



Lagoon Greenway Plan

May 12, 2009



Lagoon Greenway Plan

Completed by the Indian River Land Trust in conjunction with the
Lagoon Greenway Advisory Committee

Purpose of the Lagoon Greenway

The purpose of the Indian River “Lagoon Greenway” is to create a trail system for public access to the Indian River Lagoon between the South Relief Canal and the 17th Street Bridge for a variety of recreational and educational uses.

Overview of Greenway Plan

The Lagoon Greenway Plan is the means to bring the Lagoon Greenway to reality. Based on the goals set forth below, the Plan encompasses three major elements:

1. Resource inventory and an analysis of the opportunities and challenges associated with the establishment of a greenway trail system and related facilities;
2. Layout and cost estimates for proposed phased trail/elevated walk segments, parking areas, access points, kiosks and other amenities; and
3. Recommendations for an organizational structure, timeline and possible funding sources for the Lagoon Greenway’s development, promotion and long-term management.

Lagoon Greenway Goals

The following set of goals and strategies for the Lagoon Greenway are derived from discussions among involved local and state agency staff, members of the Lagoon Greenway Advisory Committee and Indian River Land Trust board and staff.

1. Create a continuous set of pathways for non-motorized use through the upland and lowland areas along the Indian River Lagoon with ample public access as appropriate.
 - a. Make use of existing unimproved mosquito district impoundment roads
 - b. Provide a diversity of connected pathways and elevated walkways
 - c. Create safe access from adjacent neighborhoods and public properties
2. Provide for a diversity of recreational and educational opportunities within the Greenway Planning Area as appropriate for the residents and visitors of Indian River County. Recreational activities should include:
 - a) bicycling, jogging and walking; b) lagoon viewing; c) canoe/kayak access; d) fishing;
 - e) wildlife observation & study; f) dog walking and g) fitness.

3. Continue to protect and conserve the natural resources of the Lagoon and adjoining wetland and upland habitats.
 - a. conduct trail and wetland clean ups
 - b. provide for long-term abatement of invasive plants
 - c. implement improvements to the natural resources

4. Establish interpretive facilities (and corresponding programs) for educating the public of the significance of the Greenway's local natural and historic resources and the need for their management. Interpretive facilities should include: a) trail and interpretive signage; b) trailhead kiosks and observation decks to accommodate individuals and/or groups; c) distribution points for educational materials; and d) wildlife viewing areas.

Topics to consider for interpretation include: a) interaction of the native mangroves with the IR Lagoon; b) importance of Greenway area for mosquito control; c) wetlands as important absorbers of excess rainwater; and d) people's historic and present interaction with IR Lagoon.

Greenway Background and Initiative

During the 1990's, several properties along the Indian River Lagoon south of the 17th Street Bridge in Vero Beach were protected from development by a combination of outright purchases or with development mitigation easements resulting from projects along Indian River Boulevard. They were protected primarily to conserve the native wetland habitat and buffer the shoreline of the Lagoon. These properties which are in both public and private ownership are made up primarily of mangrove swamps ringed by impoundment roads managed by the Indian River Mosquito Control District for minimizing the mosquito populations of eastern Indian River County.

The mangrove swamps along the Indian River Lagoon are very important wetlands for a variety of reasons. They are an important nursery for spawning and early growth stages of a variety of native fish species. They provide an important natural protection during tropical storms to prevent erosion and destruction of shoreline and nearby structures from wave action, wind and flooding. Lastly, they harbor a large variety of native plants and wildlife important for maintaining a healthy ecosystem.

In 2007, a local citizens group and the Indian River Land Trust, which owns one of these properties along the Lagoon, established the idea for an Indian River Lagoon Greenway situated between the South Relief Canal and the 17th Street Bridge. Working with the citizens group, now the Lagoon Greenway Advisory Committee, together with staff from the Mosquito Control District, the Florida Inland Navigation District, and the Indian River County Environmental Lands Program, IRLT has set forth this plan for the Indian River "Lagoon Greenway."

Supporting Greenway Maps

The four supporting maps for the Lagoon Greenway Plan are as follows:

Map #1 – Location Overview

This map indicates the potential Greenway Planning Area in relation to surrounding community features and neighborhoods.

Map #2 – Existing Greenway Resources

The Existing Greenway Resources map illustrates the types and location of existing features that create opportunities for development of the Lagoon Greenway.

Map #3 - Greenway Plan (conceptual)

The Greenway Plan map depicts a series of trails and facilities proposed for construction during the development of the Lagoon Greenway.

Map #4 – Site Plan

The Site Plan map provides a larger scaled drawing of the trails and facilities proposed for construction on the public conservation area owned by Indian River County with F.I.N.D. and the St. John's River Water Management District.

Summary of Key Maps

The following is a description of the features found on Map #2 (Existing Greenway Resources) and Map #3 (Greenway Plan).

Existing Greenway Resources (see Map #2)

An inventory of existing Greenway resources, with a map showing the types and location of existing features, is critical for identifying and analyzing the opportunities for development of the Lagoon Greenway. The inventory is important for understanding the setting of the area and the physical relationship among these features. The map, which encompasses both the Greenway Planning Area and surrounding properties, identifies the following features.

1. Existing Prominent Land & Water Features

Indian River Lagoon, canals/ditches, impounded wetlands, earthen impoundment roads, Lagoon access and viewpoints (4)

2. Nearby Significant Historic, Cultural and Recreation Sites

Public garden (McKee Botanical), public golf course.

3. Existing Land Ownership

Property ownership (see below), municipal highways/roads.

The Greenway Planning Area properties under consideration for potential development of the Lagoon Greenway are as follows:

Florida Navigation Inland District =	53 acres
Indian River County, et al =	38 acres
River Park Place, LP =	30 acres
Indian River Land Trust =	<u>66 acres</u>
TOTAL ACREAGE =	187 acres

*Note: Over 80% of the above property acreages, not include existing mosquito control impoundment roads, were identified as either lowland or river lands by the IR County Property Appraiser.

Analysis of Greenway Opportunities and Challenges

The opportunities as well as the challenges and their possible solutions related to the development of the Lagoon Greenway are summarized below.

The opportunities and challenges were revealed by comparing and evaluating the Greenway Goals with the Existing Greenway Resources (Map #2). This analysis helped in determining the best options for phasing of trails, establishing various access points, and locating related facilities such as viewing platforms, signage and other amenities.

The Opportunities

The area encompassing the undevelopable lands situated along the Indian River Lagoon between the 17th Street Bridge and the South Relief Canal east of Indian River Boulevard contains many opportunities associated with the establishment of a potential greenway trail system. They include:

1. County conservation land on IR Blvd with plans for public access
38-acre tract, with plans for establishing parking access & trails
2. Adjacent residential neighborhoods containing a total of 376 units that could access and use the Greenway -
 - a. River Park Place
 - b. Provence Bay
3. Extensive frontage (approximately 1 mile) on IR Lagoon
4. Potential IR Lagoon viewing and kayak access points

5. Existing mosquito impoundment roads
Approximately 2.2 miles of narrow unimproved (sand and shell) road
6. Abundance of native wetland habitat
Total acreage = approximately 150 acres of lowlands
7. Large variety of birds and other wildlife
Bird species in the area include a variety of ducks, herons, pelicans, and egrets, as well as bald eagles, hawks, ospreys, owls and seasonal migrating birds. Other wildlife that can be readily found in the Greenway Planning Area includes river otters, turtles, dolphin, manatees, bobcats, opossums and raccoons.
8. Nearby public garden
The publicly accessible 20-acre McKee Botanical Garden is situated near the south end of the Greenway Planning Area
9. Adjacent public golf course
Former Vista Golf Course is situated immediately to the west of the Indian River Land Trust property at the south end of the Greenway Planning Area

The Challenges

The area that encompasses the proposed Lagoon Greenway also poses certain challenges for development, use and management of the Greenway. These challenges include:

1. Challenge: Potential seasonal on-site homeless population.
Recommended Solution: Work closely with a homeless refuge organization that regularly communicates with the local homeless population. Such an organization can assist in communicating the need to keep the Greenway clear of homeless camps, which could impede use of the Greenway by others.
2. Challenge: Potential conflicting land management needs and goals of various property owners.

Recommended Solution (for each property):

A. F.I.N.D. (53.19 acres): One concern for potentially conflicting land management goals to the proposed Greenway is with the Florida Navigation Inland District (F.I.N.D.). F.I.N.D. manages its property in the Greenway Planning Area, as it does its other property across the state, for moving and storing natural materials resulting from dredging the Intercoastal Waterway in the Indian River Lagoon. F.I.N.D. representatives have expressed an interest in allowing the Greenway to traverse its property. Given this initial positive communication, it seems the long-term needs for both the Greenway and F.I.N.D. can be readily addressed.

B. IR County (38.87 acres): The County's primary goals for its property parallels the Greenway goals, but it will be important to fine tune the Greenway goals and the goals of the management plan for the property with representatives of the County and other agencies with a partial interest in the property (F.I.N.D. and St. Johns River Water Management District) to ensure the Greenway trail system can be readily accessed by the public from the county lands.

C. River Park Place (30.3 acres): Initial conversations with a representative of this residential development indicate that a public trail along the impoundment road across its lowland area can be used for the Greenway. It will be important to develop a clear long-term agreement with the landowner to ensure the connection between the County property to its north and the Indian River Land Trust property to its south.

D. Adjacent Private Landowners: Adjacent undeveloped private lands may have land uses incompatible with a nearby trail system. Similarly, adjacent residents may or may not want a trail system near their homes. In either case, landowners should be given an opportunity to connect to the Greenway, but their wishes must be respected.

3. Challenge: Potential legal liability issues for public use of trails on private property. Parcels in private ownership could have concerns about liability exposure for allowing public access to their property.

Recommended Solution: These concerns should be addressed on a case-by-case basis with the landowners, as there are precedents for establishing public trails on private land and greatly limiting liability for a landowner. Specifically, the state of Florida has a recreational use statute (Section 375.251 of the Florida Statutes) to encourage private landowners to make private land, water areas and park areas available to the public for outdoor recreation purposes. One part of the statute states that an owner, "who provides the public with a park area or other land for outdoor recreation shall not... become liable or responsible for any injury to persons or property caused by the act ...of a person who goes on that park area or land." This does not apply if a profit is derived from the use of the property by the general public, which would not be the case with the Lagoon Greenway.

4. Challenge: Ensuring Greenway user safety and vandalism prevention

Recommended Solution: Greenway user safety has been a concern for many years with many new Greenway projects across the country. The solution is almost always resolved with the community's involvement with the project. If the Greenway is embraced and used regularly by the residents of Indian River County, then as many studies have shown, vandalism and personal crimes will be greatly limited with even minimal surveillance by local law enforcement agencies. Regardless, it will be imperative to establish to establish a clear framework for maintenance and surveillance of the property. This can occur through the use of volunteers, agency staff and/or local law enforcement agencies.

5. Challenge: Obtaining all necessary permits for parking area(s), trails/boardwalks, observation decks and other amenities.

Recommended Solution: Utilize the assistance of a landscape architect or engineer experienced in obtaining permits for these types of projects to develop and submit clear designs and specifications for the trails and amenities well in advance of anticipated construction.

6. Challenge: Providing emergency access points for police, EMS, and fire rescue vehicles.

Recommended Solution: Meet with appropriate county personnel to determine needs for emergency access. Meet with key landowners (e.g. from F.I.N.D.) to determine if emergency vehicles can be accessed through one or more of these properties on existing unimproved roads from Indian River Boulevard.

7. Challenge: Defunct county-owned water treatment plant. This area could pose a potential danger to users.

Recommended Solution: Meet with County personnel to ensure access to this area by the public is eliminated and that any potentially dangerous elements of the structure are dismantled and removed. In addition, signage about the potential dangers should be posted and the site should be regularly monitored to be sure fences and other public safety features are kept intact.

The Greenway Plan (see Map #3 and Map #4)

The Greenway Plan depicts a series of trails and facilities to be improved/ constructed during the development of the Lagoon Greenway. Below is a summary breakdown of the construction costs by main facility type for the entire proposed Lagoon Greenway project. The tables on pages 9 and 10 include a list of improvements by parcel, highlighting each improvement's character or purpose and providing a range of projected construction costs.

Proposed Greenway Facilities:

<u>Facility</u>	<u>Projected Cost*</u>
Parking & Kiosk:	\$ 15,000
Restroom facilities	\$ 70,000
Upland Trails:	\$ 20,000
Picnic Area:	\$ 5,000
Elevated Boardwalk:	\$250,000
Observation Deck:	\$ 25,000
Impoundment Trails:	\$ 55,000
Other:	<u>\$ 20,000</u>
Total Costs:	\$460,000

*Note: costs shown include an additional 15% contingency

Improvements for County Conservation Property

Improvement	Highlight	Cost Range
Entrance road Pervious parking area	At 8 th Street to parking For 15 – 20 vehicles	\$10,000 to 12,000
Trailhead information kiosk	For entire Greenway	\$750 to 1,500
Restroom facilities	At parking area	\$40,000 to 60,000
Marked upland trails	Connect to impoundment roads	\$10,000 to 15,000
Elevated walkway (see Appendix A)	Across mangrove habitat to observation deck w/ canoe landing	\$180,000 to 220,000
Interpretive signage & wildlife viewing areas	Along trails and on elevated walkway as appropriate	\$2,000 to 3,000
Lagoon observation deck	For lagoon viewing, fishing	\$15,000 to 20,000
Improvement of impoundment trails (see Appendix A)	To better ensure safety of users 2” shell and grade	\$5,000 to 7,000
Directional and information signage	As needed to ensure safe and enjoyable user experience	\$1,000 to 1,200
Gate(s)	As needed to prevent access to non- greenway lands	\$400 to 600
	<i>Total Construction Estimates</i>	<i>\$264,150 to \$340,300</i>
15% Contingency	Add for pre-design flexibility	\$39,500 to \$50,000
	TOTAL	\$304,000 to 390,000

Improvement for F.I.N.D. Property

Improvement	Highlight	Cost Range
Improvement of impoundment trails	To better ensure safety of users	\$10,000 to 12,000
Picnic area on Lagoon	With possible canoe/ kayak only landing for water-based travelers	\$3,000 to 4,000
Directional and information signage	As needed	\$300 to 400
Possible emergency access point at IR Blvd.	Improvement for clear access and turnarounds, etc.	\$2,500 to 5,000
Fencing	As needed to prevent access to non-greenway properties	<u>\$400 to 600</u>
	<i>Total Construction Estimates</i>	<i>\$16,200 to \$22,000</i>
+ 15% Contingency	Add for pre-design flexibility	\$2,300 to \$3,000
	TOTAL	\$18,500 to 25,000

Improvements for Indian River Land Trust and River Park Place Properties

Improvement	Highlight	Cost Range
Improvement of impoundment trails	To better ensure safety of users	\$35,000 to 40,000
Directional/ info signage	As needed	\$300 to 400
Fencing	As needed to prevent access to non-greenway properties	<u>\$400 to 600</u>
	<i>Total Construction Estimates</i>	<i>\$35,700 to \$41,000</i>
+ 15% Contingency	Add for pre-design flexibility	\$5,300 to \$6,000
	TOTAL	\$41,000 to \$47,000

Possible Future Project Expansion

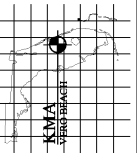
Possible further improvements to impoundment trails to provide a smoother surface for increasing diversity of trail uses (e.g. road bikes). Possible installation of a canoe & kayak launch and associated pervious parking area and signage. Possible trail connection to ORCA property to south and possible construction of second elevated walkway and wildlife observation deck on Indian River Land Trust property.

Lagoon Greenway Timeline

(Prepared March, 2009)

	2009												2010												2011		
	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Indian River Management Plan		1st Draft		Agency Review & Comment	Complete																						
Property Owners, Supporters and Advisory Committee Coordination		Meets with All					Continued Updates as Appropriate																				
Memorandum of Agreement (MOA)							MOA with IRLT & IRC*																				
Design and Permitting																											
F.I.N.D. Grant																											
Recreation Trails Program Grant (RTP)																											
Construction																											

* IRC refers to I.R.C./F.I.N.D./S.J.R.W.M.D. Property



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 CONSULTING ENGINEERS AND PLANNERS
 80 ROYAL PALM POINT, SUITE 401 VERO BEACH, FL 32960
 PHONE: (772) 569-5505 FAX: (772) 569-1455 E-MAIL: Civil@KnightMcGuire.com
 CERTIFICATE OF AUTHORIZATION NUMBER - 00006335

Lagoon Greenway Plan
 Indian River County, Florida



Recommendations of an Organizational Framework for Development, Promotion, and Management of the Lagoon Greenway

The Lagoon Greenway will need a level of coordination during its development phase that will require a partnership of involved agencies and organizations. Once implemented, the Greenway will need to be promoted to the public and managed and maintained to ensure the safe use and enjoyment of its users, again through a partnership with cooperating entities.

Three entities – the Indian River Land Trust, Indian River County, and the Indian River Mosquito Control District, are best suited to collectively provide the services needed to promote, manage and maintain the Greenway as follows:

Indian River Land Trust (IRLT)

It is proposed that the Indian River Land Trust provide overall promotion as well as coordination and tracking of the Greenway's development and long-term management and maintenance to allow the project to be completed in a timely fashion and to better ensure seamless service to the public on a regular basis. The Indian River Land Trust, through the use of its professional staff and an associated volunteer/ friends group could:

1. Provide staff support in coordinating design and development of trails, signs and facilities;
2. Help secure funds (private and public) to assist with design and construction and for additional improvements/ maintenance as appropriate;
3. Promote and coordinate the opening and continued use of the Greenway to the public through its website, newsletter, press releases, maps, and brochures, etc.;
4. Maintain a record of events and incidents, or issues that arise with regard to the Greenway's facilities and use, and provide reports to involved agencies;
5. Organize and conduct clean-up(s) of the trails and facilities throughout the year;
6. Avail itself as a primary contact (by telephone and through its website) for users or nearby residents who have concerns or questions regarding the Greenway;
7. Coordinate and follow-up with the County and other involved agencies for work required to repair or maintain trails or facilities on the Greenway; and
8. Assist with maintenance activities as appropriate.

Indian River County

Indian River County, through the use of its Environmental Lands Program staff and County Lands Manager, could:

1. Secure funding for the development of trails, walkways, signs and facilities located on the 38-acre County conservation property and other Greenway parcels;
2. Utilize County funds to assist in meeting matches required by grants to support design and construction of Greenway;
3. Utilizing reports from the Indian River Land Trust and the Indian River County Mosquito Control District, conduct management and maintenance work, as necessary and as funding permits, on all of the Greenway trails, walkways, and amenities (e.g. kiosks, restrooms, parking area) located on the 38-acre County conservation property;
4. Secure funds as appropriate, for repairs or additional improvements to trails and facilities as needed;
5. Explore opportunities in securing press coverage, as appropriate, regarding the Greenway;
6. Assist in promoting the Greenway through its website and other appropriate means; and
7. Assist with the use of trucks, personnel and equipment with clean-ups of the trails and facilities throughout the year.

Indian River Mosquito Control District (IRMCD)

The Indian River County Mosquito Control District, through the use of its professional staff during the normal course of IRMCD business, could:

1. Provide a regular presence on the Lagoon Greenway trails and elevated walkways;
2. Provide reports, as appropriate, to the Indian River Land Trust and Indian River County on observations of the Greenway uses and conditions;
3. Provide minor maintenance work (e.g. clearing trail obstructions, filling holes and remedying small acute safety concerns) on the Greenway trails and elevated walkways;
4. Assist with the use of trucks, personnel and equipment, as appropriate, with clean-ups of the trails and amenities throughout the year;

Possible Funding Sources for Design and Development of Lagoon Greenway

1. Florida Inland Navigation District (F.I.N.D.) – Matching funds available each year for design and construction of projects that provide access to the Indian River Lagoon. F.I.N.D. representatives have suggested that Indian River County could be the applicant for design and construction of the elevated walkway, parking area, waterfront picnic area, and other possible amenities.

Who Can Apply: Local governments only

Maximum Grant Amount: Varies - Up to \$500,000 was available in 2009 for IR County

Match Requirements: F.I.N.D. grants usually require a 50% cash/ in-kind match

Cycle/ Application Deadline: Annually/ April

2. Florida Recreational Trail Program (RTP) – Funding available through the Florida Department of Environmental Protection Office of Greenway Trails for design and construction of motorized and non-motorized trails.

Who Can Apply: Local governments and approved non-profit organizations

Maximum Grant Amount: In 2008, \$250,000 for non-motorized trails

Match Requirements: The minimum cash/ in-kind match is 20%; increasing the match, up to 50% match will likely increase chances of being awarded a grant.

Cycle/ Application Deadline: Annually/ March

3. Kodak American Greenways Awards – Small grants available nationwide through The Conservation Fund (TCF) for planning, design and development of recreational greenways.

Who Can Apply: prefer non-profit organizations, but local governments can also apply

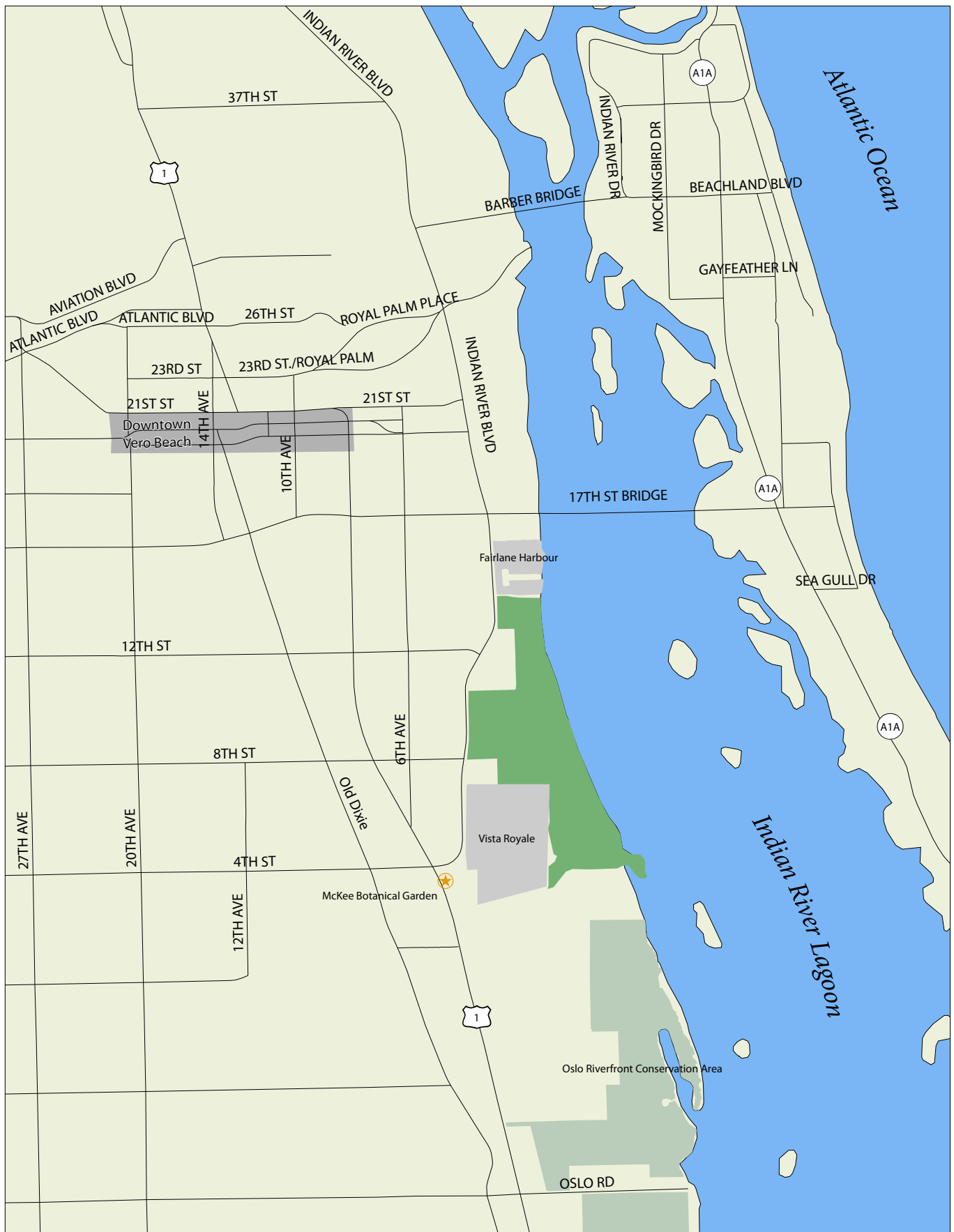
Maximum Grant Amount: \$2,500, but most grant awards are between \$500 and \$1,000

Match Requirements: No match is required

Cycle/ Application Deadline: Annually/ June

4. Private Family Foundations and Individual Donors – Funds may be available from the Indian River Land Trust through charitable gifts to assist with required matches for the above grant opportunities.

5. County Environmental Land Program Bond Funding – Funds remaining from the 2004 Environmental Land Bond Referendum may be available to help match grants needed for improvements to, and management of, the 38-acre County conservation property.

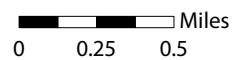


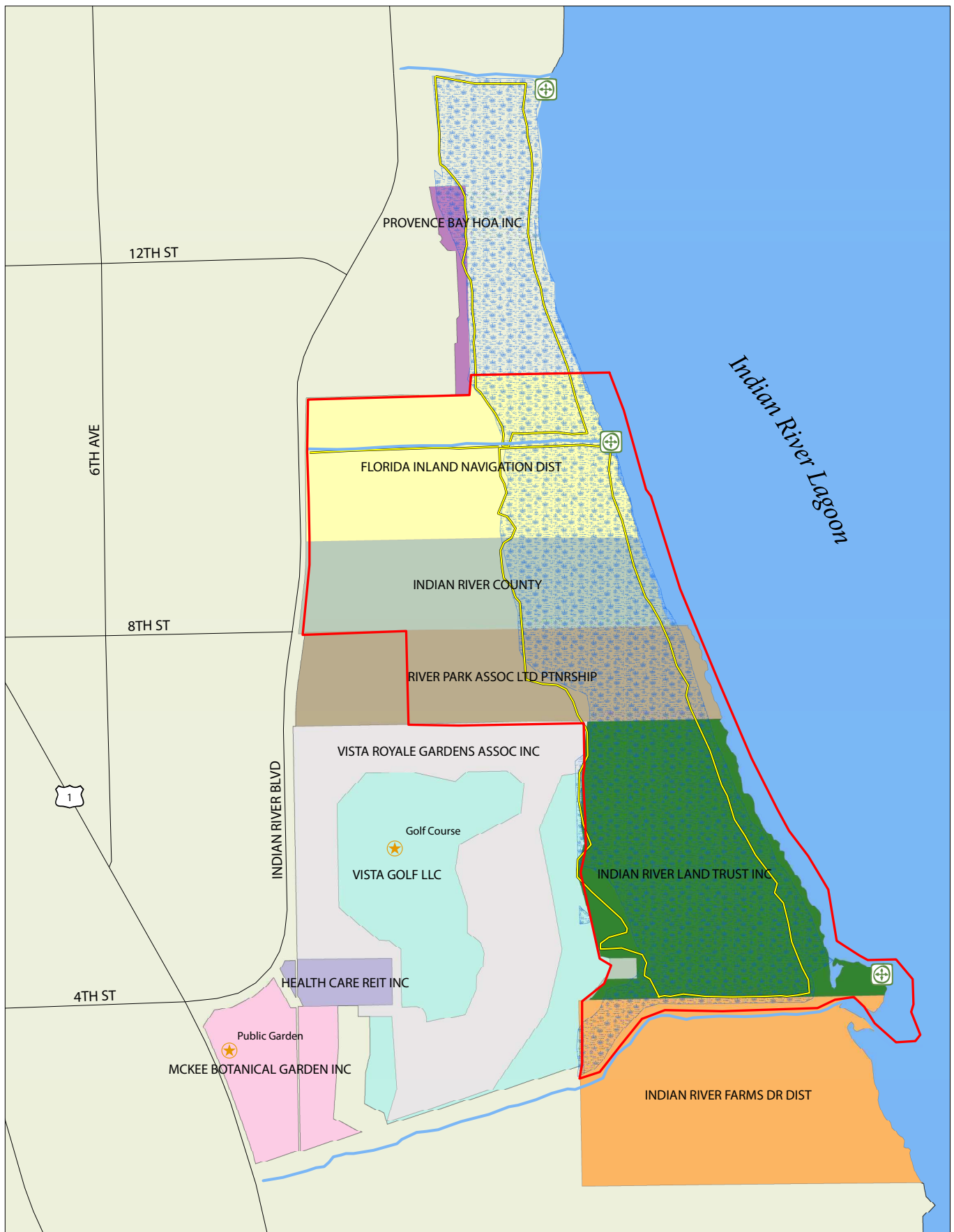
Lagoon Greenway

- Greenway Planning Area
 -
- Downtown Vero Beach
 -







Map 1: Location Overview

Map Prepared by:



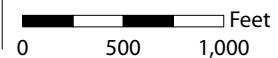


Lagoon Greenway

- | | | |
|---|---|--|
| Greenway Planning Area
 | Canals
 | Public Places
 |
| Impoundment Roads
 | Wetlands
 | Viewpoints
 |

Map 2: Existing Greenway Resources

Map Prepared by:





North



Graphic Scale

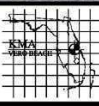
Legend

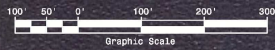
- Trail/Educational Kiosk
- Public Places
- Parking
- Picnic Site
- Signage
- Boardwalk
- Greenway Planning Area
- Viewpoints
- Upland Trail
- Fencing
- Impoundment Roads
- Wetlands

Shoreline Picnic Area
 - Educational Signage
 - Picnic Table(s)
 - Lagoon Viewing

Observation deck
 - Canoe Landing
 - Wildlife/Lagoon Viewing
 - Fishing
 - Educational Signage

POTENTIAL EXPANSION
 - Observation Deck
 - Wildlife Viewing
 - Canoe Landing
 - Education





Legend

- Trail/Educational Kiosk
- Parking
- Picnic Site
- Signage
- Boardwalk
- Greenway Planning Area
- Viewpoints
- Upland Trail
- Fencing
- Impoundment Roads
- Wetlands

- Observation Deck**
- Canoe Landing
 - Wildlife/Lagoon Viewing
 - Fishing
 - Educational Signage

MARK	REVISION	DATE	BY	DATE

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 CERTIFICATE OF AUTHORIZATION NUMBER - 0006335



Lagoon Greenway
 Indian River County, Florida

I.R.C. Parcel Site Plan

KMA
 DATE: _____
 Scott B. McGuire, P.E.
 FL Reg No. 39273

PROJECT NO.
 CR-036
SHEET
 Map 4

Appendix A

Greenway Partner Agencies

Indian River Land Trust

Indian River County Environmental Lands Program

Indian River Mosquito Control District

Florida Inland Navigation District (F.I.N.D.)

Greenway Partner Companies

CivaTerra

Knight, McGuire & Associates

Kimley-Horn & Associates

David Cox Consulting

Greenway Advisory Committee

Victoria Clark-Jones

Edith Bradshaw

Leon Washut

Ryan Morrell, AICP

CivaTerra

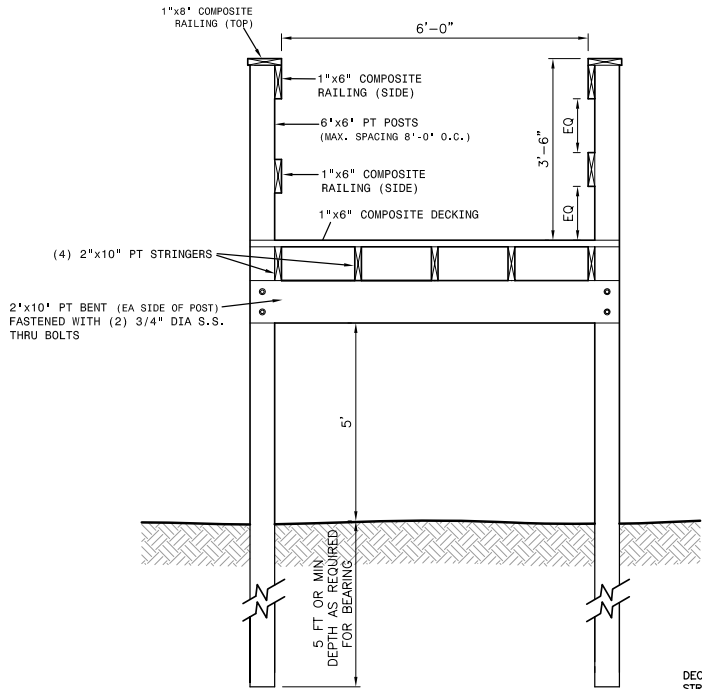
Rich Wilson

IR Mosquito Control District

Kathleen Schulke

Bonnie Veron

Grant Withers



Typical Walkover Section

N.T.S.

Materials Specifications

WOOD:
 ALL WOOD MEMBERS SHALL BE NO.1 SOUTHERN YELLOW PINE (UNLESS OTHERWISE SPECIFIED), PRESSURE TREATED IN ACCORDANCE WITH THE A.W.P.A. STANDARD C-2. THE PRESERVATIVE USED SHALL BE A WATERBORNE TYPE SUCH AS 'B' OR 'C' AS COVERED IN FEDERAL SPEC. TT-W-535, AND A.W.P.A. STANDARDS P5, C2, AND C14. PILING SHALL BE TREATED WITH NOT LESS THAN 2.5 LBS./C.F. OF C.C.A. PRESERVATIVE SALTS, WHILE ALL OTHER WOOD SHALL BE A MIN OF 0.40 LBS./C.F. OF C.C.A. PRESERVATIVE SALTS. ALL WOOD TO BE STRAIGHT, TRUE, AND FREE FROM SPLINTS, WANE OR OTHER OBJECTIONABLE DEFECTS. BOLT HOLES SHALL BE DRILLED TO THE BOLT DIAMETER AND THEN HAMMERED INTO PLACE.

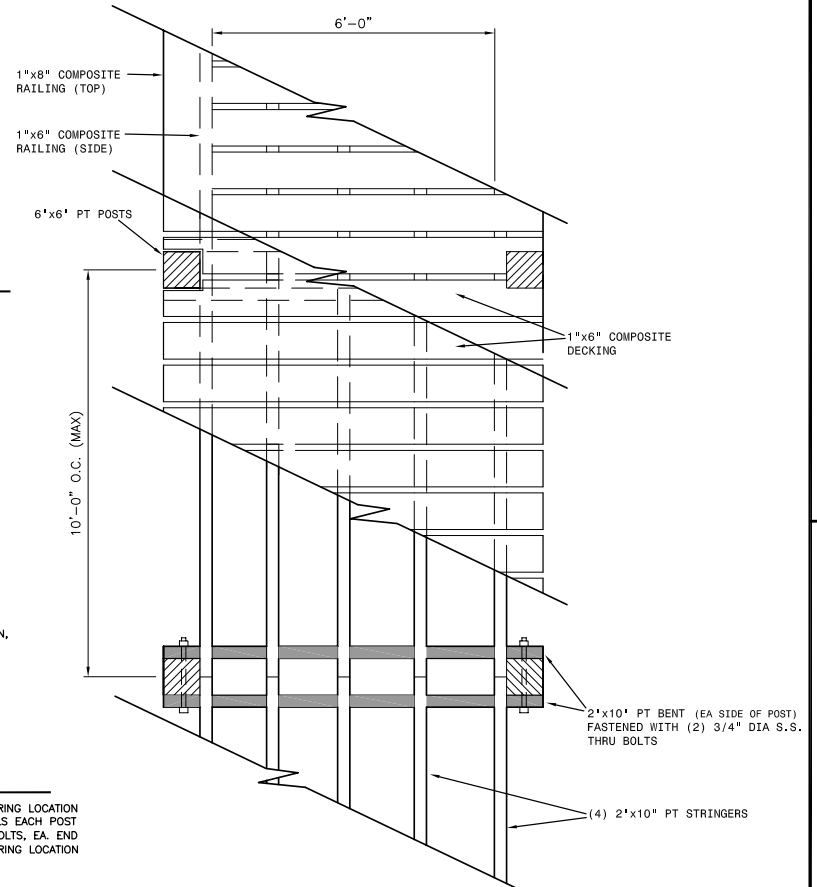
COMPOSITE:
 ALL COMPOSITE MATERIAL SHALL BE A BLEND OF WOOD FIBER AND POLY (RECYCLED) MATERIALS, WITH EMBOSSED WOOD GRAIN.

HARDWARE:
 ALL BOLTS, SCREWS, WASHERS, PLATES, NUTS, NAILS, ETC. SHALL BE STAINLESS STEEL.

CONSTRUCTION NOTE:
 1. CONSTRUCT RAMP AND RAILING IN ACCORDANCE WITH THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION.

Fastening Schedule

DECKING.....	2-1/2" #8 SS FLAT HEAD BOAT SCREWS @ EACH BEARING LOCATION
STRINGERS.....	(3) 16D NAILS EACH POST
BENTS.....	(2) 3/4" DIA. S.S. BOLTS, EA. END
TOP AND SIDE RAILS.....	2-1/2" #8 SS FLAT HEAD BOAT SCREWS @ EACH BEARING LOCATION



Typical Walkover Plan View

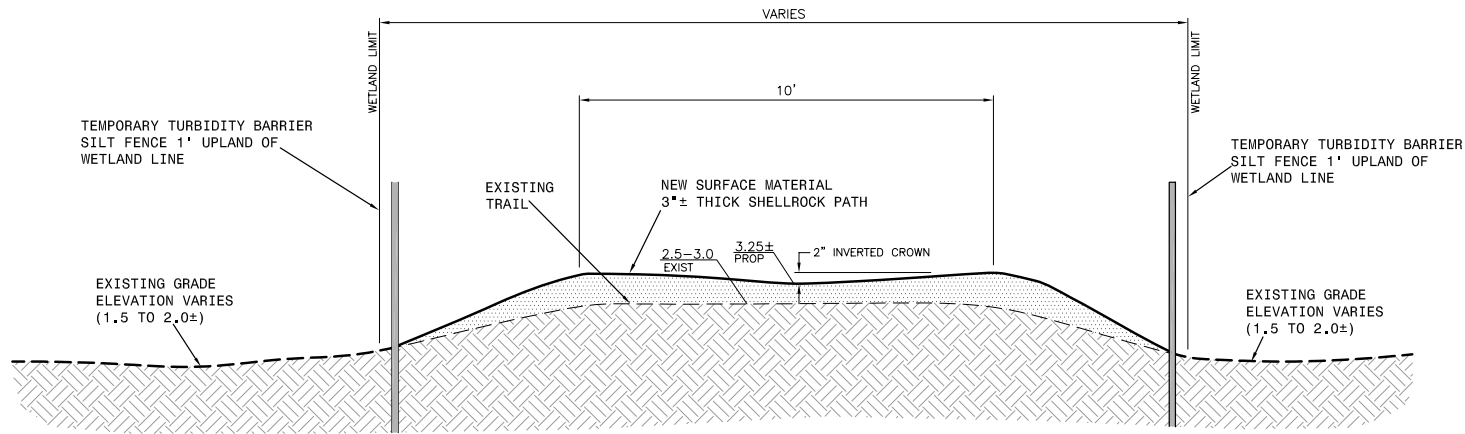
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 PHONE: (772) 569-5505 FAX: (772) 569-1455 E-MAIL: Ch3@knightmcguire.com
 CERTIFICATE OF AUTHORIZATION NUMBER: 00006335

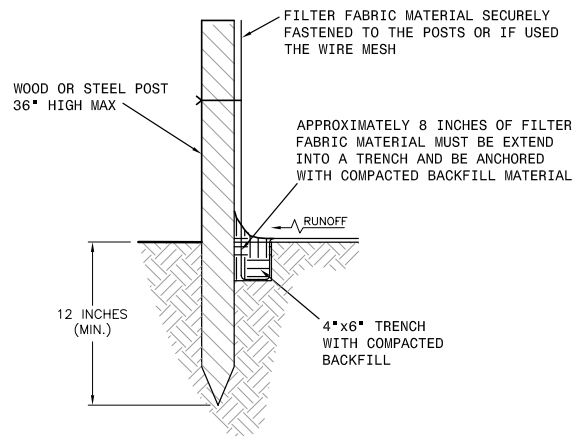
Indian River Land Trust
 Lagoon Greenway Plan
 Indian River County, Florida





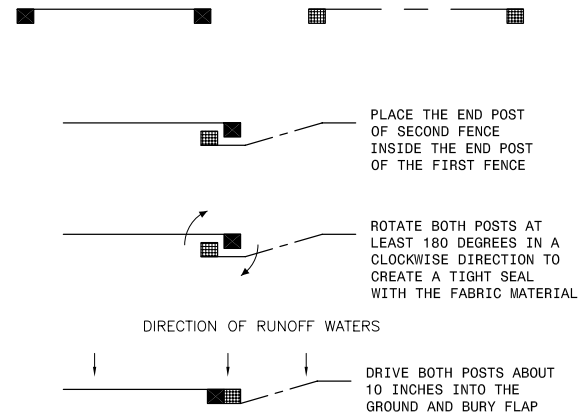
Typical Trail Improvement Section

N.T.S.



Standard Detail Silt Fence Trench With Native Backfill

N.T.S.



Attaching Two Silt Fences

N.T.S.



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