EXECUTIVE SUMMARY

The Three Sisters Springs project included the public acquisition of a 57-acre site that contains three, second-order springs known as the Three Sisters Springs that play a critical role in both manatee protection and efforts to restore water quality in the Kings Bay/Crystal River spring shed. The property is located immediately south of downtown Crystal River, Florida, and originally was a part of a natural, forested 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.

The successful effort to acquire the site resulted in the property being owned by both the City of Crystal River (City) and Southwest Florida Water Management District (SWFWMD), with the U.S. Fish and Wildlife Service (Service) managing the property as part of the Crystal River National Wildlife Refuge from 2010 until present. The City, Service, and the SWFWMD developed a management plan in 2010 to ensure that the project site will be developed in accordance with the terms and conditions imposed by the Declaration of Restrictive Covenants agreed to by the City and FCT. This revision of that plan reflects changes in management goals for the property, including proposed capital improvements, and the timeline for their accomplishment based on current funding and staffing.

The Three Sisters Springs property will be managed for the conservation, protection and enhancement of natural resources, and for outdoor recreational and educational opportunities compatible with those goals. A Three Sisters Springs Coordination Committee comprised of the refuge manager, city manager, a representative from the SWFWMD, and a liaison from city council will meet regularly to enhance coordination among the partners and to act as a bridge between the partners and city council.

Many goals identified in the 2010 plan have been accomplished through multiple entities (i.e., SWFWMD, City, Service, and the Florida Fish and Wildlife Conservation Commission) working together to provide funding, in-kind services and expertise. The SWFWMD led habitat enhancement projects including the creation of a 6-acre treatment wetland to reduce nutrient loading to the Kings Bay, restoration of one acre of hydric hammock, shoreline stabilization within the springs and the planting of native vegetation in specific areas. The Service plans to establish native upland vegetation and buffer zones, a pollinator garden, and to continue control of exotic and invasive plants and animals.

The Service developed infrastructure for public access and enjoyment, including an access road, a 1,500-foot boardwalk, a picnic pavilion, temporary entrance gate, and 1.75 miles of trails. Next steps include construction of a permanent entry gate and booth, landscaping, and fencing at the public entrance off Three Sisters Springs Trail; new interpretive panels on existing trails; permanent public restrooms;
manatee viewing platforms along Magnolia Springs; an observation platform for viewing wetland wildlife (herons, egrets and fish); and trail improvements, including wheelchair accessible surfaces. The Service will also develop environmental interpretation and education programs to connect people with nature at this unique site.

The City developed the Three Sister Springs Welcome Center and Transit system to route all public visitors into and out of the property year round. The City will continue to operate the transit service and will consider variations to the route to promote new stops in the future if desired.

Three Sisters Springs has 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 improvements included in this plan will further enhance natural resources on site and the visitor experience that will be in keeping with the area’s reputation as “Florida’s Nature Coast”.
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Figure 1. Proposed new or improved existing facilities, infrastructure, and improved habitat conditions

APPENDIX A: Status of Declaration of Restrictive Covenants

June 2019

APPENDIX B: Community Working Group Recommendations
INTRODUCTION

The Three Sisters Springs project included the public acquisition of a 57-acre site that contains three, second-order springs known as the Three Sisters Springs (TSS) that play a critical role in both manatee protection and efforts to restore water quality in the Kings Bay/Crystal River spring shed.

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 southeastern portion of the property. The man-made waterway fed by Magnolia Spring is a seasonal sanctuary for manatees with a second sanctuary located at Idiot’s Delight where the spring run 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 Three Sisters Springs property was originally part of a larger forested wetland 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. 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 (City) 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.

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 (Service) for land acquisition, with the City of Crystal River, Citrus County, and 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. Funding from the Service and The Felburn Foundation ultimately went to acquire the Consumptive Use Permit (CUP) and related water value from the site owners.

The successful effort to acquire the site resulted in the property being owned by both the City of Crystal River (City) and Southwest Florida Water Management District (SWFWMD), with the U.S. Fish and Wildlife Service (Service) managing the property as part of the Crystal River National Wildlife Refuge (Refuge) from 2010 until present. The City, Service, and the SWFWMD developed a management plan in 2010 to ensure that the project site will be developed in accordance with the terms and conditions imposed by the Declaration of Restrictive Covenants agreed to by the City and FCT. This revision of that
plan reflects changes in management goals for the property, including proposed capital improvements, and the timeline for their accomplishment based on current funding and staffing. As explained further herein, this management plan describes the development of visitor facilities and services on-site, habitat restoration needs, and the potential construction of a visitor welcome center off-site. 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 Spring 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, environmental education, fishing, 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 Spring 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 storm water 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...
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.

NATURAL AND CULTURAL RESOURCES

Natural Communities

Prior to extensive residential and commercial development in and around the project area, the property consisted of a forested wetland system that surrounded the second-order springs known as TSS. Spring magnitude is a category based on the volume of flow from a spring per unit time. There are eight magnitude categories; first-magnitude springs discharge the greatest amount of water at 100 or more cubic feet per second (cfs) and a second order magnitude discharges 10 to 100 cfs (Meinzer 1927). The topography, hydrology, and vegetation of the site have been altered considerably since the 1940’s (City, Service, and SWFWMD 2010, 2012). Currently, the site is generally comprised of open space with scattered trees. A hardwood fringe surrounds the perimeter of the property and provides a buffer around the spring boils and run. Much of the open area was bedded for the planting of pine seedlings and limestone rock but the seedlings were removed and the ground was leveled by the Service during 2011 and 2012.

Wetlands and waterbodies

Early aerial photographs of the property, as well as the remnant vegetation along its perimeter, seem to indicate that the property was originally a mesic or hydric hammock. Three springs are located on its periphery. Magnolia Springs is located on the western margin, Idiots Delight on the southern margin, and the TSS on the southern end of the TSS property. Magnolia Springs reportedly had rock spires and an extensive cave system that collapsed around 1963. Idiots Delight is a group of three vertical shafts that are at least 20 feet deep. The opening of the largest shaft is approximately five feet wide. The springs known as “Three Sisters Springs” are located north of Idiots Delight. TSS consists of three major springheads: Pretty Sister, Deep Sister, and Little Sister, which comprise a complex of three “lobes,” aligned on a northwest-southeast axis, with an approximate total length of 250 feet. The springs, as well as the waterways or runs that they feed, are heavily utilized as seasonal sanctuaries by manatees.
Beginning in the late 1950s, property development began in earnest in the Kings Bay area. Development began on the 57-acre property in the late 1960s and early 1970s. A series of canals had been excavated south and west of the parcel between 1960 and 1974. Clearing of the parcel’s extensive forested wetland began by 1974. An 8-acre lake, now known as Lake Crystal, was excavated in the property’s center to provide spoil material to fill in the wetlands and create upland areas suitable for residential development (City of Crystal River, U.S. Fish and Wildlife Service, and Southwest Florida Water Management District 2012).

In 2015, a 6-acre stormwater treatment wetland on the eastern side of the property was created by the SWFWMD in accordance with the Covenants and the 2010 management plan. This created wetland filters storm water run-off from approximately 100 acres of nearby commercial and residential land and helps reduce nutrient loading to Kings Bay. The wetland was designed to be a tidally influenced marsh dominated by emergent vegetation. As part of this effort, a one-acre hydric hammock was restored in the southeastern corner of Lake Crystal using material excavated during construction of the treatment wetland on site. Lake Crystal is now 7 acres in size with steep slopes characteristic of most borrow pits and has a maximum depth of 40 feet. The District is pursuing additional restoration projects on the property that will be beneficial to the overall goal to preserve and protect the property. SWFWMD staff will coordinate the design and construction of these projects with the U.S. Fish and Wildlife Service and the City prior to construction. Projects that are pursued by the District will be solely funded and constructed by the District. Once completed, operation and maintenance of those projects will be the responsibility of the Service in accordance with this plan and management agreement.

**Uplands**

The uplands within the project site consist of grasses, herbaceous plants, and scattered red cedar (*Juniperus silicicola*). The perimeter of the springs and the property includes red maple (*Acer rubrum*), black cherry (*Prunus serotina*), Virginia willow (*Itea virginica*), sweetgum (*Liquidambar styraciflua*), red cedar, American elm (*Ulmus americana*), sweet bay (*Magnolia virginiana*), pop ash (*Fraxinus caroliniana*), wild coffee (*Psychotria nervosa*), live oak (*Quercus virginiana*), laurel oak (*Q. laurifolia*), water oak (*Q. nigra*), and white basswood (*Tilia americana var. heterophylla*).

**Wildlife and Plants**

Florida sandhill cranes (*Grus canadensis pratensis*, state threatened), Southeastern American kestrels (*Falco sparverius Paulus*, state threatened), wood storks (*Mycteria Americana*, federally threatened), and Florida manatees (federally threatened by similarity of appearance) have been identified using the site, as well as herons, egrets, and ibis (Florida Fish and Wildlife Conservation Commission 2013, City of Crystal River, the Service, and SWFWMD 2010, 2012). Alligators (federally threatened by similarity of appearance) have been confirmed in Lake Crystal and the adjacent springs and canals.

Currently, there are no known federally endangered or threatened plant species on the site. Non-native and nuisance plant and animal species have been identified by Service staff and intergovernmental partners as one of the priority management issues. Invasive species found in the uplands of TSS include exotic Brazilian pepper (*Schinus terebinthifolius*), cogon grass (*Imperata cylindrica*), air potato (*Dioscorea bulbifera*), Japanese climbing fern (*Lygodium japonicum*), wild taro (*Colocasia esculenta*), torpedo grass (*Panicum repens*), and lantana (*Lantana camara*). Other non-native plants may also be present as they are found in nearby uplands, including skunk vine (*Paederia foetida*) and chinaberry (*Melia azedarach*). Feral cats (*Felis catus*) occasionally roam the site. Non-native animals include Cuban tree frogs (*Osteopilus septentrionalis*) and island apple snails (*Pomacea canaliculata*) (City of Crystal River, the
Service, and SWFWMD 2010, 2012). Additionally, numerous species of birds, mammals, fish, reptiles, and amphibians currently use the site.

Manatee Management

The project area is one of the most important properties in Florida for the West Indian Manatee (Trichechus manatus). To illustrate, 489 manatees, representing approximately 8% of the entire Florida Manatee population, were observed using this site during a cold front in February 2016. The manatees use the springs on the property, which deliver millions of gallons of 72 degrees Fahrenheit water each day, to avoid exposure to debilitating cold water temperatures that create a physiological need for warm water for their survival. 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.

Several large boulders and pilings were placed in the spring run by a previous landowner to prevent motor boats from accessing the spring run and the Three Sisters Springs. The boulders impeded the movement of manatees in and out of the springs during low tide, thus making the springs unavailable to manatees for 20% to 30% of the time. The boulders were removed by the Service in 2010 to improve manatee access throughout the tide cycle and the number of manatees using the springs has increased significantly since that time.

The refuge strives to protect warm water habitat at Three Sisters Springs for manatees when they need to be there to survive while maintaining public access. Dramatic increases in manatee ecotourism in Kings Bay coupled with increases in the overall manatee population has led the refuge to evaluate human and manatee interactions within the springs and to develop and implement science-based management protocols to protect manatees. Initially, the refuge closed portions of the springs to human activity (e.g., lobe closures), restricted use of paddle craft during manatee season, and required commercial guides to escort their visitors into the springs. The refuge has contracted the U.S. Geological Survey (USGS) Sirenia Project to analyze movements of telemetry-tagged manatees monitored by satellite in combination with environmental information such as water temperature and level in the Gulf, Crystal and Salt Rivers and local springs to provide valuable insight into their habitat use patterns relative to measurable ambient conditions. Manatees showed the expected pattern of more occurrences in the springs when Gulf temperatures were relatively cold (i.e., less than 20 °C). A detailed look at manatee GPS locations revealed that when Gulf water temperatures at Shell Island were colder than 17 °C, manatee habitat use patterns shift from the Gulf to higher occurrences in Three Sisters Springs and the adjacent springs known as Idiot’s Delight. Thus, the Service now closes Three Sisters Springs to all human activity when Gulf temperatures at Shell Island drop to 17 °C and the springs remains closed until temperatures rise above 17 °C for 24 hours or longer.

In order to provide for the protection of resting manatees, the Refuge maintained a comprehensive protocol for closing the springs complex at the most critical times throughout the 2016/17 winter season based on environmental and biological parameters. Uniformed staff evaluated the environmental conditions and manatee locations and behavior within the springs several times a day, and closed the springs to public access as appropriate. USGS continued to monitor manatee locations by satellite through the 2017/18 season and Refuge staff monitored manatee use of the springs. The Refuge will use analysis of the telemetry data and observational data collected to write a management plan for protection of manatees at Three Sisters Springs.
In keeping with the intent of maintaining and sustaining quality visitor experience while at the same time providing adequate protected areas for manatees, Service will continue to utilize existing federal authorities or rulemaking processes to manage the balance of visitors and manatees. The City may assist with management of visitor access by water as needed. Three Sisters Springs will remain open to the public during non-manatee season for swimming, paddle boarding, and canoeing/kayaking.

Magnolia Springs was designated as a manatee sanctuary under the Endangered Species Act and is therefore closed to public access by water during the winter months. Construction of observation platforms on the western side of the property will improve manatee viewing opportunities at Magnolia Springs.

Restoration

The uplands areas on the property will be converted to an upland forest community by planting live oaks, red cedar, cabbage palms, wax myrtle, and other species native to the area. Some areas will remain open to attract a variety of wildlife species. Nest boxes have already been provided for bluebirds and a bat house has been installed. As resources are available, a garden with native species may be planted to attract butterflies and other pollinators. Restoration of mesic and/or hydric hammock on the site will require removal of fill material, which can be costly. Replanting of mesic hammock (typical species include Shumard oak, white ash, beech, Florida maple, southern magnolia, laurel oak, and pignut hickory) will be limited primarily to areas surrounding the springs and along the canal that flanks the southern and western borders of the property. Planting a live oak/cabbage palm forest would not require removal of fill.

Shoreline Bank Stabilization

Following acquisition of the property in 2010, refuge staff documented significant erosion of the shoreline within the springs. The shoreline was eroded and undercut up to 4 feet as a result of years of direct and indirect human and manatee activity. The erosion caused sediment to enter the spring vents, trees along the shoreline to fall into the springs, and/or tree islands to break away from the shore resulting in an overall loss of shoreline habitat. This posed a safety concern for manatees and visitors due to falling trees and potential entrapment if the shoreline caverns collapsed. The Service partnered with University of Florida, Florida Fish and Wildlife Conservation Commission (FWC), and The Nature Conservancy to document the shoreline conditions and develop alternatives to stabilize the banks. The Service funded initial shoreline surveys and obtained the U.S. Army Corps of Engineers permit for the bank stabilization project; FWC purchased a portion of the limestone boulders used to stabilize the bank; and SWFWMD ultimately funded the final design and construction. The project was completed in 2016 and included planting native vegetation around the springs. SWFWMD surveyed the canal banks along the western and southern borders of the property for erosion during 2018, and has proposed to restore and stabilize the eroded banks. The SWFWMD would design, permit, and implement the construction projects contingent upon SWFWMD Governing Board approval. Upon completion of the bank stabilization projects, the Service will assume maintenance responsibility for the canal shorelines and the spring and spring run shorelines.

Stormwater Treatment Wetlands

As discussed above, SWFWMD completed construction of a 6-acre treatment wetland on the eastern side of the property in 2015 and maintained the wetland for three years post-construction. The Service has assumed management/maintenance responsibility of the wetland including control of invasive and exotic plants. The refuge proposes to construct one viewing platform overlooking the wetlands.
Exotic and Invasive Plant Program

The property contains exotic plants including Brazilian pepper; cogon grass and air-potato which are all listed as Category I species on the Florida Exotic Pest Plant Council list. All exotic and invasive vegetation was removed from the entire property in 2013 by a licensed contractor. Spot treatments are conducted annually by refuge staff to keep infestations under control. Another full treatment of the property by a qualified contractor was conducted in 2019. Refuge staff will continue to treat invasive species with staff or contracted services as needed for the life of the management agreement. The “Exotic Pest Plant Council’s List of Florida’s most invasive Species” will be used to identify invasive exotic plant species.

Feral Animal Program

Currently, there are no feral animals on the property and since purchase this has only been one animal removed (a feral cat). The property will continue to be monitored for introduction of exotic/nuisance animals. If any feral animals are found on the site, they will be removed by qualified personnel.

Listed Plant Species

There are no listed plant species known to occur on the site.

Listed Animal Species

The West Indian manatee, Florida sandhill crane (state threatened) and wood stork (federally threatened) 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.

Archaeological, Cultural, and Historical Resources Protection

There are no known archaeological, cultural, and historical resources on the site. The Service will notify the City and the Division of Historical Resources immediately if evidence is found indicating 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).

STRUCTURES AND IMPROVEMENTS

Acknowledgement and Boundary Signs

There is a sign at the entrance of the property that acknowledges the property was acquired using funds from the Florida Communities Trust and the SWFWMD. The sign also acknowledges 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). The sign will be landscaped in native xeric vegetation.
Existing Physical Improvements

Existing facilities and infrastructure include a 1,500 linear-foot boardwalk that is Americans with Disabilities Act (ADA) compliant, approximately 1.75 miles of unimproved trails, a picnic pavilion, two kiosks with six interpretive panels, a visitor access gate, fee booth, a partially paved access road entering the property from Three Sisters Springs Trail, an unimproved dirt parking area, a public access trolley to the property from an off-site location managed by the City of Crystal River, a gate and dirt access road for emergency vehicles and staff/volunteer access from Kings Bay Drive, temporary toilets and hand washing station, a weather shelter, bird nesting boxes, and a bat house. Year-round public access to the property is permitted for wildlife-dependent recreational activities including wildlife observation, photography, and environmental education and interpretation.

Proposed Physical Improvements

This plan proposes improvements to existing infrastructure and habitat conditions described above and construction of additional facilities to further develop on-site recreational activities and improve and diversify visitor experience (Figure 1, Table 1). Construction of new facilities will be compliant with ADA standards. The property has been zoned by the City as “conservation lands” which has a five percent limit for impervious surfaces. Impervious surfaces constructed as part of this plan would cover only three percent of the property. All facilities will be built to current code and all required permits would be obtained. Funding is currently available to implement the project components described under Tier 1 and those projects will be completed within two years from the date this plan and updated management agreement are approved and signed by all parties. Project components described under Tier 2 would be implemented within 3 to 8 years of that date if funding is available. Tier 3 would be implemented in the future as funding becomes available. Unless otherwise noted, the construction and maintenance of all structures and improvements will be the responsibility of the Service.

Tier 1:
A permanent fee booth (up to 144 square feet (s.f.)), entrance gate, landscaping, and fencing will be constructed at the public entrance off Three Sisters Springs Trail to replace the temporary facilities previously installed.

The existing limerock road will be paved starting at the current paved entrance on Three Sisters Springs Trail extending to the south side of Lake Crystal near the boardwalk. ADA compliant parking spaces will be constructed near the boardwalk in the existing unimproved parking area. A small parking lot to accommodate approximately 12 vehicles will be constructed near the restrooms and proposed education facility. Additional parking spaces may be necessary to provide accessible parking near other constructed facilities and/or to meet operational needs. The need for additional spaces, the number, and their location will be evaluated by the Three Sisters Springs Coordination Committee described under the Coordinated Management section on pages 20 and 21.

Additional utilities, including water, electric power, fiber optic, sewer, and lift station will be installed on the property to service the existing and newly constructed facilities.

A freestanding public restroom (up to 1,200 s.f.) will be constructed to replace the temporary toilets and handwashing station. Restrooms may include a changing room.
Two viewing platforms (up to 150 s.f. each) will be built along the trail bordering the Magnolia Springs on the western edge of the property for observation of manatees using the springs, particularly during the cold weather months.

Improvements will be made to the approximately 1.75 miles of nature trails, including installing wheelchair accessible surfaces such as boardwalks, paving, or natural or pervious materials. The trails provide visitors with a view of the springs and treatment wetlands and would connect the proposed outdoor classroom or environmental education center (Tier 3), manatee viewing platforms, pier, and restrooms to the existing picnic pavilion and boardwalk. Trails will be used for wildlife viewing, bird watching, photography, and environmental education and interpretation. Benches were installed along the trails during 2018 and shade areas will be established with native plantings.

A vegetative buffer (25 to 50 feet wide) comprised of native plants will be established along the property boundary bordering Magnolia Springs and other areas as needed.

Structural improvements to guardrails on the boardwalk were required to meet building code even though the boardwalk was deemed structurally sound by an independent structural engineer. The improvements were completed in 2017 and the boardwalk was inspected and certified by a structural engineer that the boardwalk meets local building codes.

Seven new interpretive signs were designed in cooperation with the SWFWMD and were installed along existing trails in 2018. Kiosk panels will be updated to reflect the new master plan.

The upland portion of the property was treated for exotic and invasive plants by an experienced and licensed contractor during 2018. The wetlands will be treated during 2019.

**Tier 2:**

An outdoor environmental education facility (up to 1,000 s.f.) would be built on the south side of Lake Crystal. The facility may be open air or a screened porch with ceiling fans, electrical outlets, etc. to support a projector and viewing screen. The facility may include a small air conditioned space. The facility would provide education and interpretation for visitors ranging from kindergarten through adulthood. Educational programs may include but are not limited to the ecology of the springs, the use of the springs as a manatee sanctuary, manatee ecology, manatee habitat, water quality, wetland ecology, and wildlife stewardship/conservation. Amenities included in the center could be limited to interactive displays within the building with class instruction occurring in the outdoor classroom. All facilities would be built to blend in to the natural setting.

One observation platform (up to 150 s.f.) would be constructed on the treatment wetland to enhance wildlife (e.g., birds, alligators, and fish) and wetland plant/habitat viewing opportunities.

Up to two accessible docks or piers (up to 500 s.f.) would be constructed on the south side of Lake Crystal to provide limited recreational, catch-and-release fishing. The property will not be open to fishing until the Service has evaluated the use through the Comprehensive Conservation Plan (CCP). A draft CCP is expected in 2019.

A weather shelter would be built over an existing concrete slab (up to 450 s.f.) to provide shelter for visitors during poor weather conditions.
A maintenance shed (up to 300 s.f.) would be constructed to house tools and equipment needed for maintenance of the property and facilities.

Up to 34 acres of native vegetation, including a pollinator garden would be planted.

**Tier 3:**
Littoral shelves would be created at strategic locations along the bank of Lake Crystal to provide wetlands and improved aquatic habitats for fish and wildlife.

A Children’s Nature Trail will be considered to educate visitors on native wildlife and habitats is proposed. The trails could include bird nests; animal dens; replicas of wildlife and their tracks and scat; etc.

**Table 1. Proposed facilities, infrastructure, habitat improvements, and public use opportunities on the uplands at TSS.**

<table>
<thead>
<tr>
<th>Visitor Facilities, Infrastructure, and Improvements</th>
<th>Existing</th>
<th>Proposed</th>
<th>Documents used to develop the Plan (yes, if supported - no, if not mentioned or opposed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>Deed of Restrictive Covenants Appendix A</td>
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</tbody>
</table>

**Tier 1: Projects to be completed within 2 years of signed agreement.**

<table>
<thead>
<tr>
<th>Entrance</th>
<th>Existing</th>
<th>Proposed</th>
<th>Constructs a permanent entrance fee booth (144 s.f.), gate, landscaping and fencing</th>
<th>No</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
</table>

| Interpretive signage | 2 Existing kiosks with 6 panels each | Add 7 new interpretive signs, update and improve existing kiosk panels | Yes | Yes | Yes |

| Restroom building | None | Construct a restroom | Yes* | Yes | No |

<p>| Viewing platforms along Magnolia Springs | None | Construct two viewing platforms (up to 150 s.f. each) along Magnolia Springs manatee sanctuary | Yes* | Yes | Yes |</p>
<table>
<thead>
<tr>
<th>Project Description</th>
<th>Existing</th>
<th>Construct</th>
<th>ADA Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking for outdoor environmental education facility and fishing pier</td>
<td>None</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Roads</td>
<td>Existing Entrance Road</td>
<td>Resurface 54,200 s.f. of access road to reduce dust</td>
<td>Yes</td>
</tr>
<tr>
<td>Accessible parking spaces near boardwalk</td>
<td>Existing Dirt Parking Lot</td>
<td>Construct accessible parking spaces</td>
<td>Yes</td>
</tr>
<tr>
<td>Utilities</td>
<td>Limited utilities for restrooms</td>
<td>Add utilities such as water, electric, phone, sewer/ lift station</td>
<td>No</td>
</tr>
<tr>
<td>Vegetative buffer</td>
<td>None</td>
<td>Proposed along Magnolia Trail (approximately 0.15 miles) and along property boundary where needed.</td>
<td>Yes</td>
</tr>
<tr>
<td>Nature trails</td>
<td>Existing</td>
<td>Improve approximately 1.75 miles of existing trails (resurface with boardwalk, paving, natural and pervious materials)</td>
<td>Yes</td>
</tr>
<tr>
<td>Boardwalk enhancement</td>
<td>1500-linear foot boardwalk</td>
<td>Enhance support posts to meet code</td>
<td>No</td>
</tr>
<tr>
<td>Exotic and invasive plant control</td>
<td>Initial treatment conducted in 2013. Spot treatments conducted annually thereafter</td>
<td>Exotic/Invasive plant removal by chemical and hand-pulling</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Improvements considered but eliminated from the plan

During development of this plan, many different options were considered. Table 2 identifies components that were considered but not included in this plan.

## Tier 2: Projects to be completed as funding becomes available (3-8 years to fund/construct).

| Outdoor environmental education facility | None | Develop an outdoor education facility (up to 1,000 s.f.) | No | Yes | Yes |
| Wetland area viewing platform | None | Construct a viewing platform (up to 150 s.f.) at the edge of the wetland restoration area | Yes* | Yes | Yes |
| Piers or docks | None | Construct one or two piers/docks (up to 500 s.f.) on Lake Crystal | Yes | Yes | Yes |
| Weather shelter | 10 x 15 aluminum carport over concrete slab | Construct a cover over the existing concrete slab (450 s.f.) to provide shelter for visitors during inclement weather events | No | No | No |
| Maintenance shed | None | Construct up to 300 s.f. Maintenance shed | No | No | No |
| Native plants | None | Proposed to restore an estimated 34 acres of native plants including a pollinator garden | Yes | Yes | Yes |

## Tier 3: Long-term planning, unknown time frame.

| Littoral Zones | None | Construct littoral zones in Lake Crystal | No | No | Yes |
| Children’s Nature Trail | None | Educate visitors on native wildlife and habitats | No | No | No |

* Not specifically identified in the covenants but will count towards the minimum of four recreational facilities required by the Florida Communities Trust.
Table 2. Components considered but eliminated from the Plan.

<table>
<thead>
<tr>
<th>Components</th>
<th>Reason for Elimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-site visitor center (10,000 to 12,000 s.f.)</td>
<td>Not supported by community working group</td>
</tr>
<tr>
<td>Semi-permeable overflow parking area (1,175 s.f.) and 65-space parking lot</td>
<td></td>
</tr>
<tr>
<td>Bunkhouse (2,000 s.f.)</td>
<td></td>
</tr>
<tr>
<td>Maintenance building (1,700 s.f.)</td>
<td></td>
</tr>
<tr>
<td>Recreational vehicle (RV) pad with water and sewer</td>
<td></td>
</tr>
<tr>
<td>Canoe/Kayak Launch</td>
<td></td>
</tr>
<tr>
<td>Children’s splash pad</td>
<td>Not consistent with wildlife-dependent recreation</td>
</tr>
</tbody>
</table>

Estimated Costs of On-Site Physical Improvements

Table 3 includes costs (2017 dollars) associated with the design and building of the facilities and infrastructure identified above.

Table 3. Estimated costs of proposed improvements and funding source.

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Cost (2017 dollars)</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1: Funding currently available, construction expected in 2 years.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resurface road and parking facilities at the boardwalk, restrooms/proposed education center and proposed fishing pier. (Includes design and permitting fees.)</td>
<td>$400,000</td>
<td>City</td>
</tr>
<tr>
<td>Water, sewer, lift station</td>
<td>$50,000</td>
<td>City</td>
</tr>
<tr>
<td>Fee booth (144 s.f.), entrance gates, landscaping, and fencing</td>
<td>$250,000</td>
<td>Service</td>
</tr>
<tr>
<td>Interpretative signage (8 signs, 6 panels)</td>
<td>$20,000</td>
<td>Refuge</td>
</tr>
<tr>
<td>Free standing restrooms (1,200 s.f.)</td>
<td>$300,000</td>
<td>Service</td>
</tr>
<tr>
<td>Restroom site work and landscaping</td>
<td>$25,000</td>
<td>Service</td>
</tr>
<tr>
<td>Electricity</td>
<td>$15,000</td>
<td>Service</td>
</tr>
<tr>
<td>Project Description</td>
<td>Cost</td>
<td>Funding Source</td>
</tr>
<tr>
<td>---------------------</td>
<td>------</td>
<td>----------------</td>
</tr>
<tr>
<td>Two manatee viewing platforms (up to 150 s.f. each)</td>
<td>$60,000</td>
<td>Refuge/Friends</td>
</tr>
<tr>
<td>Nature trails (90,000 s.f., granular)</td>
<td>$235,000</td>
<td>Service</td>
</tr>
<tr>
<td>Vegetative buffer along boundary as needed (25 to 50 s.f. wide)</td>
<td>$25,000</td>
<td>Service</td>
</tr>
<tr>
<td>Exotic/invasive plant removal</td>
<td>$20,000</td>
<td>Refuge</td>
</tr>
<tr>
<td>Design, permitting, and survey work</td>
<td>$150,000</td>
<td>Service</td>
</tr>
</tbody>
</table>

**Tier 2: Projects to be completed as funding becomes available (2 to 8 years to fund/construct)**

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Cost</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor environmental education facility (1,000 s.f.)</td>
<td>$350,000</td>
<td>To be determined (TBD)</td>
</tr>
<tr>
<td>Pier or dock (1 or 2 up to 500 s.f.)</td>
<td>$125,000</td>
<td>TBD</td>
</tr>
<tr>
<td>One wetland viewing platform</td>
<td>$50,000</td>
<td>TBD</td>
</tr>
<tr>
<td>Weather shelter (concrete pad existing, 450 s.f.)</td>
<td>$10,000</td>
<td>TBD</td>
</tr>
<tr>
<td>Maintenance shed (approximately 150 s.f.)</td>
<td>$2,500</td>
<td>TBD</td>
</tr>
<tr>
<td>Upland native plant restoration (34 acres)</td>
<td>$50,000</td>
<td>TBD</td>
</tr>
<tr>
<td>Wetland native plant restoration (17 acres; if wetland restoration desired, only 17 acres of upland would be planted instead of 34)</td>
<td>Up to $200,000</td>
<td>TBD</td>
</tr>
<tr>
<td>Pollinator garden</td>
<td>$5,000</td>
<td>TBD</td>
</tr>
</tbody>
</table>

**Tier 3: Timeframe unknown**

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Cost</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Littoral zones</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Children’s nature trail</td>
<td>TBD</td>
<td>TBD</td>
</tr>
</tbody>
</table>

**PERMITS**

Development work may include the construction of facilities such as an education center, observation platform(s), a dock or pier, restrooms, trails, parking lot, and signage. Restoration activities will include exotic plant removal and native vegetation planting.

A number of potential permits and/or orders and authorizations for development and restoration activities have been identified. These can include:
Final USFWS Plan 2019

- A City of Crystal River building permit;
- A State Programmatic General Permit (SPGP) for minor work located in waters of the United States;
- 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; and
- An authorization to use Sovereign Submerged Lands.

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

- 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

PUBLIC USES

Water Access to the Springs

The public currently accesses the springs by water, either by swimming in through the spring run or by paddle craft. No motorized craft, such as motorboats, jet skis, etc., are allowed in the springs or the spring run. During manatee season, no canoes, kayaks or other paddle craft are allowed in the springs. Visitors may access the springs by water by swimming or snorkeling into the springs. 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 experience and minimize manatee disturbance. The Service may enact partial or complete closure of Three Sisters Springs to people when environmental conditions warrant additional protection for manatees. Any additional management actions concerning the protection of manatees in the springs and adjacent areas will be made independent of this plan and 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 also prohibited from accessing the shoreline and property from the water. In as much 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 Service 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 pier/dock is planned. If fishing is determined to be a compatible use through the refuge’s comprehensive conservation planning process, disturbance from angling activities and fishing gear litter would be minimized and these uses would be controlled and monitored. All fishing activities would be restricted to a designated fishing pier(s).

Fishing would not be permitted on any other area of the property in order to minimize wildlife disturbance. The pier(s) will be ADA-compliant and would be of sufficient size to accommodate several individuals at one time. The springs and the canal banks along the perimeter of the property will be closed to fishing year-round.

Environmental Education and Interpretation

The refuge will continue to conduct environmental education and interpretive programs on the property. The refuge has established a free interpretive program for visitors. The program includes guided tours, walks and public education along the trails and boardwalk. The tours focus on native vegetation around the springs and the wetland, wildlife, springs, and history of the property and are consistent with Refuge objectives and this plan. Boardwalk interpreters are also provided to interact with the public on a regular basis. Birdwatching tours are also conducted during fall and spring migration and the winter when species diversity is higher. Almost 90 species of birds have been seen on the property. The refuge plans to continue these programs and develop additional year-round educational activities as visitor facilities are developed.

The Friends of the Crystal River National Wildlife Refuge Complex (Friends) and the refuge have developed a successful environmental education program with the Homosassa Elementary School that has been implemented annually since 2012. The program targets 4th and 5th graders and the lesson plans are geared to enhance knowledge of the state science curriculum. Armed with magnifying glasses and clipboards, students are transported to the Salt Marsh Trail on the Chassahowitzka National Wildlife Refuge to learn about food webs, ecosystems and salt marsh habitat, photosynthesis, and the water cycle. The 5th graders’ standardized test scores were the highest in the state of Florida in 2015 and continue to be the highest in the school district every year. The elementary school administration feels that this hands-on program is a strong factor in their students’ success.

We piloted the program with the Crystal River Primary School (CRPS) on the Three Sisters Springs property during the 2016/2017 school year. The CRPS was impressed with the program and requested that we conduct the program as a teacher training during fall 2017. A total of 110 CRPS students from five different 5th grade classes went through the 6-hour educational program held at TSS during January 2019. The Friends and refuge plan to continue development of this educational program with the CRPS and other schools in the Citrus County.
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. All special events will be coordinated with City. The City may utilize the property for special events that are consistent with Service policy governing appropriate and compatible use of national wildlife refuges, and coordination with the Refuge in advance.

MANAGEMENT ISSUES

Coordinated Management

The Three Sisters Springs property will continue to be managed by the Service. The Service has broad experience in co-managing property with municipal and state governments. The Service will hold a management agreement over the land and water to manage the property as part of the Crystal River National Wildlife Refuge and the National Wildlife Refuge System. The governance of refuges follows the National Wildlife Refuge Administration Act, as amended, the Refuge Recreation Act, and other regulatory statutes that apply to all lands owned or managed by the Service.

The management agreement will span a length of 20-years and will obligate the Service to manage the project in such a way as to comply with the Declaration of Restrictive Covenants (Appendix A). The agreement may be modified at any time by mutual written consent of the parties and may be terminated by either party for any reason upon six (6) months advance written notice to the other party.

The Service is restricted in using appropriated funds to make permanent improvements to property not owned by the federal government unless authorized by statute or if the following conditions are met (GAO-01-179SP Appropriations Law-Vol. IV, pages 16-206 to 16-210):

1. The improvement must be incident to and essential for the effective accomplishment of an authorized purpose of the appropriation;
2. The amount of the expenditure must be reasonable;
3. The improvement must be for the principal benefit of the United States government; and
4. The interests of the United States government in the improvement must be protected.

All parties 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.

Once this management plan and/or any revision to the plan is approved by all parties, the Service and/or City may proceed with implementation of elements within the plan without requiring further approval by City Council. A Three Sisters Springs Coordination Committee (Coordination Committee) comprised of the refuge manager, city manager, and a liaison from city council will meet regularly to enhance coordination among the partners and to act as a bridge between the partners and city council. The committee will provide valued input on management goals for the property and review and evaluate progress through regularly scheduled committee meetings. All partners will have input upfront.
during planning efforts for development of visitor services and activities allowed on the property and through the 30% design phase of capital improvements through this committee. Public engagement is required on proposed capital improvements and development of planning documents on federally owned or managed lands. Therefore, public input will generally follow federal policy and guidelines. All decisions will comply with National Wildlife Refuge System policy and federal law.

**Bicycle/Walking Access**

An extension of the City’s Crosstown Trail was completed by the City to provide for access to the Three Sisters Springs property. Entry into the property will require payment of an entrance fee as discussed below.

**Trolley Access**

The City will provide for public transportation into Three Sisters Springs via its established Welcome Center and Trolley service in accordance with a November 2016 Memorandum of Understanding (MOU) between the Service and the City. Where this plan and the MOU contradict, this plan shall prevail. The route provides stops at a public park and in the Community Redevelopment Area to enhance the visitors experience and support downtown economic development. These changes have improved the economic health of this area and new private investment in this area. The City will continue to operate the transit service, visitor center, and fee booth at the entrance to the Three Sisters Springs Unit under this plan and will consider variations to the transit route to promote new stops requested by either party. The City will, to the extent practicable, add a stop at the refuge headquarters at 1502 SE Kings Bay Drive once renovations are completed. Changes may or may not change the ticket cost based on the time and distance of the proposed change. If, in the future, the City decides to discontinue operation of the trolley, welcome center and/or fee booth with City staff, the Service requires a 6-month notice to make alternative arrangements to replace the City-managed amenities.

The City-managed Visitor Center and transit system will be operated as an Enterprise Fund where the costs of providing transportation services to the general public on a continuing basis will be financed or recovered primarily through user charges. The City will collect entrance fees on behalf of the Service and remit them to the Service on a monthly basis. Any credit/debit card service fees associated with the collection of the fees will be shared on a prorata basis by both parties. The City will provide to the Service a monthly report of the total number of visitors to the property, mode of transportation or access to the property, funds collected, and expenditures. The City will copy the Service on monthly transit system reports provided to City Council. All funds collected, on behalf of either party, will be utilized for the operation, maintenance, or capital costs associated with the Property, Visitor Center or Trolley Service.

The Three Sisters Springs Coordination Committee may periodically decide that net income is appropriate for specific capital improvements or maintenance projects on the property.

Funds from ticket sales will be shared with the Service as established below. Ticket prices may change as required to meet expenses incurred during operation of the Welcome Center and Transit System. Changes to ticket prices must be approved by the Service, the Coordination Committee and City Council annually.
**Maintenance**

The Service will be responsible for the long-term maintenance of all the facilities and infrastructure on the Three Sisters Springs property to ensure public safety.

**Law Enforcement**

The Refuge Complex has two full-time Federal Wildlife Officers that work staggered schedules to provide coverage 7 days a week. These officers cover law enforcement issues on Three Sisters and should be called for any incidents. However, the Service does not have exclusive jurisdiction over the Three Sisters property nor does the refuge have the resources to provide 24-hour/7 days per week law enforcement response to the property. The Service exercises proprietary jurisdiction over the property, which essentially means State and local officers can respond to any type of criminal incident if refuge officers can't be reached or are not available. The Service estimates that 25% of officer time will be spent patrolling the Three Sisters Springs property by land or water. Additional officers may be provided by the Service at special events or particularly busy times of the year if needed.

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<table>
<thead>
<tr>
<th></th>
<th>Entrance Price</th>
<th>City</th>
<th>USFWS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manatee Season (Nov. 15 - March 31)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult</td>
<td>$20.00</td>
<td>$15.00</td>
<td>$5.00</td>
</tr>
<tr>
<td>Senior (55+)</td>
<td>$17.50</td>
<td>$12.50</td>
<td>$5.00</td>
</tr>
<tr>
<td>Military</td>
<td>$15.00</td>
<td>$10.00</td>
<td>$5.00</td>
</tr>
<tr>
<td>Child (6-15)</td>
<td>$7.50</td>
<td>$7.50</td>
<td>$0.00</td>
</tr>
<tr>
<td>Child Under 6</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>AP - Walk-in/Bike-in</td>
<td>$100.00</td>
<td>$80.00</td>
<td>$20.00</td>
</tr>
<tr>
<td>AP-Trolley</td>
<td>$140.00</td>
<td>$120.00</td>
<td>$20.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Entrance Price</th>
<th>City</th>
<th>USFWS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Season (April 1 - Nov14)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult</td>
<td>$12.50</td>
<td>$7.50</td>
<td>$5.00</td>
</tr>
<tr>
<td>Senior (55+)</td>
<td>$12.50</td>
<td>$7.50</td>
<td>$5.00</td>
</tr>
<tr>
<td>Military</td>
<td>$11.50</td>
<td>$6.50</td>
<td>$5.00</td>
</tr>
<tr>
<td>Child (6-16)</td>
<td>$7.50</td>
<td>$7.50</td>
<td>$0.00</td>
</tr>
<tr>
<td>Child Under 5</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>AP - Walk-in/Bike-in</td>
<td>$100.00</td>
<td>$80.00</td>
<td>$20.00</td>
</tr>
<tr>
<td>AP-Trolley</td>
<td>$140.00</td>
<td>$120.00</td>
<td>$20.00</td>
</tr>
</tbody>
</table>

For example, Federal pass holder would pay $15 instead of $20 during season and $7.50 during the off-season.

Citrus County residents will receive 50% discount upon request on the City fee. For example, Citrus County residents would pay $12.50 instead of $20 during season and $8.75 during the off-season.

All Federal Pass and Duck Stamp holders will receive 100% discount of the USFWS fee plus up to three people in their party.

For example, Federal pass holder would pay $15 instead of $20 during season and $7.50 in the off-season.

CRNWR Annual Pass will be combined with the City Annual Pass to create the Three Sisters Springs Annual Pass. There will be a walk-in pass and a trolley pass that will admit pass holder and up to 3 additional guests each visit. Pass will be valid for one year from the date of purchase.

Fees may be waived for educational programs and non-profit events at the mutual consent of the City and USFWS.
Concessions

If in the future the City decides to discontinue operation of the trolley, welcome center and/or fee booth with City staff, the Service may provide visitor access through a concession contract in accordance with Service policy. As noted above, the Service requires a 6-month notice to make alternative arrangements to replace the City-managed amenities. It is acknowledged that the City must provide 60 days written notice to FCT 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 FCT.

STAFFING

There are currently 9 full-time employees currently working at the Refuge Complex. Staff is comprised of Refuge Managers, a Visitor Services Specialist/Refuge Ranger, Law Enforcement Officers, a Biologist, a Natural Resource Planner, an Administrative Specialist and Maintenance Workers. Initially, management would be achieved by staff allocating an estimated percentage of their time at no less than the rates and projected annual costs listed below. These costs will be covered under the existing refuge budget until entrance fees are established. Please note that all staffing and management actions proposed are contingent upon the availability of funding through the Federal government budget process. Note that the refuge is currently allocating approximately 32% of overall staff time at an estimated annual cost of $301,715 during Fiscal Year 2017.

Cost Estimates for Current Staffing/Management

<table>
<thead>
<tr>
<th>Position</th>
<th>FTE</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refuge Manager</td>
<td>30%</td>
<td>$45,000</td>
</tr>
<tr>
<td>Deputy Manager</td>
<td>20%</td>
<td>$30,000</td>
</tr>
<tr>
<td>Wildlife Biologist</td>
<td>30%</td>
<td>$30,000</td>
</tr>
<tr>
<td>2 Law Enforcement Officers</td>
<td>30%</td>
<td>$70,000</td>
</tr>
<tr>
<td>Visitor Services Specialist/Refuge Ranger (Vacant)</td>
<td>75%</td>
<td>$75,000</td>
</tr>
<tr>
<td>Maintenance worker</td>
<td>50%</td>
<td>$50,000</td>
</tr>
<tr>
<td>Maintenance budget</td>
<td></td>
<td>$25,000</td>
</tr>
</tbody>
</table>

TOTAL: $325,000

Once an entrance fee is established, the refuge will seek to add positions to increase management and education at the site, including a full-time Volunteer Coordinator/Refuge Ranger and possibly two fee collectors depending on the level of involvement desired by the City. The City currently staffs the fee booth 7 days a week. Once the property has been fully developed, anticipated user fee collections may reach approximately $402,500 annually (e.g., average ticket sales of $11.50 per person X 35,000 visitors). The Service’s portion of the entrance fees (i.e., $175,000) will be used in accordance with the Federal Lands Recreation Enhancement Act, including additional staff salary and benefits, the upkeep and maintenance of the property and facilities, development of visitor programs and activities.

Cost Estimate for Increased Management if City continues operation of the Trolley/Fee Booth

<table>
<thead>
<tr>
<th>Position</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteer Coordinator/Refuge Ranger – 100% FTE</td>
<td>$100,000</td>
</tr>
<tr>
<td>Operations and Maintenance</td>
<td>$50,000</td>
</tr>
</tbody>
</table>

TOTAL: $150,000
Cost Estimates for Increased Management if Service operates the Trolley/fee Booth

3 Fee Booth Collectors – 100% each FTE $180,000
Volunteer Coordinator/Refuge Ranger – 100% FTE $100,000
2.5 Bus Drivers – 100% $150,000
Operations and Maintenance $50,000
TOTAL: $480,000

Monitoring and Reporting

The following will be monitored and reported by the Service and the City:
- Number of visitors;
- Breakdown in ticketing categories and sales;
- Temporary spring closures;
- Annual update to list of birds and/or other wildlife using the property;
- Removal of exotic plants;
- Infrastructure needs or concerns; and
- Progress towards meeting objectives of the FCT Declaration of Restrictive Covenants.

These findings will be compiled in a report and given to FCT, SWFWMD, City and the Service on an annual basis, with such report to be filed by no later than January 30th of each year.

Annual Stewardship Report

The City and FWS will prepare an Annual Stewardship Report, due to FCT on January 30th of each year. The report will evaluate the implementation of the Management Plan by Fiscal Year (October 1 through September 30 of the following year).

Management Plan Revisions

It is acknowledged that written approval must be requested from FCT before undertaking any site alteration or physical improvement that is not addressed in the approved management plan. Once the plan and/or any revision to the plan is approved by all parties, the Service and/or City may proceed with implementation of elements within the plan without requiring further approval by City Council.
FIGURE 1. PROPOSED NEW OR IMPROVED EXISTING FACILITIES, INFRASTRUCTURE, AND IMPROVED HABITAT CONDITIONS
APPENDIX A: STATUS OF DECLARATION OF RESTRICTIVE COVENANTS

JUNE 2019

1. The future land use and zoning designations of the project site shall be changed to conservation, outdoor recreation, open space or other similar category.
   
   Completed.

2. At least four recreational facilities, such as a canoe/kayak launching platform, fishing pier, picnic pavilions and wildlife platforms shall be provided. The facilities shall be developed in a manner that allows the general public reasonable access for observation and appreciation of the natural resources on the project site without causing harm to those resources.
   
   Partially complete. A boardwalk with 5 viewing platforms and a picnic pavilion have been constructed. The canoe/kayak launch has been removed from the plan due to lack of community support. Two manatee viewing platforms, an observation platform over the wetlands, public restrooms and a fishing pier/dock are planned for the future.

3. The project shall provide access facilities to an existing open water shoreline, such as a canoe/kayak launching platform and fishing pier.
   
   Initiated. The canoe/kayak launching platform has been proposed for removal from the plan. Design and location of the fishing pier was addressed in an Environmental Assessment and will be installed contingent upon agreement by the City and future funding.

4. A permanent recognition sign, at a minimum size of 3’ X 4’, shall be maintained at the entrance area of the project site. The sign shall acknowledge the project site was purchased with funds from the Florida Communities Trust Program and the Recipient.
   
   Complete.

5. Interpretive signs or kiosks shall be provided on the project site to educate visitors about the natural environment or history of the area.
   
   Complete. However, additional wayfinding and interpretive signs will be developed as visitor facilities, infrastructure and habitat improvements are completed.

6. At least 12 regularly scheduled educational classes or programs shall be provided at the project site per year. These programs shall promote the protection of environmental resources.
   
   Complete/On-going. The refuge conducts guided tours and interpretive programs for free to the public during manatee season and has plans to expand the schedule year round. Two interpretive tours are offered twice daily: “Beyond the Boardwalk” and “A Walk Through the Wetlands” and birdwatching tours are offered twice per week, resulting in up to 30 programs per week during manatee season. Weekly birding tours were initiated during May 2019 and will continue through the summers.

   Additionally, the refuge and the Friends of the Crystal River National Wildlife Refuge Complex have implemented an environmental education program with the Crystal River Primary School (CRPS) to
teach 5th graders about the refuge including springs, watersheds, wetlands. This program was piloted in 2017 and was implemented during 2019. A total of 110 CRPS students from five different 5th grade classes went through the 6-hour educational program held at TSS during January 2019.

7. The natural communities that occur on the site shall be preserved and appropriately managed to ensure the long-term viability of these communities. 
   Complete/On-going. The shoreline of the springs was restored using sandbags and boulders to prevent erosion and shoreline collapse. Native wetland vegetation was planted along the shoreline and vicinity of the boardwalk. Restoration is planned for the remaining areas, including a butterfly/pollinator garden contingent upon agreement from the City. Only native vegetation will be planted on site.

8. The project site shall be maintained in a manner that protects and enhances the listed and non-listed native wildlife species and their habitat. Periodic surveys shall be conducted of listed species using the project site. 
   Complete/On-going. Bird surveys are conducted regularly as well as a floristic inventory. Manatee use of the springs is monitored regularly and human access is restricted to protect manatees during cold weather events.

9. The location and design of any parking facility shall be designed to have minimal impacts on natural resources. The parking area shall incorporate pervious materials wherever feasible. 
   Complete, although improvements will be made during 2019.

10. The quality of surface waters shall be improved by the installation of storm water facilities on the project site that provide wildlife habitat and/or open space in a park like setting. The development of the storm water facilities shall be coordinated with and constructed by the Southwest Florida Water Management District. 
    Complete. The 6-acre Wetland Treatment Area and 1-acre of hydric hammock in Lake Crystal were constructed in 2015.

11. Any proposed storm water facility for the project site shall be designed to provide recreation open space or wildlife habitat. 
    Complete. The storm water treatment wetland was planted with native vegetation and attracts a variety of wildlife, particularly water birds.

12. A significant portion of the upland area on the project shall be planted with native vegetation. 
    Partially complete/On-going. A variety of native hardwoods were planted to help stabilize the bank around Three Sisters Springs, restore areas that had significant amounts of Brazilian Pepper removed during 2013, provide future shade along the boardwalk, and create a buffer between Three Sisters Springs and the neighboring properties. A total of 60 trees were planted, including the following species: eastern red cedar, bald cypress, water tupelo/black gum, sweetgum, red maple, sassafras, Walter’s viburnum, and buttonbush. Restoration is planned for the remaining open areas, including a butterfly/pollinator garden contingent upon agreement from the City and availability of funding.
13. A significant portion of the wetland area on the project shall be planted with native vegetation.  
   Complete.

14. Exotic vegetation shall be removed from the project site.  
   Complete/On-going. The exotic and invasive vegetation was removed from the entire property in 2013 and the uplands were treated by a licensed contractor during 2018. Maintenance treatments are conducted annually by refuge staff.

15. An ongoing monitoring and control program for invasive vegetation including exotic (non-native) and nuisance native plant species shall be implemented at the project site. The objective of the control program shall be the elimination of invasive exotic plant species and the maintenance of a diverse association of native vegetation. The management plan shall reference the Exotic Pest Plant Council’s List of Florida’s Most Invasive Species to assist in identifying invasive exotics on the project site.  
   Complete/On-going. The exotic and invasive vegetation was removed from the entire property in 2013 and the uplands were treated by a licensed contractor during 2018. Maintenance treatments are conducted annually by refuge staff.

16. A feral animal removal program shall be developed and implemented for the project site.  
   Complete/On-going. Since 2010, only one feral animal has been documented and removed from the project site.

17. Prior to the commencement of any proposed development activities, measures will be taken to determine the presence of any archaeological sites. All planned activities involving known archaeological sites or potential site areas shall be closely coordinated with the Division of Historical Resources in order to prevent the disturbance of these sites. Information on significant historical and archaeological sites shall be provided to the Division of Historical Resources for the purpose of updating the Florida Master Site file.  
   Complete/On-going, as appropriate. No archaeological sites are known to exist on the property.

18. A safe pedestrian sidewalk connection shall be provided between the project site and the sidewalk network in the adjacent neighborhood.  
   Complete.

19. A nature trail of at least one quarter mile shall be provided on the project site.  
   Complete. Approximately 1.75 miles of trails currently exist on the site.

20. The development and management of the project site shall be coordinated with the agencies managing the Cross Town Trail, to ensure the project site is managed as part of a linked land-based trail system.  
   Complete.

21. Neither the Recipient nor any third party shall pump, withdraw, divert from or impound on the FCT project site ground or surface water for the purposes of commercial or industrial use.  
   Complete.
APPENDIX B: COMMUNITY WORKING GROUP RECOMMENDATIONS

Three Sisters Springs Community Working Group

The Three Sisters Springs Community Working Group has reached unanimous consensus on these recommendations as the first step toward the development of our community’s urban wildlife refuge.

We offer these six priorities as a starting point for the residents, the city, the federal government, the school system and community interest groups to work together to give direction toward the best utilization of the refuge.

Every attempt has been made to look at the restrictive covenants from the Florida Community Trust (FCT) as a guide toward developing these recommendations.

The working group can be called back by the city or USFWS if needed.

All meetings were conducted under the Florida Sunshine laws and were advertised and open to the public.