulders at the mouth of the spring run to allow manatees to access the springs on low winter tides, FWS will work with spring restoration experts to contain erosion around the spring edges and remove organic material from the spring vents as necessary to maintain sufficient flow. FWS will coordinate the development of a shoreline stabilization plan with FCT and obtain FCT's approval of the plan prior to the implementation of the stabilization plan.

To minimize disturbance to manatees, an observation boardwalk has been installed to restrict foot access to the actual shoreline while still affording viewing opportunities.

Water Treatment Wetlands

A portion of the property will be devoted to stormwater treatment wetlands to be created on the east side of the property. The runoff from the commercial and residential areas east of the property will flow through the treatment wetland before being discharged into the channel towards Kings Bay. The treatment wetland will improve the quality of stormwater entering Kings Bay. The wetlands will be created, designed and constructed by the SWFWMD, with design input from the FWS to also allow the wetlands to provide wildlife habitat. The wetlands will be designed in such a way as to maximize benefits to wetland wildlife while meeting treatment goals. The wetland treatment area will be integrated into the natural landscape to facilitate use of the site for education and recreation purposes, with shallow slopes. The wetland treatment facilities will be designed in such a manner that the wetland treatment areas will not need to be fenced. Previously, stormwater from these areas was discharged directly into a canal that forms the eastern border of the site.

Exotic Plant Program

The uplands contain some exotic plants including Brazilian pepper (*Schinus terebinthifolius*), cogon grass (*Imperata cylindrical*), and air-potato (*Dioscorea bulbifera*) which are all listed as Category I species on the Florida Exotic Pest Plant Council list. All exotics will be removed from the property. The property will be monitored annually and if any invasive exotic plants are identified actions will be taken to have them removed. The "Exotic Pest Plant Council's List of Florida's Most Invasive Species" will be used to identify invasive exotic plant species; a copy of that list is provided within the appendix.

Feral Animal Program

The property will be monitored for exotic and feral animals. Any exotic or feral animals found on the site will be removed by qualified personnel.

Listed Plant Species

Currently, there are no known listed plant species found on the site.

Listed Animal Species

The West Indian manatee, Florida sandhill crane and wood stork have been identified using the site. The development of the site will be done in such a manner to enhance the habitat used by listed species, with a strong emphasis on protecting the manatee habitat.

Flora/Fauna

A flora/fauna list is provided as a biota summary within the Exhibits portion of this plan.

Archaeological, Cultural, and Historical Resources Protection

There are no known archaeological, cultural, and historical resources on the site. The City will notify the Division of Historical Resources immediately if evidence is found that indicates an archeological or historic resource at the project site, and will also take appropriate measures to protect such resources. The collection of artifacts or the disturbance of archeological or historic sites that may be found or identified on the project site will be prohibited unless prior authorization has been obtained from the Division of Historical Resources within the Department of State. The management of the archeological and historic resources will comply with the provisions of Chapter 267, Florida Statutes specifically Sections 267.061 2(a) and (b).

Structure and Improvements

Acknowledgement and Boundary Signs

There will be a sign at the entrance of the property (not less than 3' X 4' in size). The sign will acknowledge that the property was acquired using funds from the Florida Communities Trust and the SWFWMD. The sign will also acknowledge the managers of the property (FWS) and major financial contributors (the Felburn Foundation, SWFWMD, Jane's Trust, Citrus County, Citrus County Tourist Development Council, the City of Crystal River, and FWS). In addition, the boundary will be posted with approved federal signs designating the property as a National Wildlife Refuge and regulatory signs as needed.

Existing Physical Improvements at the Time of the Acquisition

A small dock on the Three Sisters Springs, two picnic tables with shades, barbeque pit, storage shed, barbed wire fence and an entrance gate all these structures have been removed.

Proposed Physical Improvements

Observation Platform:

An observation boardwalk has been constructed along the perimeter of the Three Sisters Springs that incorporates numerous observation stations and allows numerous open views of the Springs and the Idiot's Delight sanctuary area. In addition, two manatee viewing stations will be installed on the western edge of the property adjacent to Magnolia Springs. These viewing stations will be designed and installed in such a manner as to allow public observation of the manatee seasonal sanctuary area while taking into account the privacy concerns of the adjacent residences.

Nature Trail:

The project will include a land-based nature and hiking trail with minimal disturbance of natural resources. The trail will provide visitors with a view of the treatment wetland and connect the education center, the fishing pier, the nature discovery area, and the picnic pavilion(s).

Bicycle Trail:

The City is designing an extension of its current Crosstown Trail to connect to the property to allow people to visit the property in a carbon-friendly manner. Refuge visitors will not be able to ride their bicycles through the property, but will be able to access the property via bicycle.

Picnic Pavilions

At least one picnic pavilion will be provided within the project site. As resources become available, additional picnic pavilions will be considered.

Fishing Pier

A handicapped-accessible fishing dock will be developed on the man-made lake to provide recreational fishing to the general public. The dock will be placed on the west side of the lake. There will be interpretive panels explaining the species of fish in the lake, and catch-and-release practices will be encouraged. Due to the limited size of the lake and the potential for over-fishing to deplete the fish population, FWS may implement restrictions on fishing upon a finding that the fish population is being reduced to an unacceptable level.

Education Center

The project will include an education center that may be located on property located immediately to the east of the project site or on the project site itself, depending on the availability of future resources. The center will be located away from critical wildlife habitat, wetlands, and water bodies. The center will provide information on the springs and their function as a manatee sanctuary, as well as the role the property plays in protecting the manatees and water quality.

At least 12 environmental or historical education classes or programs will be provided on site per year. The classes/programs will educate visitors about the springs and their function as a manatee refuge, as well as the role of the springs in protecting water quality in the Crystal River Outstanding Florida Waterway.

Final design of the education center will require review and approval from FCT.

Nature Discovery Center

The project site will be enhanced by a nature discovery area that will be oriented to young children. Activities at the discovery center area may include activities such as climbing and crawling area, interactive music activities, interactive water activities, and interactive natural art areas.

Parking Facilities

Size: A parking lot of not less than 40 spaces will be constructed adjacent to the environmental education center if the education center is ultimately located on the site, and an adjacent overflow lot and grass area will be designated for overflow during major events. If the education center is ultimately located off-site and adequate parking is located at that location, on-site parking will be minimized.

Visitor Carrying Capacity: The calculated number of parking spaces is also tied to the maximum number of visitors that the observation boardwalk can accommodate during the highest visitation period (December – March). The boardwalk provides more than two manatee viewing areas.

Turnaround Lapse: Vehicle turnaround times (the amount of time spent by a vehicle occupying a parking space) were also considered in the process of calculating the number of parking spaces. Based on observations from other manatee viewing sites, it's apparent that visitors who view manatees tend to spend prolonged periods (15 minutes average) of time watching manatees.

Parking/Entrance Location: The parking lot entrance will most likely come from the northeast corner of the property and parking will most likely be in the northern portion of the property. The site will be easily accessible from U.S. Highway 19.

Materials: The parking lot and access road will be created using permeable materials that will accommodate drainage requirements. To the degree possible, natural materials will be used to enhance the appearance of the site.

Landscaping

Minor landscaping will be placed around the entrance way and the visitor center. All plants will be native to Central Florida. Landscaping around the education center could include the planting of a pollinator garden. These plants will be drought tolerant and require no watering or pesticides or herbicides. The plants will include berry producing shrubs and native herbaceous plants that are attractive to pollinators. Landscaping may include butterfly gardens and areas to demonstrate natural succession of native plants.

Wetland Buffer

Native forested buffers will be restored along the properties wetlands and water-bodies to protect water quality. The exceptions will be around the observation boardwalk and the treatment wetlands that will be created for improving King's Bay water quality and provide habitat for cranes, wading birds, waterfowl, water birds, and shorebirds. The impoundments will be surrounded by dikes seeded into cool-season grasses.

Stormwater Facilities

A treatment wetland, as previously described, will be created on the property to treat water running off of neighboring commercial and residential properties. The wetland will improve King's Bay water quality, and can also be used to treat run-off from the property's parking site. The wetlands will be designed to look as natural as possible, with shallow slopes. The treatment wetlands will be designed to attract birds and other wildlife and will be used to provide additional wildlife viewing opportunities in the project area.

Hazard Mitigation

Appropriate hazard mitigation will be in place around the parking site and fuel storage locations (if any). All structures and facilities will be designed to mitigate impacts by 100-year floods, hurricanes, and other severe natural events.

Interpretive Signs

Several interpretive signs will be installed to educate visitors about the springs and their role as a manatee refuge, water quality issues of the Crystal River Outstanding Florida Waterway, and the native upland and wetland plantings.

Permits

Development work will likely include the construction of structures such as an education center, observation platform(s), fishing pier, trail(s), parking lot and signage. Restoration activities will include storm-water facilities and exotic plant removal.

A number of potential permits and/or orders and authorizations for development and restoration activities have been identified. These can include:

- A State Programmatic General Permit (SPGP) for minor work located in waters of the United States (including navigable waters)
- A Noticed General Environmental Resources Permit issued by the Southwest Florida Water Management District in conjunction with the Florida Department of Environmental Protection
- A Nationwide Permit 27 for stream and wetland restoration activities issued by the U.S Army Corps of Engineers.
- An authorization to use Sovereign Submerged Lands
- Section 7 from USFWS

Although FWS will not be required to obtain any city permits, they will notify the City whenever they are planning the construction of any building or other improvement that would normally require such a permit.

As part of the FCT grant conditions, and to ensure that other permitting requirements are not missed, the following agencies will be contacted prior to initiating any site development activities:

- Florida Fish and Wildlife Conservation Commission
- Florida Department of Environmental Protection
- Florida Department of Agriculture and Consumer Services, Division of Forestry
- Florida Department of State, Division of Historic Resources
- Southwest Florida Water Management District
- U.S. Army Corps of Engineers

Estimated Cost of On-Site Physical Improvements

Creation of Wetland Treatment Area	\$500,000
Installation of Viewing Station(s)	\$ 30,000
Observation Boardwalk	\$160,000
Creation of Nature Trail	\$ 50,000
Nature Discovery Area	\$ 40,000
Picnic Pavilion	\$ 25,000
Fishing Pier	\$150,000
Education Center	\$350,000
Parking Facilities	\$ 75,000
Restoration of Wetland Buffer	TBD
Interpretive Signs	\$ 10,000

Acquisition of land for Off-Site Visitors Center (conceptual)	\$1,000,000
Construction of off-site Visitors Center (conceptual)	\$2,000,000

Projected Timeline

Creation of Wetland Treatment Area	Design	2011
	Construction	2012
Installation of Observation Boardwalk		2011
Installation of Wildlife Observation Platforms		2013
Creation of Nature Trail		2013
Installation of Viewing Station(s)		2014
Picnic Pavilion		2014
Fishing Pier		2015
Education Center		2015
Discovery Center		2015
Parking Facilities		2012
Restoration Wetland Buffer		2013
Interpretive Signs		2014
Entrance sign with FCT recognition		2012
Exotic plant removal		2012 then annually
Landscaping		2012-2016
Upland restoration		2012-2016
Bike rack		2015
Bike trail access from Crosstown Trail		2015
Amend Future Land Use Designation		2011
Amend Zoning Designation		2012
Plant survey/monitoring		2012 then annually
Wildlife survey/monitoring		2012 then annually
Photo monitoring		2012 then annually
Feral animal removal program		2012 then annually
Educational programs		2012 then annually
Annual Stewardship Report		2010 then annually

Public Uses:

Water Access to the Three Sisters Springs

The public currently accesses the Three Sisters Springs by water, entering the springs while in the water or by kayak/canoe, primarily to view manatees, no motorized crafts, such as motorboats, jet skies, etc., will be allowed the springs or the spring run.

Management activities will include providing compatible, wildlife-oriented recreational opportunities for visitors while optimizing use of the springs for manatees. Compatible uses of the site will likely include existing in-water uses, managed to enhance visitor

experiences and minimize manatee disturbance. FWS may enact partial closure of Three Sisters Springs during the coldest winter months and would consider full closure only for extreme cold winter events.

Management actions concerning the protection of manatees in the springs and adjacent areas will be addressed independent of the acquisition and will be made with input from the public as provided for by federal law.

Land Access to the Springs

At present, the public is prohibited from accessing the springs from land and are prohibited from accessing the shoreline and property from the water. Inasmuch as the water bottoms are included in the acquisition, access to the water bottoms from land and water will be managed. Management actions will include preserving shoreline vegetation, controlling erosion, and maintaining water clarity. Consistent with these actions, access to the water from land and vice versa will continue to be restricted. Manatee rescues and regular maintenance activities will be the only exceptions to these restrictions. Land-based uses will include the use of an observation boardwalk to provide visitors with an opportunity to view manatees from shore; gates in the boardwalk will be provided to allow access to the shoreline by law enforcement and USFWS personnel, but will be locked to prevent public access.

Fishing

Fishing in the springs is not compatible with currently planned visitor activities or with manatee protection, and therefore will not be allowed in the springs. However, there are opportunities for limited fishing in the man-made lake and a fishing dock is planned. In order to minimize disturbance from angling activity and fishing gear litter, these uses will be controlled and monitored. All fishing activities will be restricted to a designated fishing pier and fishing will not be permitted on any other area of the property in order to minimize wildlife disturbance. The fishing pier will be ADA-compliant and would be of sufficient size to accommodate several individuals at one time. The springs and the shoreline of the Refuge will be closed to fishing year-round.

Festivals & Special Events

The project site may be used for festivals and special events that are oriented toward conservation/appreciation of natural resources, wildlife protection, and other environmental themes.

Management Issues

Coordinated Management

The Three Sisters Springs property will be managed by (FWS) and the Southwest Florida Water Management District, with the District's involvement limited to creation of the

wetlands treatment area and related replanting efforts. FWS has broad experience in co-managing property with municipal and state governments. The property will be managed as part of the Crystal River National Wildlife Refuge. The governance of refuges follows the National Wildlife Refuge Administration Act, as amended, the Refuge Recreation Act, and other regulatory statutes.

All parties to this Plan agree that no activity will be conducted or permitted on the property that adversely impacts the volume of flow from the Three Sisters Springs or the quality of the water being discharged therein. It is expressly agreed by all parties that public access to the spring for kayaking/canoeing, swimming, snorkeling, diving and wildlife observation does not adversely impact the integrity of the springs, as long as they are properly managed.

Bicycle/Walking Access

An extension of the City's Crosstown Trail is under design to provide for access to the Three Sisters Springs property. Entry into the property may require payment of an entrance fee. Vehicle and pedestrian entrance fees will be used by the U.S. Fish and Wildlife Service to maintain property facilities, including the land-based nature and hiking trail to be provided within the property.

Maintenance

The U.S. Fish and Wildlife Service will be responsible for the long-term maintenance of all the facilities on the Three Sisters Springs property. The Fish and Wildlife Service will use revenues from entrance fees and Refuge operations budgets to fund the needed maintenance, and will build a maintenance area on the site.

Security

The National Wildlife Refuge Complex staff that manages Crystal River National Wildlife Refuge has two full-time Refuge Officers. These Officers will provide law enforcement and security for the property. Additional Officers can be provided by the Service at special events or particularly busy times.

Entry Fees, Concessions, and Leases

Entry Fees: The Service anticipates establishing a user fee. The fee amount may vary by season (summer vs. winter). Seasonal passes are being considered. The Service will compare other similar sites and their respective entrance fees to determine consistent user fee amounts. A report on the revenues and expenditures associated with the collection of entry fees will be incorporated within the annual report submitted by FWS to the City.

Management Agreement: The FWS will hold a management agreement over the entire property to manage the property. The management agreement will be multi-year in

length and will obligate the FWS to manage the project in such a way as to allow the City to comply with the terms of the FCT grant and allow SWFWMD to manage their lands in accordance with that agency's policies. If the FWS gives up their management agreement for any reason, or fails to adequately perform, the City would be responsible for finding another agency to manage the property, managing the property itself, or being required to allow the ownership of the property to revert back to FCT.

Concessions: The Friends of the Crystal River National Wildlife Refuge may operate a concession in the education center. FWS will manage all concessionaire activities in accordance with Federal regulations.

It is acknowledged that the City must provide 60 days written notice to FTC on the lease of any interest, the operation of any concession, or other contracts of a similar nature, and that execution of any such document requires review and approval by FTC.

Staffing Requirements

There are 10 existing full-time employees available to staff the project from the Crystal River National Wildlife Refuge. These staff members include Refuge Managers, Recreational Specialists, Law Enforcement Officers, Biologists, and Maintenance Workers. Cost estimates for initial management of the site are shown in the table below. These costs will be covered under the existing refuge budget, as funding is available. All staffing and management actions for the project are contingent upon availability of funding through the Federal government budget process.

Cost Estimates for Initial Management

Refuge Manager – 10% FTE	\$ 15,000
Asst. Manager – 10% FTE	\$ 10,000
Wildlife Biologist – 10% FTE	\$ 10,000
2 Law Enforcement Officers – 25% FTE each	\$ 57,000
Recreational Specialist – 20% FTE	\$ 15,000
2 Maintenance workers – 20% FTE	\$ 34,000
Maintenance Fund -	<u>\$ 25,000</u>
TOTAL	\$116,000

As funding becomes available, the refuge will seek to add positions to increase management and education at the site, including two entrance gate workers, a Law Enforcement Officer, a Maintenance Worker, a Supervisory Recreational Specialist and two Interpretive Park Rangers. These additional positions and maintenance cost

estimates are shown in the table below, but are once again dependent on the availability of funding. Once the property has been developed and is open fully to the public, anticipated user fee collections may reach approximately \$375,000 annually. These fees will be placed in a separate account and will be used for the upkeep and maintenance of the project site.

Cost Estimates for Increased Management with Property Development

2 Fee Booth Collectors – 100% FTE each	\$ 90,000
Law Enforcement Officer – 100% FTE	\$100,000
2 Interpretive Park Rangers - 100% FTE	\$170,000
Supervisory Recreational Specialist – 100% FTE	\$100,000
Maintenance Worker – 100% FTE	\$ 85,000
Maintenance Fund	<u>\$200,000</u>
TOTAL:	\$745,000

Once the property has been developed and is open fully to the public, anticipated user fee collections may reach \$375,000 annually. These fees will be placed in a separate account and will be used for the upkeep and maintenance of the project site. Additional funding necessary for the development and management of the property will be provided through the normal Department of Interior funding cycle as additional funds become available.

Monitoring and Reporting

FWS will be responsible for monitoring the project area. The FWS will monitor the following:

- Number of visitors
- Number of cars, kayaks, and bicycles used to access the project area
- Number of manatee/ human disturbance issues
- Weather and need for temporary manatee closures
- Manatee use of the project area
- Wading bird use of the project
- Removal of exotic plants
- Removal of exotic and feral animals
- Infrastructure needs

These findings will be compiled in a report and given to the City of Crystal River and FCT on an annual basis, with such report to be filed by no later than January 30th of each year. The City, SWFWMD, and FWS will meet each quarter to discuss issues relating to the management of the project area.

Management Plan Revisions

It is acknowledged that written approval must be requested from FCT before undertaking any site alterations or physical improvements that are not addressed in the approved management plan.

Exhibits

- A. Location Map
- B. Master Site Plan
- C. Public Lands Map
- D. Natural Communities Map
- E. Biota Known or Likely to Occur at Three Sisters Springs (Crystal River, Florida)
- F. Copy of the Exotic Pest Council of Florida's Most Invasive Species List
- G. City Bike Trail Network Map
- H. Copy of Grant Award Agreement or Grant Contract
- I. Interagency Agreement

Appendices

- I. Executive Summary Site Suitability Study Three Sisters Springs Property, Crystal River, FL. 2004. HSA Engineers and Scientists.
- II. Biological Survey and Wetland Assessment Report for the Three Sisters Springs Site, Citrus County, FL 2007. Biological Research Associates.